

**Forest Department
The State of Himachal Pradesh, India**

**The Preparatory Study
on
Himachal Pradesh Forest Ecosystems Management
and
Livelihoods Improvement Project
in India**

**Final Report
(Advanced Version)**

Volume 2 Part II: Project

February 2018

Japan International Cooperation Agency (JICA)

NIPPON KOEI CO., LTD.

| |
|---------------|
| 4R |
| JR(先) |
| 18-012 |

**Forest Department
The State of Himachal Pradesh, India**

**The Preparatory Study
on
Himachal Pradesh Forest Ecosystems Management
and
Livelihoods Improvement Project
in India**

**Final Report
(Advanced Version)**

Volume 2 Part II: Project

February 2018

Japan International Cooperation Agency (JICA)

NIPPON KOEI CO., LTD.

**Preparatory Study on Himachal Pradesh Forest Ecosystems Management
and Livelihoods Improvement Project in India**

Final Report (Advanced Version)

Volume 2

Table of Contents

Executive Summary

Data Summary

List of Abbreviations

Part II: Project

| | |
|--|---------|
| CHAPTER 1 PROJECT AREA PRIORITISATION AND PRIORITISED PROJECT AREAS | II-1-1 |
| 1.1 Project Areas Proposed by HPFD..... | II-1-1 |
| 1.2 Prioritised Project Areas | II-1-2 |
| 1.2.1 Project Area Prioritisation Criteria..... | II-1-2 |
| CHAPTER 2 PRELIMINARY SITUATIONAL ANALYSIS OF THE POTENTIAL PROJECT AREA | II-2-1 |
| 2.1 Forest Administration | II-2-1 |
| 2.2 Present Conditions of Forest and Forest Area | II-2-2 |
| 2.2.1 Forest Cover..... | II-2-2 |
| 2.2.2 Major Ecosystems in the Prioritised Project Area | II-2-3 |
| 2.3 Forest Management | II-2-7 |
| 2.3.1 Forest Management System..... | II-2-7 |
| 2.3.2 Departmental Natural Forest Management, Reforestation, Afforestation | II-2-10 |
| 2.3.3 Joint Forest Management..... | II-2-11 |
| 2.3.4 Community Forest Management, Forest Rights Act and Timber Distribution to Right Holders | II-2-14 |
| 2.3.5 Grassland / Pasture Management..... | II-2-17 |
| 2.3.6 Cold Desert /Permanent Snow Area Management..... | II-2-17 |
| 2.4 Wildlife and Biodiversity | II-2-18 |
| 2.4.1 Protected Area..... | II-2-18 |
| 2.4.2 Biodiversity Richness | II-2-20 |
| 2.4.3 Human-Wildlife Conflict | II-2-21 |
| 2.4.4 Invasive/Exotic Species | II-2-22 |
| 2.4.5 Eco-development and Ecotourism | II-2-23 |
| 2.4.6 Ecosystem Services..... | II-2-25 |
| 2.5 Forest Products and Markets | II-2-25 |
| 2.5.1 Major Forest Products..... | II-2-25 |
| 2.5.2 NTFPs | II-2-26 |
| 2.5.2.1 NTFP Procurement in Project Area..... | II-2-26 |

| | | |
|----------------------------------|---|---------|
| 2.5.2.2 | Marketing/ Value Chain of NTFPs in the Project Area | II-2-30 |
| 2.5.3 | Forest Based Industries in the Prioritised Project Districts..... | II-2-33 |
| 2.6 | Farm Forestry and Social Forestry | II-2-33 |
| 2.7 | Socio Economic Characteristics | II-2-35 |
| 2.7.1 | Livelihood..... | II-2-37 |
| 2.7.2 | Access to Financial Services..... | II-2-49 |
| 2.7.3 | Forest Uses..... | II-2-56 |
| 2.7.4 | Gender and Community Forest Management | II-2-60 |
| 2.7.5 | SHGs and SHG based Livelihood Interventions..... | II-2-64 |
| 2.7.6 | Microfinance | II-2-66 |
| CHAPTER 3 PROJECT FRAMEWORK..... | | II-3-1 |
| 3.1 | Project Plan Outline of the Prioritised Project..... | II-3-1 |
| 3.2 | Major Changes from DPR Made in the Project Framework | II-3-2 |
| 3.3 | Project Needs and Rationale..... | II-3-3 |
| 3.3.1 | Relevance and Linkages with Government Policies and Priorities | II-3-3 |
| 3.3.2 | Need to Enhance Forest Quality | II-3-4 |
| 3.3.3 | Need to Enhance Biodiversity Conservation | II-3-5 |
| 3.4 | Project Objectives and Approaches | II-3-5 |
| 3.5 | Project Log Frame | II-3-8 |
| 3.6 | Project Components Framework | II-3-11 |
| 3.7 | Project Components..... | II-3-12 |
| 3.7.1 | “Component 1: Sustainable Forest Ecosystem Management” | II-3-12 |
| 3.7.1.1 | “Component 1.1: Preparatory Works for Component 1” | II-3-12 |
| 3.7.1.2 | “Component 1.2: Participatory Forest Management (PFM) Mode” | II-3-20 |
| 3.7.1.3 | “Component 1.3: Training for VFDSs”..... | II-3-27 |
| 3.7.1.4 | “Component 1.4: Departmental Mode”..... | II-3-29 |
| 3.7.1.5 | “Component 1.5: Training of Project related Staff of HPFD” | II-3-35 |
| 3.7.1.6 | “Component 1.6: Research” | II-3-37 |
| 3.7.2 | “Component 2: Biodiversity Conservation” | II-3-38 |
| 3.7.2.1 | “Component 2.1: Scientific Biodiversity Management”..... | II-3-39 |
| 3.7.2.2 | “Component 2.2: Training of Project related Staff of HPFD” | II-3-50 |
| 3.7.2.3 | “Component 2.3: Research” | II-3-51 |
| 3.7.2.4 | “Component 2.4: Community Based Biodiversity Management” | II-3-52 |
| 3.7.2.5 | “Component 2.5: Training of DMUs/ FTUs/ BMCs and Sub-committee” | II-3-60 |
| 3.7.3 | “Component 3: Livelihood Improvement Support”..... | II-3-61 |
| 3.7.3.1 | “Component 3.1: Community Development” | II-3-61 |
| 3.7.3.2 | “Component 3.2: NTFP based Livelihood Improvement” | II-3-66 |
| 3.7.3.3 | “Component 3.3: Non NTFP based Livelihood Improvement” | II-3-86 |
| 3.7.4 | Component 4: Institutional Capacity Strengthening | II-3-92 |
| 3.7.4.1 | “Component 4.1: Preparatory Works”..... | II-3-92 |
| 3.7.4.2 | “Component 4.2: Capacity Development” | II-3-99 |

| | |
|--|----------|
| 3.7.4.3 “Component 4.3: Monitoring and Evaluation” | II-3-104 |
| 3.7.4.4 “Component 4.4: Research” | II-3-118 |
| 3.7.4.5 “Component 4.5: PMC” | II-3-119 |
| 3.7.4.6 “Component 4.6: Phase-out/ Sustainability Mechanism” | II-3-119 |
| | |
| CHAPTER 4 PROPOSED INSTITUTIONAL FRAMEWORK | II-4-1 |
| 4.1 Analysis of Institutional Arrangements and Options..... | II-4-1 |
| 4.1.1 Historical Transact of HPFD under PFM Initiatives and Analysis of PFM Institutionalisation | II-4-1 |
| 4.1.2 Way Forward for Evolving Institutional Set-up under the Project..... | II-4-1 |
| 4.1.3 Options Considered for Institutional Arrangement for the Project. | II-4-3 |
| 4.1.4 Further Consideration for Priority Institutional Arrangements..... | II-4-6 |
| 4.2 Overview of Proposed Institutional Arrangements for the Project..... | II-4-7 |
| 4.2.1 Overall Framework | II-4-7 |
| 4.3 Details of Proposed High Power Committee and Management Bodies of PMU..... | II-4-10 |
| 4.3.1 High Power Committee (HPC) of the Project..... | II-4-10 |
| 4.3.2 Society mode for Project Implementation | II-4-11 |
| 4.4 Details of Proposed Project Implementation Units | II-4-15 |
| 4.4.1 Proposed Structure of Project Management Units (PMU)..... | II-4-15 |
| 4.4.2 Proposed Structure of Forest Circle Coordination Unit (FCCU)..... | II-4-19 |
| 4.4.3 Proposed Structure of Divisional Management Unit (DMU) | II-4-20 |
| 4.4.4 Proposed Structure of Field Technical Unit (FTU)..... | II-4-23 |
| 4.4.5 Other Implementing/ Facilitating Institutions..... | II-4-25 |
| 4.5 Proposed Community Implementation Organisation: Village Forest Development Society (VFDS) | II-4-26 |
| 4.5.1 Overview..... | II-4-26 |
| 4.5.2 Further Option for Long Term Perspective..... | II-4-27 |
| 4.6 Key Managerial Features of Proposed Institutional Arrangements | II-4-28 |
| 4.6.1 Budgetary Provision..... | II-4-28 |
| 4.6.2 Accounting Procedures | II-4-29 |
| 4.6.3 Auditing | II-4-30 |
| 4.6.4 Compliances of General Financial Rules and General Rules of Business..... | II-4-31 |
| 4.6.5 Structural Integrity | II-4-32 |
| 4.6.6 Procurement | II-4-32 |
| 4.6.7 Corpus/ Revolving Fund..... | II-4-32 |
| | |
| CHAPTER 5 PROPOSED IMPLEMENTATION SCHEDULE..... | II-5-1 |
| | |
| CHAPTER 6 PROPOSED PROCUMUREMENT AND IMPLEMENTATION METHOD | II-6-1 |
| | |
| CHAPTER 7 OPERATION AND MAINTENANCE..... | II-7-1 |

| | |
|---|---------|
| CHAPTER 8 OPERATION AND EFFECT INDICATORS | II-8-1 |
| CHAPTER 9 ENVIRONMENTAL AND SOCIAL CONSIDERATIONS OF THE PROJECT | II-9-1 |
| 9.1 Overview | II-9-1 |
| 9.2 Institutional Arrangement and Capacities of Implementing Agency for Environmental and Social Consideration..... | II-9-1 |
| 9.2.1 Overview..... | II-9-1 |
| 9.2.2 Institutional Arrangement | II-9-2 |
| 9.2.3 Draft Environmental and Social Management System Checklist | II-9-5 |
| 9.3 Management and Mitigation of Environmental and Social Risks | II-9-10 |
| 9.3.1 Draft Environmental and Social Assessment Framework (ESAF) | II-9-10 |
| 9.3.2 Draft Vulnerable Scheduled Tribes Planning Framework (VSTPF)..... | II-9-13 |
| 9.3.3 Draft Involuntary Resettlement Plan Framework (IRPF) | II-9-16 |
| CHAPTER 10 PROJECT RISKS AND ASSUMPTIONS..... | II-10-1 |

List of Tables

Part II: Project

| | |
|--|---------|
| Table 1.1.1 Forest Divisions and Protected Areas within Proposed Project Area | II-1-1 |
| Table 1.2.1 Selection Process and Criteria | II-1-2 |
| Table 1.2.2 Indicative Prioritised Divisions, Ranges and Protected Areas..... | II-1-5 |
| Table 2.1.1 Brief of Territorial Divisions Located in the Prioritised Project Districts | II-2-1 |
| Table 2.2.1 Division-wise Forest Cover of Divisions Located in the Prioritised Project Districts | II-2-2 |
| Table 2.2.2 Division-wise Ecosystem (Vegetation) Type of Divisions Located in the Prioritised Project Districts | II-2-5 |
| Table 2.3.1 Working Circle Areas of Divisions Located in Prioritised Project Districts (Except Protected Area)..... | II-2-7 |
| Table 2.3.2 Permanent Forest Nursery Status in Divisions Located in Prioritised Project Districts..... | II-2-11 |
| Table 2.3.3 JFMCs under FDA in Divisions Located in Prioritised Project Districts | II-2-12 |
| Table 2.3.4 Summary of VFDS/ JFMCs Visited by the Study Team..... | II-2-12 |
| Table 2.3.5 Preliminary Assessment of Areas Suitable for JFM Mode Forestry Operation..... | II-2-14 |
| Table 2.3.6 Distribution of Timber to the Right Holders in Proposed Project Area..... | II-2-16 |
| Table 2.4.1 Protected Areas Located in Prioritised Project Districts..... | II-2-18 |
| Table 2.4.2 Current Status of Wildlife Divisions of Prioritised Project Districts | II-2-19 |
| Table 2.4.3 Division-wise Biological Richness of Divisions Located in Prioritised Project Districts | II-2-20 |
| Table 2.4.4 Division-wise Human Animal Conflicts of Project Districts Proposed by HPFD (2016-17)..... | II-2-21 |
| Table 2.4.5 Circle-wise Exotic Weed Infestation in Forest Lands (January-March 2011)..... | II-2-22 |
| Table 2.4.6 Ecotourism Sites Promoted by HPECOSOC in the Prioritised Project Districts | II-2-24 |
| Table 2.4.7 Trekking Tours Conducted by HPECOSOC..... | II-2-24 |
| Table 2.5.1 NTFPs Procured and Traded in the Proposed Project Districts | II-2-26 |
| Table 2.5.2 Important NTFPs Exported from Nachan Forest Division, Mandi | II-2-27 |
| Table 2.5.3 Important NTFPs Exported from Mandi Forest Division..... | II-2-27 |
| Table 2.5.4 Important NTFPs Exported from Chamba Circle..... | II-2-27 |
| Table 2.5.5 Important Markets for NTFPs | II-2-30 |
| Table 2.5.6 Important Stakeholder Operating in the Project Area for NTFP Research, Procurement, Processing and Trade | II-2-32 |
| Table 2.6.1 Operational Holdings in the Prioritised Project Districts | II-2-34 |
| Table 2.6.2 Culturable Wasteland and Fallow Land in Prioritised Project Districts | II-2-35 |
| Table 2.6.3 Area under Fruits Cultivation (2014-15) | II-2-35 |
| Table 2.7.1 Sample Households – Livelihood Survey..... | II-2-36 |
| Table 2.7.2 Villages Visited for PRA | II-2-36 |
| Table 2.7.3 Economic Status by Ration Card..... | II-2-38 |
| Table 2.7.4 Social Groups of Surveyed Households | II-2-39 |
| Table 2.7.5 Demography of the Surveyed Households | II-2-40 |
| Table 2.7.6 Households Engaged in Agriculture and Horticulture..... | II-2-41 |
| Table 2.7.7 Households Engaged in Salaries and Wages | II-2-42 |
| Table 2.7.8 Households Engaged in Animal Husbandry, Handicrafts and Other Activities..... | II-2-43 |
| Table 2.7.9 Average Household Income among the Survey Households | II-2-44 |
| Table 2.7.10 Average Household Income among the Survey Households by Economic Status | II-2-44 |
| Table 2.7.11 Average Household Expenditure among the Survey Households..... | II-2-46 |
| Table 2.7.12 Household Expenditure by Economic Status..... | II-2-46 |
| Table 2.7.13 Various Community Institutions in the Surveyed Villages | II-2-48 |

| | |
|--|---------|
| Table 2.7.14 Mahila Mandal and Yuvak Mandal..... | II-2-48 |
| Table 2.7.15 Government Programmes/ Schemes in the Surveyed Villages..... | II-2-49 |
| Table 2.7.16 Status of Savings and Utilisation of Bank Accounts for Other Types of Transactions between April 2016 and March 2017 | II-2-50 |
| Table 2.7.17 Status of Bank Loans taken by the Family Members | II-2-51 |
| Table 2.7.18 Types of Household Energies Used | II-2-53 |
| Table 2.7.19 Consumption of LPG in the Survey Villages..... | II-2-54 |
| Table 2.7.20 Fuelwood Consumption in the Surveyed Villages..... | II-2-55 |
| Table 2.7.21 Grazing Area and Pasture | II-2-57 |
| Table 2.7.22 Grassland and Pasture Management Activities..... | II-2-57 |
| Table 2.7.23 Issues Related to NTFP Harvesting, Processing and Marketing Identified by the Survey Households (Livelihood Survey)..... | II-2-58 |
| Table 2.7.24 NTFPs Harvested in the Surveyed Villages..... | II-2-59 |
| Table 2.7.25 Land Holding in the Surveyed Villages..... | II-2-60 |
| Table 2.7.26 Daily Time Schedule – Case of Malyawar Village, Bilaspur Forest Division..... | II-2-61 |
| Table 2.7.27 Average Wages in the Surveyed Villages..... | II-2-62 |
| Table 2.7.28 Summary of the Land Ownership..... | II-2-62 |
| Table 2.7.29 Gender Roles in Forest Management | II-2-63 |
| Table 2.7.30 SHGs Visited during the Study in the Target Districts | II-2-64 |
| Table 2.7.31 Characteristics of SHGs in Project Area..... | II-2-65 |
| Table 3.1.1 Project Plan Outline of the Prioritised Project..... | II-3-1 |
| Table 3.2.1 Restructuring of Project Components in the DPR..... | II-3-2 |
| Table 3.5.1 Log Frame: Narrative Summary (Version 4) | II-3-9 |
| Table 3.6.1 Restructured Components/ Sub Components | II-3-11 |
| Table 3.7.1.1 Indicative Broad Criterion of Selection of Project Intervention Areas..... | II-3-13 |
| Table 3.7.1.2 Preparation of Maps for Micro Planning..... | II-3-14 |
| Table 3.7.1.3 Indicative Criteria for Ward Prioritisation – Sustainable Forest Management..... | II-3-15 |
| Table 3.7.1.4 Points to be Discussed and Expected Outcome of the Stakeholder Consultation | II-3-16 |
| Table 3.7.1.5 Indicative Terms of Engagement - Ward Facilitators | II-3-17 |
| Table 3.7.1.6 Overall Description of Forestry Operations in the Project | II-3-22 |
| Table 3.7.1.7 Indicative Topics for Project Orientation and Forest/ Biodiversity Nexus..... | II-3-27 |
| Table 3.7.1.8 Indicative Topics for Planning, Implementation and Group Management..... | II-3-28 |
| Table 3.7.1.9 Proposed Exposure Visits by Community Institutions | II-3-29 |
| Table 3.7.1.10 Annual and Quarterly Joint Workshops by VFDSs and BMC..... | II-3-29 |
| Table 3.7.1.11 Indicative Description of Modern Nurseries to be Upgraded..... | II-3-32 |
| Table 3.7.1.12 Indicative Description of Range Level Nurseries to be Upgraded | II-3-32 |
| Table 3.7.1.13 Indicative Training for DMU Subject Matter Specialist/ FTU Coordinators for Community Planning and Livelihood Improvement | II-3-36 |
| Table 3.7.1.14 Proposed Training for Ward Facilitators..... | II-3-37 |
| Table 3.7.2.1 Brief Description of the Potential Activities under Scientific Biodiversity Management | II-3-40 |
| Table 3.7.2.2 Animal-Habitat Associations of Characteristic Animals in HP | II-3-45 |
| Table 3.7.2.3 Indicative Training for Divisional/ Range Staffs for Scientific Biodiversity Management..... | II-3-50 |
| Table 3.7.2.4 Description of Key Activities under Community Based Biodiversity Conservation Sub-Component..... | II-3-52 |
| Table 3.7.2.5 Indicative Criteria for Selection of BMCs..... | II-3-54 |

| | |
|---|----------|
| Table 3.7.2.6 Indicative Terms of Engagement of GP Mobiliser and Ward Facilitator..... | II-3-55 |
| Table 3.7.2.7 Indicative Topics for Project Orientation and Forest/ Biodiversity Nexus..... | II-3-60 |
| Table 3.7.3.1 Potential Activities under Community Development..... | II-3-63 |
| Table 3.7.3.2 Indicative Outline of the Guidelines and Manuals and Training Programmes for Community Development..... | II-3-64 |
| Table 3.7.3.3 Suggested Clusters for NTFP Enterprise Development..... | II-3-66 |
| Table 3.7.3.4 Human Resources to be deployed with Jadi-Buti Cell..... | II-3-68 |
| Table 3.7.3.5 Tentative List of NTFPs including Medicinal Plants to be Cultivated in Non-forestland..... | II-3-79 |
| Table 3.7.3.6 Training programmes to be organised by the Jadi-Buti Cell..... | II-3-84 |
| Table 3.7.3.7 Training and capacity building at the cluster level (for each cluster)..... | II-3-85 |
| Table 3.7.3.8 Mapping of Livelihood Options in the Proposed Project Areas..... | II-3-87 |
| Table 3.7.3.9 Indicative Cluster Based Livelihood Activities..... | II-3-89 |
| Table 3.7.3.10 Outline of Manuals- CIG/ SHG Capacity Building..... | II-3-90 |
| Table 3.7.3.11 Proposed Training for SHGs and CIGs..... | II-3-91 |
| Table 3.7.3.12 Proposed Exposure Visits by Community Institutions..... | II-3-92 |
| Table 3.7.4.1 Proposed IT Infrastructure at PMU & IT Cell (Indicative)..... | II-3-93 |
| Table 3.7.4.2 Proposed IT Infrastructure at FCCUs (Indicative)..... | II-3-95 |
| Table 3.7.4.3 Proposed IT Infrastructure at DMUs (Indicative)..... | II-3-96 |
| Table 3.7.4.4 Proposed IT Infrastructure at FTUs (Indicative)..... | II-3-97 |
| Table 3.7.4.5 Suggested Areas of Training and Sample Topics..... | II-3-102 |
| Table 3.7.4.6 Evaluation Framework for the Project..... | II-3-108 |
| Table 3.7.4.7 Key Reporting Requirement at Various Levels..... | II-3-110 |
| Table 3.7.4.8 Indicative PMC Team Compositions..... | II-3-119 |
| Table 4.1.1 Comparison of Institutional Arrangement Options and Recommendation..... | II-4-3 |
| Table 4.3.1 Proposed Composition of HPC for the Project..... | II-4-10 |
| Table 4.3.2 Proposed Composition of Governing Body..... | II-4-13 |
| Table 4.3.3 Proposed Composition of Executive Committee of PMU..... | II-4-14 |
| Table 4.4.1 Proposed PMU Staffing..... | II-4-16 |
| Table 4.4.2 Responsibilities of Key Staff in PMU..... | II-4-17 |
| Table 4.4.3 Proposed FCCU Staffing (Deputation/ Direct Hire/ Outsourcing)..... | II-4-20 |
| Table 4.4.4 Responsibilities of Key Staff in FCCU..... | II-4-20 |
| Table 4.4.5 Proposed DMU Staffing (Deputation/ Direct Hire/ Outsourcing)..... | II-4-22 |
| Table 4.4.6 Responsibilities of Key Staff in DMU..... | II-4-22 |
| Table 4.4.7 FTU Staffing (Proposed – Deputation/ Direct Hire/ Outsourcing)..... | II-4-24 |
| Table 4.4.8 Responsibilities of Key Staff in FTU..... | II-4-25 |
| Table 4.6.1 Fund Flow and Control System for the Proposed Project..... | II-4-30 |
| Table 5.1.1 Summary of Proposed Project Implementation Schedule..... | II-5-2 |
| Table 6.1.1 Overall Procurement and Implementation Methods..... | II-6-1 |
| Table 7.1.1 Operation and Maintenance Framework..... | II-7-1 |
| Table 8.1.1 Operation Indicators..... | II-8-1 |
| Table 8.1.2 Effect Indicators..... | II-8-4 |
| Table 9.2.1 Institutional Structure for ESAF Implementation and Monitoring..... | II-9-2 |
| Table 9.2.2 Draft ESMS Checklist..... | II-9-6 |
| Table 9.3.1 Key Social Groups for ESAF..... | II-9-11 |
| Table 9.3.2 Rationales to Determine the Target Social Groups under VSTPF..... | II-9-14 |

List of Figures

Part II: Project

| | |
|--|----------|
| Figure 1.2.1 Indicative Prioritised Project Area | II-1-6 |
| Figure 2.2.1 Ecosystem (Vegetation) Type Distribution in HP State (Indicative)..... | II-2-6 |
| Figure 2.3.1 Venn Diagramme in Surahan Range, Mandi Division | II-2-13 |
| Figure 2.5.1 Existing Value Chain of NTFP in HP State..... | II-2-31 |
| Figure 2.7.1 Cooking Stove and Hamam | II-2-56 |
| Figure 3.1.1 Framework of Project Components and Flow of the Phases | II-3-2 |
| Figure 3.7.1.1 Aggregation of FEMP and CD&LIP | II-3-18 |
| Figure 3.7.1.2 Planning Process at Ward Level..... | II-3-19 |
| Figure 3.7.1.3 Levels of Coordination for Convergence | II-3-20 |
| Figure 3.7.3.1 Hydroponic Fodder Production Unit in ICAR Complex for Goa, Old Goa | II-3-65 |
| Figure 3.7.3.2 Activities of Jadi-Buti Cell in PMU | II-3-70 |
| Figure 3.7.3.3 Structure of Cluster Level Him Jadi-Buti Society/ Producer Group..... | II-3-72 |
| Figure 3.7.3.4 Marketing Strategy..... | II-3-80 |
| Figure 3.7.3.5 Procurement Arrangement of the NTFPs..... | II-3-81 |
| Figure 3.7.4.1 Capacity Development Process..... | II-3-100 |
| Figure 3.7.4.2 Inter-relationship between Monitoring & Evaluation | II-3-105 |
| Figure 3.7.4.3 Conceptual Monitoring & Evaluation Framework for the Project..... | II-3-107 |
| Figure 3.7.4.4 Information Flow and Reporting Arrangement for the Project..... | II-3-111 |
| Figure 3.7.4.5 Image of Location Specific Field Data Collection..... | II-3-114 |
| Figure 3.7.4.6 Indicative Satellite Images Procurement Schedule | II-3-115 |
| Figure 4.2.1 Proposed Institutional Set-up of the Project | II-4-8 |
| Figure 4.4.1 Proposed Structure of PMU | II-4-16 |
| Figure 4.4.2 Proposed Structure of FCCU | II-4-19 |
| Figure 4.4.3 Proposed Structure of DMU | II-4-21 |
| Figure 4.4.4 Proposed Structure of FTU | II-4-24 |
| Figure 4.5.1 Proposed Institutional Arrangements at Community Level | II-4-27 |
| Figure 4.5.2 Image of Biodiversity Management Committee as Community Implementation Organisation | II-4-28 |
| Figure 4.6.1 Budget Request, Fund Flow and submission of SOE/ Utilisation Certificates | II-4-31 |

List of Attachments

Part II: Project

- Attachment II.2.3.1 Range-wise Permanent Forest Nursery Status in Proposed Project Divisions
- Attachment II.2.3.2 Status of Timber Distribution (Findings from the Livelihood Survey)
- Attachment II.2.4.1 Current Status of Protected Areas of Project Districts Proposed by HPFD
- Attachment II.2.4.2 The New List of the Threatened Plant and Animal Species of HP
- Attachment II.2.4.3 Status of Human Wildlife Conflict (Findings from the Livelihood Survey)
- Attachment II 2.7.1 (1) Livelihood Survey
- Attachment II 2.7.1 (2) Data Tables
- Attachment II.2.7.2 Seasonal Calendars
- Attachment II.2.7.3 Gender Roles in NTFP Harvesting and Processing – Panaul Village (Hlet Tikkal, Bilaspur Forest Division)
- Attachment II.2.8.1 Summary Table for SHGs
- Attachment II.2.8.2 Case Studies of SHGs and Lessons Learnt
- Attachment II.3.6.1 Indicative Project Work Quantity
- Attachment II.3.7.1.1 Indicative Terms of Reference of GP Mobiliser (BMC only) and Ward Facilitators (VFDS/ BMC)
- Attachment II.3.7.1.2 Potential Soil Water Conservation (SWC) Works
- Attachment II.3.7.1.3 Potential Species for Planation/ ANR Operations and Potential Medicinal Plant Species in HP
- Attachment II.3.7.1.4 Indicative Work Descriptions of ANR Operations
- Attachment II.3.7.1.5 Indicative Work Descriptions of Planation Operation
- Attachment II.3.7.1.6 Indicative Work Descriptions of Models for Improvement of Pastures and Grasslands
- Attachment II.3.7.1.7 Installation and Maintenance of Forest Boundary Pillars
- Attachment II.3.7.1.8 Indicative Seedling Production Information for Potential Species for the Project
- Attachment II.3.7.1.9 Indicative Tending Operations
- Attachment II.3.7.1.10 TOR for Monitoring Data Accumulation for Nursing /Planting of Tall Plants
- Attachment II.3.7.1.11 TOR for Monitoring Data Accumulation for Effective Pasture Management
- Attachment II.3.7.1.12 TOR for Study of Effective SWC and Land Slide Control Measures
- Attachment II.3.7.2.1 Indicative TOR for Pilot Projects on Biodiversity Corridor
- Attachment II.3.7.2.2 Indicative TOR for Basic Study for Designing Biodiversity Assessment
- Attachment II.3.7.2.3 Indicative Activities for Eco Tourism
- Attachment II.3.7.3.1 Indicative TOR for Pilot Projects on Hydroponic Fodder
- Attachment II.3.7.3.2 TOR for Assessment of potentiality and production of NTFPs and development of plan for conservation, resource development and sustainable management of NTFPs
Indicative TOR for Pilot Projects on Hydroponic Fodder
- Attachment II.3.7.3.3 TOR for Development of Agro-Techniques of Selected NTFPs and Medicinal Plants
- Attachment II.3.7.3.4 TOR for Impact Assessment of 4-year extraction cycle of NTFPs
- Attachment II.3.7.3.5 TOR for Follow-up Assessment of Availability of NTFPs in the Target Clusters
- Attachment II.3.7.3.6 TOR for Market Survey
- Attachment II.3.7.3.7 TOR for Development of Publicity and Communication Materials
- Attachment II.3.7.3.8 Assessment of Non-NTFP Based Livelihood Options

- Attachment II.3.7.4.1 Indicative TORs for Pasture Management Specialist, NTFP/Value Chain /Marketing Specialist and Sustainable Tourism Specialist
- Attachment II.3.7.4.2(a) Indicative TOR for Gender Specialist
- Attachment II.3.7.4.2(b) Preliminary Gender Action Plan for HPFEM&LIP
- Attachment II.3.7.4.3 Basic TORs for Environmental and Social Consideration Expert and Environmental and Social Consideration Field Expert
- Attachment II.3.7.4.4 Terms of Reference for Training Needs Assessment (TNA)
- Attachment II.3.7.4.5 Indicative Capacity Development Programme for Environmental and Social Safeguards
- Attachment II.3.7.4.6 Indicative M&E System for the Project
- Attachment II.3.7.4.7 TOR for Basic Study for Strengthening of ICT at HPFD
- Attachment II.3.7.4.8 Terms of Reference for Project Management Consultant for Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project
- Attachment II.4.1.1 Priority Options Considered for Indicative Institutional Arrangements
- Attachment II.4.1.2 Gram Panchayat: Statutory Vehicle of Governance and Development
- Attachment II.4.1.3 Institutional Arrangement Option 4B: Engaging Gram Panchayats
- Attachment II.4.2.1 Roles and Responsibilities within Institutional Arrangements
- Attachment II.4.4.1 Indicative TORs for Programme Managers and Technicians at PMU
- Attachment II.4.4.2 Indicative TOR for FCCU Subject Matter Specialist (M&E - GIS/MIS)
- Attachment II.4.4.3 Indicative TORs for DMU Subject Matter Specialists
- Attachment II.4.4.4 Indicative TOR for FTU Coordinator (Livelihood Support and Inter-sectoral Convergence)
- Attachment II.4.5.1 Proposed Institutional Arrangement of VFDS
- Attachment II.5.1.1 Proposed Detailed Project Implementation Schedule
- Attachment II.6.1.1 Draft Detail Procurement and Implementation Methods
- Attachment II.9.3.1 Draft Environmental and Social Assessment Framework (ESAF)
- Attachment II.9.3.2 Draft Vulnerable Scheduled Tribes Planning Framework (VSTPF)
- Attachment II.9.3.3 Draft Involuntary Resettlement Planning Framework (IRPF)
- Attachment II.10.1.1 Risk Management Framework

Table of Contents (Volume 1)

Part I: Study

CHAPTER 1 INTRODUCTION

CHAPTER 2 FOREST SECTOR IN INDIA

CHAPTER 3 THE STUDY AREA (THE STATE OF HIMACHAL PRADESH)

CHAPTER 4 FORESTS AND FOREST AREAS IN HIMACHAL PRADESH

CHAPTER 5 REVIEW OF PAST AND ON-GOING FORESTRY RELATED PROJECTS/ SCHEMES
SIMILAR TO THE PROJECT

CHAPTER 6 ISSUES AND LESSONS LEARNED FROM FOREST MANAGEMENT IN THE STATE

CHAPTER 7 REVIEW OF DRAFT PROJECT REPORT (DPR)

CHAPTER 8 ENVIRONMENT AND SOCIAL CONSIDERATIONS

List of Abbreviations

| Abbreviation | Full Name |
|---------------------|---|
| ABS | Access Benefit Sharing |
| ACF | Assistant Conservator of Forests |
| ACU | Adult Cattle Unit |
| AD | Administrative Department |
| AEPS | Aadhaar Enabled Payment System |
| AGM | Annual General Meetings |
| ANR | Assisted Natural Re-generation |
| APCCF | Additional Principal Chief Conservator of Forests |
| APL | Above Poverty Line |
| APO | Annual Plan of Operation |
| APY | Atal Pension Yojana |
| ARCBR | Advanced Research Centre for Bamboo and Rattan |
| AZE | Alliance for Zero Extinction |
| BADP | Boarder Area Development Programme |
| BCA | Business Correspondent Agents |
| BDO | Block Development Officer |
| BDS | Business Development Services |
| BHS | Biodiversity Heritage Sites |
| BIRD | Bankers Institute of Rural Development |
| BIS | Biodiversity Information System |
| BMC | Biodiversity Management Committee |
| BPL | Below Poverty Line |
| BR | Biodiversity Richness |
| BSBDA | Basic Saving Bank Deposit Account |
| CA | Compensatory Afforestation |
| CAMPA | Compensatory Afforestation Fund Management and Planning Authority |
| CAT | Catchment Area Treatment |
| CBA | Capacity Building Agency |
| CBC | Conservation Breeding Centre |
| CBD | Convention on Biological Diversity |
| CBET | Community Based Ecotourism |
| CBM | Community Based Biodiversity Management |
| CBMP | Community Based Biodiversity Management Plan |
| CBO | Community Based Organisation |
| CBSA | Capacity Building Support Agencies |
| CCF | Chief Conservator of Forests |
| CCU | Circle Coordination Unit |
| CD&LIP | Community Development and Livelihood Improvement Plan |
| CDBR | Cold Desert Biosphere Reserve |
| CDD | Community-driven Development |
| CDPO | Child Development Project Officers |
| CDSP | Capacity Development Strategy and Plan |
| CEPF | Critical Ecosystem Partnership Fund |
| CETPs | Common Effluent Treatment Plants |
| CF | Conservator of Forest |
| CFM | Community Forest Management |
| CFR | Community Forest Rights |
| CIF | Community Investment Fund |
| CIGs | Common Interest Groups |
| CLF | Cluster Level Federation |
| CLSs | Circle Level Societies |
| CMSWMF | Common Municipal Solid Waste Management Facility |
| CP | Construction Phase |
| CPCB | Central Pollution Control Board |

| Abbreviation | Full Name |
|---------------------|--|
| CPD | Chief Project Director |
| CR | Capital Receipts |
| CRPs | Community Resource Persons |
| CSCs | Common Service Centres |
| CSD | Commission on Sustainable Development |
| CSR | Corporate Social Responsibility |
| CSSs | Centrally Sponsored Schemes |
| DC | District Collector |
| DCF | Deputy Conservator of Forest |
| DEA | Department of Economic Affairs |
| DEST | Department of Environment, Science and Technologies |
| DfID | Department for International Development, UK |
| DFO | Divisional Forest Officer |
| DIT | Department of Information Technology |
| DLAP | Digital Financial Literacy Awareness Program |
| DLCs | District Level Committees |
| DLT | Drainage Line Treatment |
| DM | Draftsman |
| DMU | Divisional Management Unit |
| DPC | Departmental Promotion Committee |
| DPF | Demarcated Protected Forest |
| DPO | District Program Officer |
| DPR | Detailed Project Report |
| DRD | Department of Rural Development |
| DRDA | District Rural Development Agency |
| DSS | Decision Support System |
| EA | Executing Agency (in some cases may also refer about “Environmental Assessment”) |
| EAC | Expert Appraisal Committees |
| EAP | Externally Aided Project |
| EBA | Ecosystem Based Approach |
| EBM | Ecosystem-Based Management |
| EC | Executing Committee (in some cases may also refer about “Environmental Clearance”) |
| EDC | Eco-development Committee |
| EEMIS | Employment Exchanges Management Information System |
| EG | Expert Group |
| EIA | Environmental Impact Assessment |
| EMoP | Environmental Monitoring Plan |
| EMP | Environmental Management Plan |
| EPZs | Export Processing Zones |
| ES | Ecosystem Services |
| ESAF | Environmental and Social Assessment Framework |
| ESC | Environmental and Social Considerations |
| ESCAP | Economic and Social Council for Asia and Pacific |
| ESCE | Environmental and Social Consideration Expert |
| ESCFS | Environmental and Social Consideration Field Specialist |
| ESMS | Environmental and Social Management System |
| ESMSF | Environmental and Social Management System Framework |
| FAMS | Fire Alert Messaging System |
| FAO | Food and Agriculture Organisation |
| FC | Finance Commission |
| FCA | Forest Conservation Act |
| FCM | Forest Cover Map |
| FD | Forest Department |
| FDA | Forest Development Agency |

| Abbreviation | Full Name |
|---------------------|--|
| FDST | Forest Dwelling Scheduled Tribes |
| FI | Financial intermediary |
| FIF | Financial Inclusion Fund |
| FLAP | Financial Literacy Awareness Programme |
| FLC | Financial Literacy Centers |
| FLS | Front Line Staff |
| FMIS | Forest Management Information System |
| FPC | Forest Protection Committee |
| FPIC | Free Prior Informed Consent |
| FRA | Forest Rights Act |
| FRC | Forest Rights Committee |
| FREEP | Forest Research and Education Project |
| FSI | Forest Survey of India |
| FTM | Forest Type Map |
| FWC | Forest Working Committee |
| FY | Financial Year |
| GB | Governing Board/Body |
| GEF | Global Environment Facility |
| GHG | Green House Gas |
| GHNP | Great Himalayan National Park |
| GIM | Green India Mission |
| GIS | Geographic Information System |
| GISD | Global Invasive Species Database |
| GIZ | Germany's Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation) |
| GMP | Good Manufacturing Practice |
| GoI | Government of India |
| GP | Gram Panchayat |
| GPS | Global Positioning System |
| GRM | Grievance Redress Mechanism |
| GSDP | Gross State Domestic Product |
| HBCFDC | Himachal Backward Classes Finance & Development Corporation |
| HDM | Head Draftsman |
| HFRI | Himalayan Forest Research Institute |
| HH | Households |
| HIMFED | HP State Co-operative Marketing and Consumer Federation |
| HIMSWAN | Himachal State Wide Area Network |
| HIPA | Himachal Pradesh Institute of Public Administration |
| HMNEH | Horticulture Mission for North East and Himalayan States |
| HOFF | Head of Forest Force |
| HP | Himachal Pradesh |
| HPC | High Power Committee |
| HPECOSOC | Himachal Pradesh Ecotourism Society |
| HPFD | Himachal Pradesh Forest Department |
| HPFELPS | Himachal Pradesh Forest Ecosystems and Livelihood Project Society |
| HPFP | HP Forestry Project |
| HPMHWDP | HP Mid-Himalayan Watershed Development Project |
| HPNRMS | Himachal Pradesh Natural Resource Management Society |
| HP-PFM | Himachal Pradesh Participatory Forest Management |
| HPPSC | Himachal Pradesh Public Service Commission |
| HPSFDCL | Himachal Pradesh State Forest Development Corporation Limited |
| HRTC | Himachal Road Transport Corporation |
| IA | Implementing Agency |
| IAY | Indira Awas Yojana |
| IBAs | Important Bird and Biodiversity Areas |
| ICDS | Integrated Child Development Service Scheme |

| Abbreviation | Full Name |
|---------------------|--|
| ICFRE | The Indian Council of Forestry Research and Education |
| ICIMOD | International Centre for Integrated Mountain Development |
| ICT | Information Communication Technology |
| IEC | Information, Education and Communication |
| IFA | India Forest Act |
| IFMS | Integrated Forest Management System |
| IGA | Income Generation Activity |
| IGCP | Indo-German Eco-Development Project |
| IGFRI | Indian Grass and Fodder Research Institute |
| IHBT | Institute of Himalayan Bioresource Technology |
| IIRS | Indian Institute of Remote Sensing |
| INDC | Intended Nationally Determined Contribution |
| INR | Indian National Rupees |
| IP | Indigenous People |
| IPC | Indian Penal Code |
| IRPF | Involuntary Resettlement Planning Framework |
| ISFR | India State of Forest Report |
| IT | Information Technology |
| ITDP | Integrated Tribal Development Programme |
| IUCN | International Union for Conservation of Nature and Natural Resources |
| IWDP | Integrated Watershed Development Project |
| IWMP | Integrated Watershed Management Programme |
| J&K | Jammu and Kashmir |
| JDM | Junior Draftsman |
| JFM | Joint Forest Management |
| JFMC | Joint Forest Management Committee |
| JICA | Japan International Cooperation Agency |
| KBA | Key Biodiversity Areas |
| KCC | Kisan Credit Card Scheme |
| KLD | Kilo Litres per Day |
| KVIC | Khadi Village Industries Commission |
| LCB | Local Competitive Bidding |
| LEDP | Livelihood Enterprise Development Program |
| LI | Landscape Integrity |
| LPA | Land Preservation Act |
| LPG | Liquified Petroleum Gas |
| LULC | Land Use and Land Cover |
| MAB | Man and the Biosphere |
| MAP | Medicinal and Aromatic Plant |
| M&E | Monitoring and Evaluation |
| MADA | Modified Area Development Approach |
| MBT | Main Boundary Thrust |
| MCT | Main Central Thrust |
| MDG | Millennium Development Goals |
| MEDP | Microenterprise Development Program |
| MGNREGS | Mahatma Gandhi National Rural Employment Guarantee Scheme |
| MHWIDP | Mid-Himalayan Watershed Development Project |
| MIDH | Mission for Integrated Development of Horticulture |
| MIS | Management Information System |
| MKSP | Mahila Kisan Sashaktikaran Pariyojana (A NRLM scheme to improve women's status in agriculture. |
| MLA | Members of Legislative Assembly |
| MM | Man Month |
| MMR | Maternal Mortality Rate |
| MOA | Memorandum of Association |
| MOD | Minutes of Discussion |

| Abbreviation | Full Name |
|---------------------|---|
| MOEF | Ministry of Environment and Forests |
| MoEF&CC | Ministry of Environment, Forests and Climate Change |
| MoRD | Ministry of Rural Development |
| MoSJE | Ministry of Social Justice and Empowerment |
| MoTA | Ministry of Tribal Affairs |
| MOU | Memorandum of Understanding |
| MT | Metric Tons |
| NAAQS | National Ambient Air Quality Standards |
| NABARD | National Bank For Agriculture And Rural Development |
| NABET | National Accreditation Board for Education and Training |
| NABM | National Agro-forestry & Bamboo Mission |
| NAEB | National Afforestation and Eco- Development Board |
| NAP | National Afforestation Programme |
| NAPCC | National Action Plan on Climate Change |
| NBA | National Biodiversity Authority |
| NBCFDC | National Backward Classes Finance and Development Corporation |
| NBM | National Bamboo Mission |
| NCBC | National Commission for Backward Classes |
| NCDNSNT | National Commission for Denotified and Semi-Nomadic Tribes |
| NCF | Nature Conservation Foundation |
| NCRB | National Crime Record Bureau |
| NCSC | National Commission for Scheduled Castes |
| NFI | National Forest Inventory |
| NFMS | National Forest Monitoring System |
| NFSM | National Food Security Mission |
| NGO | Non-Governmental Organisation |
| NGT | National Green Tribunal |
| NH | National Highway |
| NIC | National Informatics Centre |
| NISD | National Institute of Social Defense |
| NIELT | National Institute of Electronics & Information Technology |
| NITI | National Institution for Transforming India |
| NMAET | National Mission on Agricultural Extension and Technology |
| NMMU | National Mission Management Unit |
| NMPB | National Medicinal Plants Board |
| NMSA | National Mission on Sustainable Agriculture |
| NP | National Park |
| NPOP | National Programme for Organic Production |
| NPV | Net Present Value |
| NRLM | National Rural Livelihood Mission |
| NRM | National Resource Management |
| NRO | National Resource Organisation |
| NRRP | National Resettlement and Rehabilitation Policy |
| NRSC | National Remote Sensing Centre |
| NSFDC | National Scheduled Castes Finance and Development Corporation |
| NSKFDC | National Safai Karamcharis Finance and Development Corporation |
| NTFP | Non Timber Forest Product(s) |
| OBC | Other Backward Class |
| OBSDA | One Basic Saving Deposit Account |
| ODA | Official Development Assistance |
| OLTIS | Online Treasury Information System |
| OP | Operational Policy |
| OSMEFWC | Online Submission & Monitoring of Environmental, Forests and Wildlife Clearance |
| OTFD | Other Traditional Forest Dwellers |
| PA | Protected Area |

| Abbreviation | Full Name |
|--------------|--|
| PACS | Primary Agriculture Credit Societies |
| PAP | Protected Area Permit |
| PBR | People's Biodiversity Register |
| PCCF | Principal Chief Conservator of Forest |
| PD | Project Director |
| PDCs | Panchayat Development Committees |
| PES | Payment for Ecosystem Services |
| PESA | The Provisions of the Panchayat (Extension to Scheduled Areas) Act |
| PFM | Participatory Forest Management |
| PHC | Primary Health Center |
| PISFR | Pre-investment Survey of Forest Resources |
| PMAY-G | Pradhan Mantri Awas Yojana: Gramin |
| PMC | Project Management Consultants |
| PMGSY | Pradhan Mantri Gram Sadak Yojana |
| PMJDY | Pradhan Mantri Jan Dhan Yojana |
| PMJJBY | Pradhan Mantri Jeevan Jyoto Bima Yojana |
| PMKSY | Pradhan Mantri Krishi Sinchai Yojana |
| PMSBY | Pradhan Mantri Suraksha Bima Yojana |
| PMU | Project Management Unit |
| PPP | Private Public Partnership |
| PRA | Participatory Rural Appraisal |
| Pre-CP | Pre-Construction Phase |
| PRF | Protected Reserve Forest |
| PRI | Panchayat Raj Institute |
| PRO | Public Relations Officer |
| PS | Panchayat Samiti |
| PWD | Public Works Department |
| QA/QC | Quality Assurance and Quality Control |
| QCBS | Quality and Cost Based Selection |
| QGIS | Quantum Geographic Information System |
| R&R | Resettlement and Rehabilitation |
| RBI | Reserve Bank of India |
| RD | Recurring Deposit |
| REC | Regional Empowered Committee |
| REDD+ | Reducing Emissions from Deforestation and Forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries |
| RF | Revolving Fund |
| RFCTLARRA | Right to Fair Compensation and Transparency in Land Acquisition and Rehabilitation and Resettlement Act |
| RFO | Range Forest Officer |
| RO | Range Officer |
| RoW | Right of Way |
| RP | Resettlement Plan |
| RR | Revenue Receipts |
| Rs. | Indian National Rupees |
| RSETI | Rural Self Employment Training Institutes |
| SA | Social Assessment |
| SAARC | South Asian Association for Regional Co-operation |
| SACEP | South Asia Co-operative Environment Programme |
| SAG | State Advisory Group |
| SBB | State Biodiversity Board |
| SC | Scheduled Caste |
| SCA | Special Central Assistance |
| SDC | State Data Centre |
| SDG | Sustainable Development Goals |

| Abbreviation | Full Name |
|---------------------|--|
| SDLCs | Sub-Divisional Level Committees |
| SDM | Sub-Divisional Magistrate |
| SEAC | State Expert Appraisal Committee |
| SEIAA | State Environment Impact Assessment Authority |
| SEZs | Special Economic Zones |
| SFDA | State Forest Development Agency |
| SFM | Sustainable Forest Management |
| SGSY | Swarnjayanti Gram Swarozgar Yojana |
| SHG | Self Help Group |
| SHG-BLP | SHG Bank Linkage Programme |
| SHPI | SHG Promoting Institution |
| SIA | Social Impact Assessment |
| SIMP | Social Impact Management Plan |
| SMC | Soil and Moisture Conservation |
| SMMU | State Mission Management Unit |
| SMS | Subject Matter Specialist (in some cases may also refer about “Short Message Service”) |
| SNPP | Suomi National Polar Orbiting Partnership |
| SoEs | Statement of Expenditures |
| SOF | Scale of Finance |
| SOI | Survey of India |
| SPA | State Procurement Agency |
| SPCB | State Pollution Control Board |
| SPV | Special Purpose Vehicle |
| SSA | Sub-Service Areas |
| SSO | Social Safeguards Officer |
| ST | Scheduled Tribe |
| SVY | Sanjhi Van Yojana |
| SWF | SWAN Women Federation |
| SWMCS | SWAN Women Multipurpose Cooperative Society |
| SWOT | Strengths, Weaknesses, Opportunities, Threats |
| TCD | Ton of Cane per Day |
| TD | Timber Distribution |
| TDR | Timber Distribution Rights |
| TNA | Training Needs Assessment |
| TOR | Terms of Reference |
| ToT | Training of Trainers |
| TPD | Tons Per Day |
| TS | Threatened Species |
| TSP | Tribal Sub Plan |
| UAV | Unmanned Aerial Vehicle |
| UDPF | Un-Demarcated Protected Forest |
| ULBs | Urban Local Bodies |
| UNDP | United Nations Development Programme |
| UNDRIP | United Nations Declaration on the Rights of Indigenous Peoples |
| UNEP | United Nations Environment Program |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UPNRM | Umbrella Programme on Natural Resource Management |
| USD | United States Dollar |
| UGs | User Groups |
| UTPCC | Union Territory Pollution Control Committee |
| VAT | Value Added Tax |
| VDC | Village Development Committee |
| VEDC | Village Eco- Development Committee |
| VFDS | Village Forest Development Society |
| VO | Village Organisation |

| Abbreviation | Full Name |
|---------------------|---|
| VRF | Vulnerability Reduction Fund |
| VSTPF | Vulnerable Scheduled Tribes Planning Framework |
| WB | World Bank |
| WELPMIS | Welfare Pension Management Information System |
| WII | Wildlife Institute of India |
| WLS | Wildlife Sanctuary |
| WP | Working Plan |
| WPDF | Watershed Participatory Development Facilitator |
| WPG | Women's Production Group |
| WSHG | Women Self Help Group |

Measurement Units

| Extent: | Weight: |
|---|--|
| 1 km ² = 100 ha 1 acres = 0.40468ha | 1 Quintal / qtl. = 100 kg |
| Number: | Currency: |
| Lakh = 100,000 Crore = 10,000,000 | Rs. = INR = Indian Rupees (INR) JPY = Japanese Yen USD = \$ = United State Dollars |

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This Executive Summary gives an overview of the Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project in India. It focuses on the project proposal and is divided into two sections as follows: Section 1: Study Overview, and Section 2: Project Overview. For reference, links to the Final Report Parts are noted.

Also, Data Summary covering data collection and analysis for Himachal Pradesh (HP) and for the proposed Project is attached to this Executive Summary.

CONTENTS

STUDY OVERVIEW

Reference to Final Report

| | | |
|---|--------------------------------|--------------------------------------|
| 1 | Project Background & Necessity | Part I Chapter 1 & Part II Chapter 3 |
| 2 | Study Objectives | Part I Chapter 1 |
| 3 | Study Period | Part I Chapter 1 |
| 4 | Study Area | Part I Chapter 1 & Part II Chapter 1 |

PROJECT OVERVIEW

Reference to Final Report

| | | |
|----|--|--------------------|
| 1 | Key Project Approaches | |
| 2 | Project Components | Part II Chapter 3 |
| 3 | Project Outline | Part II Chapter 3 |
| 4 | Proposed Institutional Framework | Part II Chapter 4 |
| 5 | Proposed Implementation Schedule | Part II Chapter 5 |
| 6 | Proposed Procurement & Implementation Method | Part II Chapter 6 |
| 7 | Operation & Maintenance | Part II Chapter 7 |
| 8 | Operation & Effect Indicators | Part II Chapter 8 |
| 9 | Environmental & Social Considerations | Part II Chapter 9 |
| 10 | Project Risk & Assumptions | Part II Chapter 10 |

STUDY OVERVIEW

1 Project Background & Necessity

The HP state is located in the North India at the foot of the Himalayas. The ratio of the notified (legal) forest area is high in HP since 66.52% of its geographical area is recorded as the notified forest area such as the reserved forest and the protection forest. Furthermore, 22.57% of the notified forest area (15.01% of the state area) is designated as protected area, such as the national park and the wildlife sanctuary.

According to the Atlas Forest Type of India 2011, 39 forest types are recorded within the state. Due to its undulating topography, the state possesses various types of ecosystems, mainly of forest ecosystems, and thus the ecosystem and biodiversity conservation (including water catchment conservation and rare species protection) are important issues in HP.

Natural resources are continually being lost due to the increasing population and adverse impacts to ecosystem including degradation of forest and pasture. The major necessity of the project is to urgently conserve and protect natural resources as follows:

- ◆ **Need to Enhance Forest Quality:** Forests in the state are under constant threats because of increased biotic pressure, hydropower projects and other development activities. Excessive usage of forest resources is also seen as one of concerns for adverse impacts to forest areas and their resources. The key to the improvement of the forest qualities in HP is to i) improve the quality of scrub and open forest areas and bring them under the moderately dense forest, and ii) improve existing moderately dense forests to higher crown density and diversified structure/composition.
- ◆ **Need to Enhance Biodiversity Conservation:** the main issue of the biodiversity in HP is the increasing human interferences into the ecosystems and negative impacts from them. Incidences of human-wildlife conflict are prevalent in some parts of the state, especially outside of the protected area, mainly due to the disruption in the habitat of the wildlife caused by the developmental activities and other human interferences.

The priority goal of the state is sustainable forest/ ecosystem management and livelihood improvement of local communities. This relevance and linkages with government policies and priorities are listed in The Himachal Pradesh Forest Sector Policy and Strategy 2005.

Hence, the Government of India requested Japan International Cooperation Agency (JICA) to support the Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project (the Project) for promoting sustainable forest management and socio-economic development in the forest based ecosystem areas within HP. Based on the request, JICA decided to dispatch a Study Team to undertake the preparatory study of the Project (the Study) to examine the Project's eligibility for a Japanese Yen Loan project.

2 Study Objectives

The objectives of the Study were to undertake a study to collect and analyse information on project backgrounds, objectives, contents, costs, implementation framework, operation and maintenance setups, environmental and social considerations, etc. to fulfil the eligibility of a Japanese Yen Loan Project.

3 Study Period

The Study was carried out from the middle May 2017 to the end February 2018, which is the final submission of the final report of the Study. The summary of data collection and analysis conducted during the Study is presented in the Appendix of this executive summary.

4 Study Area

During the course of the Study, changes were made to the study area. In the end, the entire state has been considered as the study area.

Then as per the agreement made between JICA and HPFD prior to the commencement of the Study, a total of seven districts within HP namely Shimla, Bilaspur, Kullu, Kinnaur, Mandi, Lahaul & Spiti and Chamba (in case of Chamba district, only Bhramour and Pangi sub-divisions are included) were considered as districts for the proposed project area (see **Figure 1** area outlined by dark black line). In the proposed project area, there are 20 territorial forest divisions and 22 protected areas controlled by 6 wildlife divisions.

Finally, based on the project area prioritisation process and criteria developed during the Study, a prioritised project area was defined (see **Figure 1** areas in green). This area consists of a total of 14 territorial forest divisions (49 ranges) and two wildlife divisions (4 protected areas and 2 wildlife ranges). The project prioritised area compose of six districts (prioritised project districts).



Figure 1 Proposed Project Areas

PROJECT OVERVIEW

1 Key Project Approaches

Based on the lessons learned from the past and on-going schemes/ projects relevant to the proposed Project and for the enhanced sustainability of the project impacts, the following key approaches shall be adopted in the proposed Project.

- i. Strengthening the Existing Platform for Participatory Forest Management – Village Forest Development Society (VFDS)
- ii. Micro Plan as a Community Development Plan
- iii. Creating Models for Community-Based Biodiversity Conservation
- iv. Gender Mainstreaming
- v. Livelihood Interventions to Mitigate Seasonal Vulnerability
- vi. Interventions to Mitigate Pressures on Forest Resource - Fuelwood and Fodder

2 Project Components

The Project has four components that are linked with the project outputs. Each component has three phases: the preparatory phase, implementation and phase-out phases.

Component 1: Sustainable Forest Ecosystem Management

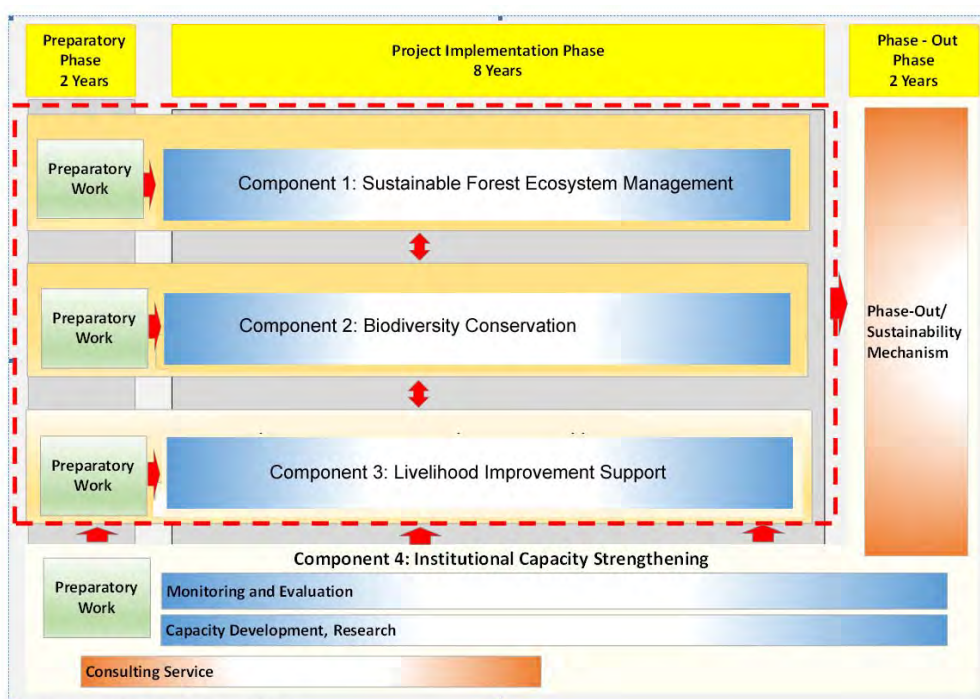
Component 2: Biodiversity Conservation

Component 3: Livelihoods Improvement Support

Component 4: Institutional Capacity Strengthening

Note: Component 4 is designed to establish project monitoring & evaluation, institutional capacity enhancement and technical and managerial advisory services extended by project management consultants (PMC).

The framework of project components with flow of the project phases is illustrated in **Figure 2**.



Source: JICA Study Team (2017)

Figure 2 Framework of Project Components and Flow of Project Phases

The component-wise proposed interventions are enumerated below.

Table 1 Restructured Components/ Sub Components

| Tentative Components | |
|---|--|
| Sub- Component | Possible Key Activities for Further Consideration |
| Component 1: Sustainable Forest Ecosystem Management | |
| 1.1 Preparatory Works for Participatory Forest Management | 1.1.1 Identification and Selection of Interventions Areas 1.1.2 Identification of PFM mode or Departmental mode 1.1.3 Surveying and Mapping of Intervention Areas 1.1.4 Pre-Identification and Selection of Target Communities 1.1.5 Engagement of Ward Level Facilitators 1.1.6 Community Mobilisation 1.1.7 Preparation of Micro Plan (Forest Ecosystem Management Plan (FEMP) and Community Development & Livelihood Improvement Plan (CD&LIP)) 1.1.8 Annual Planning/ Revisiting of Micro Plan (4th Year) |
| 1.2 Participatory Forest Management (PFM) Mode | 1.2.1 Site Specific Planning and Monitoring 1.2.2 Drainage Line Treatment (ex-situ Soil & Water Conservation (SWC) work) 1.2.3 Improvement/ Densification of Moderately Dense Forest 1.2.4 Afforestation/ Improvement of Open/ Scrub Forest Fuelwood & Fodder Plantation 1.2.5 Improvement of Forest Quality at Key Concerned Forest Areas 1.2.6 Improvement of Pastures/ Grasslands (including in-situ SWC work) 1.2.7 Forest Fire Protection 1.2.8 Forestry Intervention at Outside of Forest Areas |
| 1.3 Training of VFDSs | 1.3.1 Training of VFDSs 1.3.2 Exposure Visits by the Community Institutions 1.3.3 Joint Workshops for Community Level Institutions |
| 1.4 Departmental Mode | 1.4.1 Site Specific Planning and Monitoring 1.4.2 Improvement of Forest Boundary Management at Project Intervention Areas 1.4.3 Improvement of Nurseries 1.4.4 Seedling Production 1.4.5 Non-PFM Drainage Line Treatment (ex-situ SWC work: including treatable surface Erosion Control) 1.4.6 Secondary Silvicultural Operations for Improvement of Existing Forests 1.4.7 Improvement/ Densification of Moderately Dense Forest 1.4.8 Afforestation/ Improvement of Open/ Scrub Forest 1.4.9 Improvement of Forest Quality at Key Concerned Forest Areas 1.4.10 Improvement of Pastures/ Grasslands (including in-situ SWC work) 1.4.11 Forest Fire Management |
| 1.5 Training of Project related staff of HPFD | 1.5.1 Training of Trainers (TTOT) for Divisional Management Unit (DMU)/ Forest Circle Coordination Unit (FCCU) Subject Matter Specialist/ Field Technical Unit (FTU) Coordinators for Field Facilitation 1.5.2 Training for Ward Facilitators |
| 1.6 Research | 1.6.1 Monitoring Data Accumulation for Nursing and Planting of Tall Plants 1.6.2 Monitoring Data Accumulation for Effective Pasture Management 1.6.3 Study for Effective SWC and Land Slide Control Measures |
| Component 2: Biodiversity Conservation | |
| 2.1 Scientific Biodiversity Management | 2.1.1 Preparatory Works 2.1.2 Protected area management improvement in core zone or buffer zone 2.1.3 Human-wildlife conflict mitigation/management 2.1.4 Wildlife habitat improvement 2.1.5 Recovery programmes for endangered wildlife |
| 2.2 Training of Project related Staff of HPFD | 2.2.1 TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation 2.2.2 Training for GP Mobilisers and Facilitators |
| 2.3 Research | 2.3.1 Pilot Project on Biodiversity Corridor (Baseline survey for biodiversity corridor) 2.3.2 Basic study for designing Biodiversity Census |
| 2.4 Community Based Biodiversity Management | 2.4.1 Preparatory Works 2.4.2 Community Based Biodiversity Management (CBM) |
| 2.5 Training of DMUs/FTUs/ Biodiversity Management Committees (BMCs) and Sub-committees | 2.5.1 Training of DMUs/FTUs 2.5.2 Training of BMCs and Sub-committees 2.5.3 Exposure Visits by Community Institutions 2.5.4 Joint Workshops for Community Level Institutions (VFDSs/BMCs and Sub-committees) |
| Component 3 Livelihoods Improvement Support | |
| 3.1 Community Development | 3.1.1 Preparation of CD&LIP 3.1.2 Transfer of Funds 3.1.3 Implementation of CD activities 3.1.4 Preparation of Guidelines Manuals and Training Programmes for Community |

| Tentative Components | |
|---|---|
| Sub- Component | Possible Key Activities for Further Consideration |
| | Development 3.1.5 Research: Pilot Project on Hydro Cultural Fodder Production |
| 3.2 Non-timber Forest Product (NTFP) based Livelihood Improvement | 3.2.1 Preparatory Works 3.2.2 NTFP Cluster and Enterprise Development 3.2.3 NTFP Research & Development 3.2.4 NTFP Cultivation 3.2.5 NTFP Market Research and Promotion 3.2.6 Training and Extension |
| 3.3 Non NTFP based Livelihood Improvement | 3.3.1 Preparation of Livelihood Improvement Strategy and Plan 3.3.2 Preparation of CD&LIP 3.3.3 Formation/ Reviving Common Interest Groups (CIGs)/ Self Help Groups (SHGs) 3.3.4 Implementation of Household/ Community level livelihood improvement 3.3.5 Promotion of Cluster based Livelihood Activities 3.3.6 Training Programmes for Livelihood Improvement 3.3.7 Capacity Development for CIGs/ SHGs and Cluster Based Organisation |
| Component 4 Institutional Capacity Strengthening | |
| 4.1 Preparatory Works | 4.1.1 Establishment of Project Management Unit (PMU) and Field Level Units 4.1.2 Strengthening of PMU and Field Level Units 4.1.3 Recruitment of the Personnel/ Subject Matter Specialists/ Resource Organisations 4.1.4 Preparation of Gender Action Plan 4.1.5 Environmental and Social Consideration |
| 4.2 Capacity Development | 4.2.1 Implementing Agency 4.2.2 Gender Training 4.2.3 Environmental and Social Consideration |
| 4.3 M&E | 4.3.1 Establishing and operationalising M&E System 4.3.2 Enhancement and Promotion of Geographical Information System (GIS)/ Management Information System (MIS)/ Information Communication Technology (ICT) 4.3.3 Communication and Publicity |
| 4.4 Research | 4.4.1 Basic Study for Strengthening of ICT at HPFD |
| 4.5 PMC | 4.5.1 Procurement of PMC 4.5.2 Deployment of PMC specialists 4.5.3 Provision of Technical and Managerial Advisory Services 4.5.4 Preparation of Reports |
| 4.6 Phase Out | 4.6.1 Implementing Agency 4.6.1.1 Preparation of Phase-Out/ Sustainability Mechanism Plan 4.6.1.2 Transfer of Assets and Resources 4.6.2 Community Based Organisations 4.6.2.1 Revisiting of FEMP and CD&LIP 4.6.2.2 Phase Out Training 4.6.3 FEMP/Community Based Biodiversity Management Plan (CBMP) Fund |

Source: Prepared by JICA Study Team (2017)

3 Project Outline

Table 2 Outline of the Proposed Project

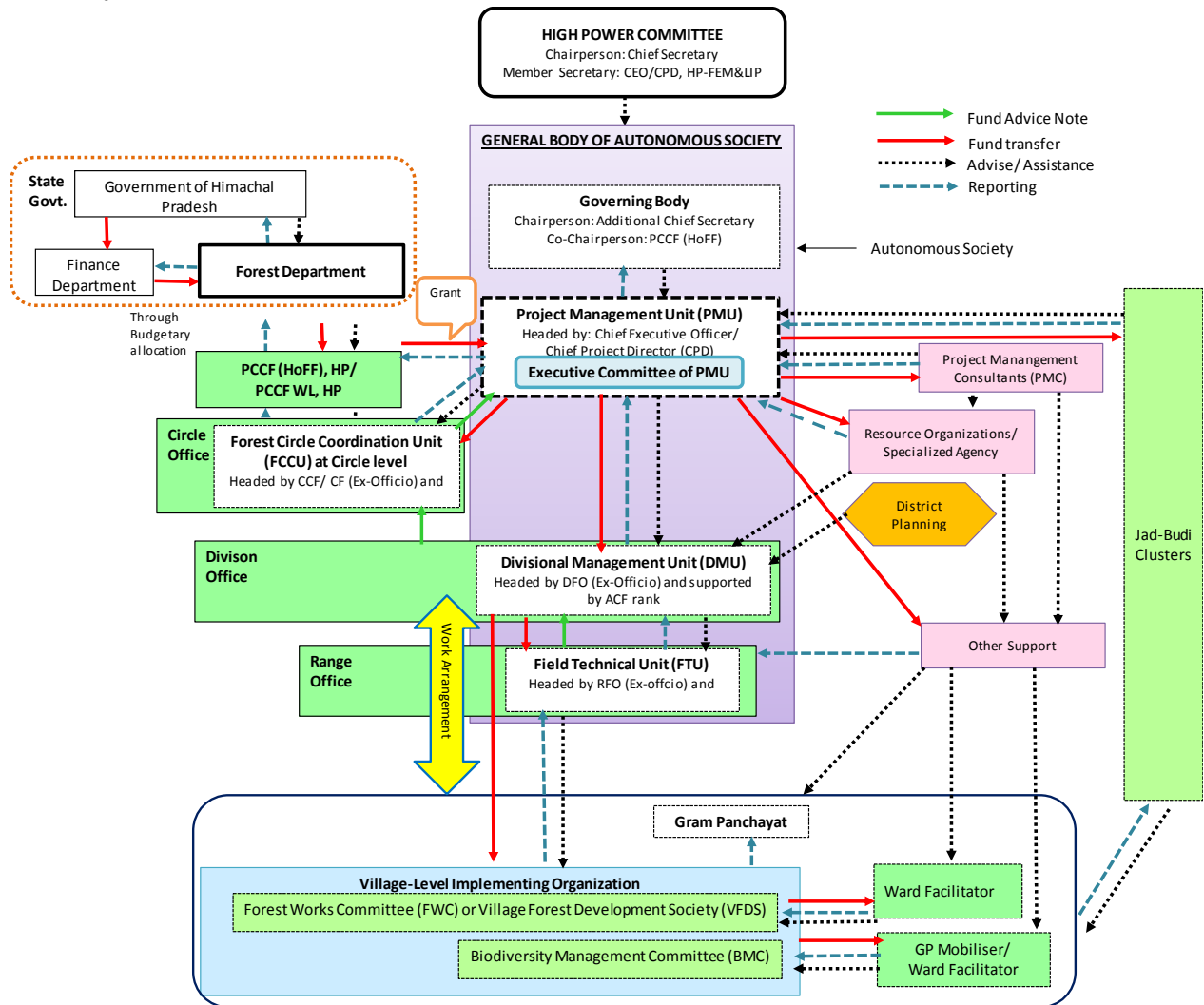
| |
|---|
| Overall Goal: Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh. |
| Project Objective: Ecosystems of forests in the project areas are sustainably managed and enhanced by the project interventions. |
| Duration of the Project: - 10 years - The following three phases are planned: Preparatory Phase, Implementation Phase, Phase-out Phase |
| Major Work Areas: Total Number of Territorial Divisions: 14 divisions Total Number of Territorial Ranges: 49 ranges Total Number of Protected Areas and Wildlife Ranges: 4 protected areas and 2 wildlife ranges No of VFDS to be covered: 400 No of BMC to be covered: 20 (60 sub-committees) Divisions, ranges, and protected areas have been prioritised through exclusion criteria and prioritisation criteria. If required, further prioritisation will be conducted. |
| Project Components: Component 1: Sustainable Forest Ecosystem Management Component 2: Biodiversity Conservation Component 3: Livelihoods Improvement Support Component 4: Institutional Capacity Strengthening |

4 Proposed Institutional Framework

Overall Institutional Arrangements for the Project

The institutional framework examined for the Project is shown below.

Figure 3 shows the detailed institutional arrangement envisaged for the implementation of the Project.



Source: JICA Study Team (2017)

Figure 3 Proposed Institutional Set-up of the Project

The Project Management Unit (PMU) of the Project will be established as autonomous registered society within HPFD, and be made responsible to manage, coordinate, implement and monitor the proposed activities. All offices created for this Project will exclusively work to assist and facilitate implementation of the proposed activities following the project implementation schedule, annual plan of operations and envisaged processes.

The High Power Committee (HPC) created for the Project will act as the highest decision-making body for the Project at the state government level, and will not form a part of the autonomous society to be created for project implementation. The Governing Body (GB) and the General Body of the Project will be the decision-making bodies for the Project within Society as per the

provisions in the HP Societies Registration Act, 2006.

To support project implementation at the field level, PMU will create and coordinate with two key offices viz., Divisional Management Units (DMUs) and Field Technical Units (FTUs) those will work as extended arms for the PMU. In addition, Forest Circle Management Units (FCCUs) to be created outside the society will provide overall guidance and supervise the project works at divisional and field levels. PMU including DMUs and FTUs will implement the project as well as assist and play facilitative roles. The main responsibility for project implementation will remain with the regular structure of HPFD, and in no way the project offices created within autonomous society will duplicate or substitute roles and responsibilities of HPFD. The existing divisional and range offices will operate within their respective jurisdictions for the project implementation, and will be supported and assisted by DMUs and FTUs respectively. The implementing arrangements will be through the forest divisions (DFOs) and through the Village Forest Development Society (VFDS) or Biodiversity Management Committee (BMC).

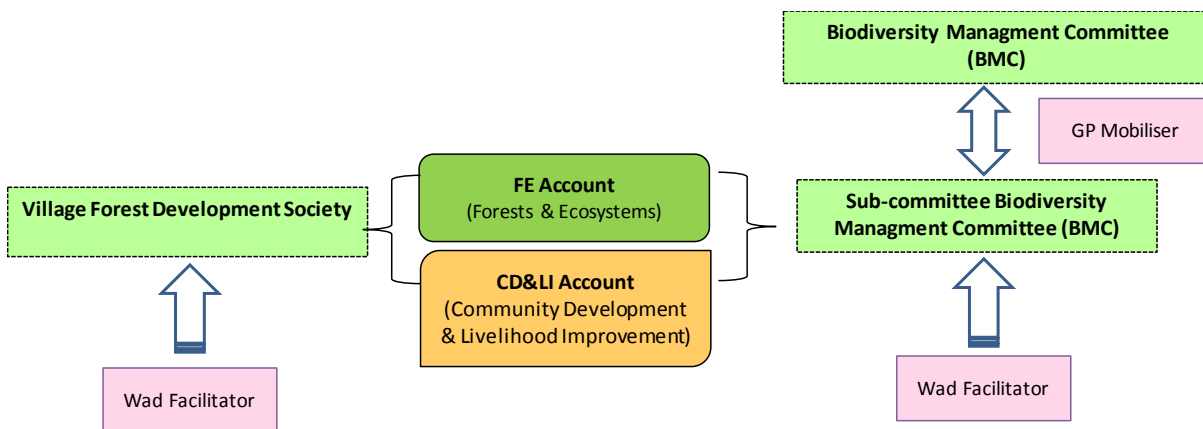
As required, resources organizations/ support agency will be engaged by PMU to support divisional and range project offices. Community level organisations (VFDS/ BMC) will also be supported by mobilisers and facilitators, to be identified from within the respective project Gram Panchayats/ wards by the community level organisations.

Proposed Community Implementation Organisation

The key institution to be engaged in the Project will be VDFSs. The constitution of VFDS including its roles and responsibilities are well spelt out in the Participatory Forest Management (PFM) Regulations 2001.

At the same time, wherever required, and if possible under the Biological Diversity Act, 2002 provisions, the Project will take advantage of Biodiversity Management Committee (BMC), engaging for works especially in and around protected areas. For the Project, VFDS and sub-committees of BMC are regarded as ward level implementation organisation.

The proposed institutional arrangements at the community level is illustrated in the figure below.



Source: JICA Study Team (2017)

Figure 4 Proposed Institutional Arrangements at Community Level

5 Proposed Implementation Schedule

The summary of draft project implementation schedule is as follows (Table 3).

Table 3 Summary of Proposed Project Implementation Schedule

| Item | Year 0 2017/18 | | | | Year 1 2018/19 | | | | Year 2 2019/20 | | | | Year 3 2020/21 | | | | Year 4 2021/22 | | | | Year 5 2022/23 | | | | Year 6 2023/24 | | | | Year 7 2024/25 | | | | Year 8 2025/26 | | | | Year 9 2026/27 | | | | Year 10 2027/28 | | | | Yr 11 | Yr 12 | | |
|---|--------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|--------------------|--|--|--|-------|-------|--|--|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | | | | | | | |
| L/A Period | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Period | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Implementation Period | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Appraisal | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pledge | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signing of L/A | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pre-Qualification of Consultation Services | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Consultation Services | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Component 1: Sustainable Forest Ecosystem Management | [Component Header] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 Preparatory Works for Participatory Forest Management | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 Participatory Forest Management (PFM) Mode | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 Training of VFDSs | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.4 Departmental Mode | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.5 Training of Project related staff of HPPD | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.6 Research | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Component 2: Biodiversity Conservation | [Component Header] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 Scientific Biodiversity Management | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.2 Training of Project related Staff of HPPD | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.3 Research | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 Community Based Biodiversity Management | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Component 3: Livelihood Improvement Support | [Component Header] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1 Community Development | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2 NTFP based Livelihood Improvement | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3 Non NTFP based Livelihood Improvement | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Component 4: Institutional Capacity Strengthening | [Component Header] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 Preparatory Works | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.2 Capacity Development | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.3 M&E | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.4 Research | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.5 PMC | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.6 Phase Out | [Timeline bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Source: JICA Study Team (2017)

6 Proposed Procurement and Implementation Method

In terms of the implementer, the majority of project activities will be divided into the following three categories:

- i) Departmental works conducted directly by PMU, DMUs, and FTUs
- ii) Works conducted by community based organisations (CBOs) such as VFDSs, BMC sub-committees, common interest groups (CIGs) and self help groups (SHGs)
- iii) Works conducted by resource organisations, support organisations, and other contracted organisations/individuals

Procurement and implementation methods for the above three categories in the Project is summarised in Table 4.

Table 4 Overall Procurement and Implementation Methods

| Implementer (Type of work) | Procurement/ Implementation Method |
|---|---|
| i) Departmental Works | Mainly by direct work (partially on a contractual basis and by price quotation) |
| ii) Works by CBOs | Contractual basis through MOU (direct work by CBOs) |
| iii) Works by Resource Organisations and Others | Contractual basis |

Source: JICA Study Team (2017)

7 Operation and Maintenance

During the Study, the operation and maintenance framework for the Project was drafted for the following items.

- ◆ Participatory Forest Management (PFM) assigned area
- ◆ Treatment area by Departmental mode
- ◆ Nurseries under Departmental mode
- ◆ Infrastructures created under the Scientific Biodiversity Management
- ◆ Assets Created Under Community Based Biodiversity Management
- ◆ Village Forest Development Society (VFDS)
- ◆ Biodiversity Management Committee (BMC)
- ◆ Community Development and Livelihood Improvement Plan (CD&LIP) Fund (Revolving)
- ◆ Forest Ecosystem Management Plan (FEMP)/ Community Based Biodiversity Management Plan (CBMP) Fund
- ◆ Hydro cultural fodder production unit
- ◆ Non-timber Forest Product (NTFP)/ Non NTFP Cluster Organisations
- ◆ Jadi-Buti Cell
- ◆ Common Interest Group (CIG)/ Self Help Group (SHG)
- ◆ Geographical Information System (GIS)/ Management Information System (MIS) established by Project
- ◆ Assets created under the project for Project Management
- ◆ Project Society and Project Management Unit (PMU)

8 Operation and Effect Indicators

Tentative operation and effect indicators for the Project are presented in **Tables 8.1.1 and 8.1.2** of **Part II Chapter 8** of the Final Report. Depending on the practicability of the methods of establishing indicators, PMU may finalise the Operation and Effect Indicators with assistance from PMC and concurrence of JICA shall be sought when revising.

9 Environmental and Social Considerations of the Project

Positive Environmental Impacts

The proposed Project primarily focuses on restoration, rehabilitation and protection of forests, therefore the associated activities are expected to present various environmental benefits, including;

- ◆ Increase in the overall forest area in the state - proportionate increase in dense & moderately dense forests,
- ◆ Climate change mitigation through reduced emissions from deforestation and forest degradation,
- ◆ Improved ecosystem services as natural capital through watershed protection, protection of soils, moisture conservation measures, etc,
- ◆ Reduction in unsustainable utilisation of forest resources through improvements and support for NTFPs, medicinal herbs and plants, investments in alternative livelihoods and income generating opportunities, and

- ◆ Forest Department to be well equipped and strengthened to manage forest resources with active participation of empowered & organised communities.

Potential Negative Environmental Impacts

The following aspects are confirmed as potential negative environmental impacts as a result of environmental screening and scoping. However, all of them could be minimised or eliminated by applying the Environmental and Social Assessment Framework (ESAF).

- ◆ Various minor, small-scale and temporary environmental impacts associated with construction/ rehabilitation of small-scale rural infrastructure
- ◆ Minor and small-scale environmental pollution associated with livelihood enhancement activities
- ◆ Habitat disturbance and biodiversity loss from inappropriate afforestation techniques, construction works, or misuse of chemical fertiliser/ pesticide.

Positive Social Impacts

The Project also focuses on livelihoods of the local communities, thus it is anticipated to provide a number of social benefits that would include the following.

- ◆ Improvement of physical capital for rural communities with the help of renovation upgraded community infrastructure,
- ◆ Employment opportunities and income from forest protection activities that would contribute to enhanced financial capital,
- ◆ Improvements in range/pasture management that would cater for fodder requirements of the rural communities, and
- ◆ Improved livelihood opportunities through project support such as well managed forests, plantations and NTFP-based livelihoods.

Mitigating Potential Negative Social Impacts

Impacts on the social setting occasionally may have significant implications on the society, which could overwhelm the same caused by the environmental impacts induced by the project activities. In order to mitigate such significant negative impacts on the individuals and communities in the project areas, ESAF as well as draft Vulnerable Scheduled Tribes Planning Framework (VSTPF) has been drafted which demands the project to fully comply with.

- ◆ Loss of assets or access to assets (e.g. grazing lands, customarily held resources, etc.) through construction works,
- ◆ Restricted access to protected areas resulting in adverse impacts on incomes and livelihoods,
- ◆ Health risks associated with construction works, local domesticated livestock foraging, solid wastes disposed in labour camps, and
- ◆ Conflict within the community due to the exclusion from and/ or inequitable distribution of project benefits

Environmental and Social Risk Management and Mitigation

Based on data collection and review of legal, institutional arrangements, and baseline information

in relation to environmental and social consideration at the union level as well state level, the draft ESAF, the draft VSTPF, and the draft Involuntary Resettlement Plan Framework (IRPF) were prepared. These frameworks will be further elaborated reflecting the reformulation of the proposed Project. The overviews of each framework is summarised as follows.

(1) Draft Environmental and Social Assessment Framework (ESAF)

ESAF aims to manage and mitigate potential risks associated with the project activities during its implementation. Therefore, an assessment framework guiding the adequate environmental and social management and mitigation measures against environmental and social risks is prepared. The main safeguards instrument would be this ESAF that fully considered the existing environmental and social management systems in India and HP state as well as the JICA requirements.

(2) Draft Vulnerable Scheduled Tribes Planning Framework (VSTPF)

VSTPF shall be particularly applied to the individuals and communities of Scheduled Tribes (STs) and Forest Dwellers as per The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 who could be severely affected their daily lives by project activities. The main objectives of VSTPF are (i) to ensure that the targeted social groups, affected by any additional project interventions, will receive culturally appropriate social and economic benefits from the Project, (ii) to ensure their participation in the entire process of project activities, and (iii) to prevent any adverse impacts on the concerned individuals and communities as a result of the Project.

(3) Draft Involuntary Resettlement Plan Framework (IRPF)

The Project will not involve any physical relocation nor involuntary resettlement as long as ESAF is fully applied for the project preparation and its implementation. However, there might be certain sub-projects, which could potentially lead to acquisition of lands or involuntary resettlement for project activities. Therefore, the Involuntary Resettlement Plan Framework (IRPF) has been designed to clarify the required procedures.

10 Project Risks and Assumptions

For the effective and smooth implementation of the Project, the following external conditions and requirements shall be met for the proper implementation of the Project, as otherwise there may be significant impacts to project implementation.

1. Political stability during the Project so that the establishment of a proper implementing organisation will be supported by the political willingness of the HP state government, with the necessary budget for the human resources and other administrative costs.
2. No delay in fund disbursement during the implementation.
3. No delay in procurement, approval and any other decision making by the High Power

Committee and the Governing Body of the Project.

4. No change in strategies, policies, plans, and organizational structures in the forest sector.
5. Cooperation from other relevant line departments and Panchayat Raj Institutions.
6. No critical social conflicts or disputes occurring in the target divisions
7. No drastic economic recession in the national and regional economy.

The following external conditions and requirements shall also be met for the project investment and activities to achieve the desired and expected effects and impacts.

1. The macro-economy of the country will be stable.
2. No large-scale natural disasters, such as large-scale forest fire, landslides, severe flooding or earthquakes.
3. Climatic conditions in the target divisions are stable and unchanged.
4. Employment conditions in rural areas in the regions are not drastically changed.
5. The prices of NTFPs and other forest products do not drastically drop.

DATA SUMMARY

DATA SUMMARY

DATA COLLECTION AND ANALYSIS

| SECTIONS | Reference to Final Report |
|--|---------------------------|
| D- 1 Forest Sector in India | Part I Chapter 2 |
| D- 2 The Study Area (The State of HP) | Part I Chapter 3 |
| D- 3 Forests and Forest Areas in Himachal Pradesh | Part I Chapter 4 |
| D- 4 Review of Forestry Related Projects/ Schemes Similar to the Project | Part I Chapter 5 |
| D- 5 Issues and Lessons Learned from Forest Management in the State | Part I Chapter 6 |
| D- 6 Review of Draft Project Report (DPR) | Part I Chapter 7 |
| D- 7 Environment and Social Considerations | Part I Chapter 8 |
| D- 8 Preliminary Situational Analysis of the Potential Project Area | Part II Chapter 2 |

PART I STUDY

D-1 FOREST SECTOR IN INDIA

1.1 Forest Administration

The major governmental organisations relevant to the forestry sector and community development at the central level are as follows.

- ◆ Ministry of Environment, Forests and Climate Change (MoEF&CC)
- ◆ Ministry of Rural Development
- ◆ Ministry of Tribal Affairs
- ◆ Ministry of Social Justice and Empowerment

1.2 Forest Research and Extension

MoEF&CC has established, and has been financially supportive the following autonomous bodies/ agencies in the areas of forestry, ecology, botany, environmental education, ornithology, etc.

- ◆ The Botanical Survey of India
- ◆ The Zoological Survey of India
- ◆ The Forest Survey of India
- ◆ The Indian Council of Forestry Research and Education (Forest Research Institute Dehradun, Tropical Forest Research Institute Jabalpur, Arid Forest Research Institute Jodhpur, Himalayan Forest Research Institute Shimla, Institute of Forest Genetics and Tree Breeding Coimbatore, Institute of Forest Productivity Ranchi, Rain Forest Research Institute Jorhat, Institute of Forest Biodiversity Hyderabad, Institute of Wood Science and Technology Bangalore, Centre for Social Forestry and Eco-Rehabilitation Allahabad, Centre for Forestry Research and Human Resource Development Chhindwara, Advanced Research Centre for Bamboo and Rattan (ARCBR) Aizawl)
- ◆ Indian Institute of Forest Management
- ◆ Wildlife Institute of India, Dehradun
- ◆ The Gobind Ballabh Pant Institute of Himalayan Environment and Development

1.3 Forest Inventory and Monitoring

Major forest inventory and monitoring mechanisms existing in India are as follows.

- ◆ Forest Survey of India (FSI), Bi-annual Forest Cover Mapping (India State of Forest Reports: ISFR)
- ◆ National Forest Inventory (NFI)
- ◆ CAMPA Monitoring System (e-green watch)
- ◆ Monitoring of Forest Fires: Forest Fire Alerts System
- ◆ Biodiversity Information System
- ◆ Online Submission & Monitoring of Environmental, Forests and Wildlife Clearance” (OSMEFWC)

1.4 National Level Policies, Laws/Regulations, and Plans relevant to the Proposed Project

Major central level policies, rules, regulations, notifications, policies and guidelines related to the Project are listed below.

Forest and Wildlife

- ◆ Indian Forest Act 1927
- ◆ National Forest Policy 1988
- ◆ Forest Conservation Act 1980 and Amendment 1988
- ◆ Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
- ◆ Wildlife (Protection) Act 1972 and Amendment 1993
- ◆ Biological Diversity Act 2002
- ◆ Joint Forest Management

Land, Resettlement and Tribes

- ◆ Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013
- ◆ Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006
- ◆ Scheduled Caste and Scheduled Tribes (Prevention of Atrocities) Act 1989
- ◆ National Policy on Safety, Health and Environment at Work Place

Environment Protection and Environmental Impact Assessment (EIA)

- ◆ Environment(Protection) Act, 1986 and Amendment 1991
- ◆ Environment (Protection) Rules 1986 and Amendments
- ◆ EIA Notification 2006 and Amendments 2007, 2008, 2009, 2011 and 2012
- ◆ The National Green Tribunal Act 2010

Water, Air and Pollution

- ◆ Water (Prevention and Control of Pollution) Act 1974 and Amendment 1988
- ◆ Water (Prevention and Control of Pollution) Cess Act 1977
- ◆ Water (Prevention and Control of Pollution) Rules, 1975
- ◆ Air (Prevention and Control of Pollution) Act 1981

D-2 THE STUDY AREA

2.1 Overview

The total geographical area of HP is 55,673 km²; which is divided into 12 districts and Hamirpur is the smallest district of HP which covers an area of 1,118 km² (2.01%) and Lahaul & Spiti has the largest area of 13,835 km² (24.85%). The population of the state is 6.86 million (Census, 2011) which constitutes 0.57% of the country's population. The rural population in HP accounts for 89.96% of the total population and the urban population constitutes 10.04%. The overall population density is 123 persons per km².

The HP state is bordered by Jammu & Kashmir in the north, Punjab in the west, Haryana on the south-west and Uttarakhand on the south-east. The eastern border of the state touches the Tibet on the east. The state is located between latitude 30° 22' 40" north to 33 ° 12' 40" north and longitude 75 ° 45' 55" east to 79 ° 04' 20" east.

2.2 Administration

The state is divided into 12 districts. Under the districts, for the purpose of revenue collection, delivery of community development, and local governance, three lines of administrative units are established (see Table below).

Table 2.2.1 Outline of the Administrative Units in HP State

| Level/ Particulars | Revenue | Rural Development | Panchayati Raj Institution (PRI) |
|-----------------------|--|---|---|
| Division | The state is divided into 3 divisions | | |
| District | | | |
| Name | District Collectorate | District Rural Development Agency | Zila Panchayats |
| No of Units | 12 | 12 | 12 |
| Key Functions | <ul style="list-style-type: none"> - Monitoring of rescue operation during various accidents. - To conduct the Lok Sabha, Vidhan Sabha and Panchayati Raj Institutions Elections. Monitoring of Law & Order. Inspection of various offices. - Protocol duties by attending VVIPs and VIPs Monitoring of implementation of various policies and programmers of the Government in letter & spirit. - To conduct various joint inspections. | <ul style="list-style-type: none"> - To oversee the implementation of different anti-poverty programmes. - To develop the capacity to build synergies among different agencies involved for the most effective results - To develop distinctive capabilities rather than perform tasks that are legitimately in the domain of the PRIs or the line departments | <ul style="list-style-type: none"> - To maintain District Development fund and utilise for any type of constructive work in District. - To implement the programmes as per directives of the State Government. - To look after safety, health, education, industry and financial aspect of the people living in the district. To render advisory service to their Panchayat Samities/ Approve the budgets, plans of the plans of the Panchayat Samities/ Plan for and prepare proposals for all items of developmental activities. - To supervise the work of different subjects undertaken by Panchayat Samiti in coordination. organise for various meetings of the members and officials, keep up to date records for various programme and documentation with the help of other Departments. It works for the areas where Panchayat Samiti are defunct. |
| Intermediate | | | |
| Name | Sub-Divisions/ Tehsils/ Sub-Tehsils | Community Development Block | Panchayat Samiti / Gram Panchayat / Panchayat Wards |
| No of Units | 62 Sub-divisions 141 Tehsils/sub-tehsils | 78 | 77 |
| Village | | | |
| Name | Revenue Village (Serves as the grass roots unit for government interventions.) | | |
| No of Units | 3,226 | | |

Source: Economics & Statistics Department, Himachal Pradesh

2.3 Socio-Economic Conditions

Population and Population Density: The population of HP state has been growing continuously over the years; however, the growth rate of total population shows a slowing trend over the last three decades. In 2011, the total population of HP is 6,864,602 out of which 3,481,873 were males (51%) and 3,382,729 (49%) were females. The rural population accounted for nearly 90% of the total population and the growth of urban population over the period of time is also seen as a trend. The population density was recorded the highest in Hamirpur (407 persons per km²) and followed by Una (338 persons sq. km), Bilaspur (328 persons per km²) and Solan (300 persons per km²). On the other hand, the most sparsely populated area is Lahaul & Spiti with 2 persons per km².

Scheduled Castes (SCs)/ Scheduled Tribes (STs) / Other Backward Class (OBCs): In the state, the Scheduled Caste (SC) and Scheduled Tribe (ST) population accounts for 25.19% and 5.71% respectively of the total population of the state. Bhot, Gaddi, Gujjar, Jad and several other tribal communities are known to reside in the state. Some of the communities are known for their nomadic way of life. They are seasonal migrants and pastoralists moving through the pastures along with their livestock. As per the Himachal Backward Classes Finance and Development Corporation, a Government of HP undertaking under the aegis of Ministry of Social Justice and Empowerment, established on 31 January 1994, reckons the population of Backward Classes as 927,452.

Literacy Rate: Literacy rate in HP is 82.8%; the male and female literacy rates are 89.5% and 75.9% respectively. Among the rural and urban folk of the state, the literacy rate is 81.9% and 91.1% respectively. Among the SC and ST communities the literacy level is 78.9% and 73.6% respectively.

Poverty: In HP state, 23.87% of the rural population was reported to be below poverty line (2002-2007)¹. The highest incidences of poverty are observed in Chamba district (54.15%), followed by Lahaul-Spiti (43.50%). On the other hand, Shimla (29.07%), Sirmaur (19.44%), Una (16.92%) and Kullu (16.24%) had the lowest figures. The state has succeeded in reducing the poverty level in the recent years as reported in “Scaling the Heights (World Bank, 2015)”. The report highlighted that the poverty level in the rural areas of Himachal Pradesh has declined from 36.8% in 1993 to 8.5% in 2011, which are four-fold declines. This is better than any other state in the country. Furthermore, such improvement in overall poverty condition has permeated across the socio-economic groups.

Gender Situation: In comparison to the national average, the proportion of women who have gone through 10 or more years of education are much higher. Representation of women in Panchayati Raj Institution in the state is higher than that in other states of India. On the other hand, women’s work participation and ownership of a house/ land still significantly lags behind in comparison to the rest of India. Within HP state, the work participation of women is higher in the urban area, whereas the proportion of women owning house/ land are slightly higher in the rural areas. Gender status in HP is summarised in the Table below.

¹ “Survey on Poor Families 2002-2007”. Rural Development Department, Himachal Pradesh.

Table 2.3.1 Gender Status in HP State (2005-06/ 2015-16)

| Particulars | Himachal | | | | All India | | | |
|--|----------|---------|---------|---------|-----------|---------|---------|---------|
| | 2015-16 | | 2005-06 | | 2015-16 | | 2005-06 | |
| | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural |
| Population (female) age 6 years and above who ever attended school (%) | 89.8 | 77.9 | 79.0 | 73.1 | 80.6 | 63.0 | 68.8 | 58.3 |
| Sex ratio of the total population (females per 1,000 males) | 914.0 | 1,097.0 | 1,078.0 | 1,070.0 | 956.0 | 1,009.0 | 991.0 | 1,000.0 |
| Sex ratio at birth for children born in the last five years (females per 1,000males) | 1,151.0 | 920.0 | 936.0 | 913.0 | 899.0 | 927.0 | 919.0 | 914.0 |
| Adults (age 15-49) | | | | | | | | |
| Women who are literate | 92.6 | 87.8 | 88.2 | 79.5 | 81.4 | 61.5 | 68.4 | 55.1 |
| Men who are literate | 95.0 | 96.4 | 96.2 | 94.0 | 90.8 | 82.6 | 85.7 | 78.1 |
| Women with 10 or more years of schooling (%) | 73.7 | 57.9 | 59.4 | 44.7 | 51.5 | 27.3 | 35.7 | 22.3 |
| Currently married women who usually participate in household decisions | 96.4 | 90.0 | 90.8 | 79.2 | 85.8 | 83.0 | 84.0 | 76.5 |
| Women who worked in the last 12 months who were paid in cash | 27.2 | 15.5 | 17.0 | 10.6 | 23.2 | 25.4 | 24.6 | 28.6 |
| Women owning a house and/ or land (alone or jointly with others) | 9.2 | 11.6 | 11.3 | na | 35.2 | 40.1 | 38.4 | na |
| Women having a bank or savings account that they themselves use | 77.5 | 67.5 | 68.8 | 22.2 | 61.0 | 48.5 | 53.0 | 15.1 |
| Women having mobile phone that they themselves use | 85.3 | 72.3 | 73.9 | na | 61.8 | 36.9 | 45.9 | na |

Source: National Family Health Survey-4 2015. Ministry of Health and Family Welfare, Government of India

2.4 Zoning

Bio-Geographic Regions

In HP, four of the 26 bio-geographic provinces are represented in four zones as follows:

- ◆ Zone 1: The Trans-Himalaya: The area of Lahaul & Spiti district
- ◆ Zone 2A: The North-west Himalaya: The area on north of the Satluj River. It is characterised by a more 'Mediterranean' climate
- ◆ Zone 2B: The Western Himalaya: The area south of the Sutlej River. It is dry in general, and has harsh winters.
- ◆ Zone 4A: Shivalik (Semi-arid – Punjab Plains): South-western part of HP with lower elevation and is a semi-arid zone that is characterised by the hot dry foothills.

Elevational Zoning

HP state has been divided into four elevational zones based on altitudes associated with different forest types with trees, shrubs and herbs species.

- ◆ Sub-tropical zone: comprising low hills up to 1,000 m.
- ◆ Sub-tropical zone: covering mid hills 1,000 - 1,500 m.
- ◆ Temperate Wet zone: representing high hills 1,500 - 3,000 m.
- ◆ Temperate dry zone: representing high hills above 3,000 m (alpine pasture zone).

Zoning to be Applied in the Study for Reformulation of the Proposed Project

Since existing zoning classifications are originally developed for different purposes, there is no single zoning classification which fully covers all aspects of natural conditions as well as forest management which fits to the purpose of the Study. Hence, the following zoning classifications were adopted in the Study for further project area prioritisation and activities formulation.

- ◆ Bio-geographic region
- ◆ Dry Alpine Zone/ Non-Alpine Zone classification based on Forest Type-Group (**Part I, Section 4.3.3**) and Grassland/ Pasture distribution (**Part I, Section 4.5.3**) based on IIRS vegetation and land use map 2012

These classifications were highlighted in the Study, since i) classifications themselves and their sources of information are familiar within HPFD, and ii) polygon data are available or possible to process.

2.5 River Systems and Catchments

Various classifications of river catchments and river basins are available for different purposes. Accordingly, the Study Team adopted the classification based on river catchments and basins data/information provided by the GIS cell of HPFD. The classification is described the Table below.

Table 2.5.1 River Catchments and River Basin in HP State

| River Catchment | River Basin |
|-----------------|--|
| Satluji | - Satluj - Spiti |
| Beas | - Beas |
| Chenab | - Chenab - Ravi - Zaskar (Zanskar) |
| Yamuna | - Giri - Pabbar |

Source: Prepared by JICA Study Team (2017) based on information from HPFD

2.6 Natural Disasters

HP state is prone to various hazards both natural and man-made. Main hazards consist of earthquakes, landslides, flash floods, snow storms and avalanches, droughts, dam failures, fires (domestic and wild), accidents (road, rail, air, stampedes, boat capsising, biological, industrial and hazardous chemicals) etc.

D-3 FOREST AND FOREST AREAS IN HIMACHAL PRADESH

3.1 State Level Policies, Laws/Regulations, and Plans relevant to the Proposed Project

Major state level policies, rules, regulations, notifications, policies and guidelines related to the Project are listed below.

Forest and Wildlife

- ◆ Himachal Pradesh Forest Sector Policy and Strategy 2005
- ◆ Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 2013 and Amendment Rules, 2014, 2017

- ◆ Himachal Pradesh Forest (Timber Distribution to the Right Holders) Rules, 2013 and Amendments 2015 and 2016
- ◆ Himachal Pradesh Participatory Forest Management (PFM) Regulations 2001
- ◆ PFM Rules Regulating the Grant in-Aid to the Village Forest Development Societies 2002
- ◆ The Himachal Pradesh Forest Fire Rules, 1999
- ◆ Transit Rule Notifications
- ◆ State Compensatory Afforestation Fund Management and Planning Authority (CAMPA)
- ◆ HP Forest FRA Rules, 2008
- ◆ Himachal Pradesh Forest (Sale Of Timber) Act, 1968 The Himachal Pradesh Forest (Sale Of Timber) Rules, 1960
- ◆ Himachal Pradesh Resin and Resin Products (Regulation of Trade) Act, 1981
- ◆ The Himachal Pradesh Land Preservation Act, 1978
- ◆ Himachal Pradesh Private Forest Act and Rules 1969

3.2 Forest Administration

The HP Forest Department (HPFD) operates through wing/ office formations and autonomous bodies within the umbrella of the HP State Government. HPFD is headed by the Principal Chief Conservator of Forest (Head of Forest Force: PCCF (HoFF) and comprised of the forest (territorial) wing, wildlife wing and direction (functional) offices. The Himachal Pradesh State Forest Development Corporation Limited (HPSFCDL) acts as the commercial wing of HPFD and discharges the function of disposing various forest products like timber, bamboo, resin, non-timber forest products (NTFPs, etc).

The state has 9 forest circles and 37 territorial forest divisions² under the PCCF(HoFF), and 3 forest circles and 7 wildlife divisions with under the PCCF (Wildlife) cum the chief wildlife warden. The forest administrative units under divisions are further divided into “ranges”, “sections/blocks” and then to “beats”. Each level of forest administrative units is managed by different ranks of HPFD officers.

In total, 44 divisions (37 territorial divisions and 7 wildlife divisions), 197 ranges (167 territorial ranges and 30 wildlife ranges), 560 blocks (493 territorial blocks and 67 wildlife blocks) and 2,033 beats (1,840 territorial beats and 193 wildlife beats) exist within HPFD as of July 2017.

3.3 Forest Area Classification

In HP, the ratio of the legal forest area is high, and 66.52% of its area is recorded as the notified forest area such as the reserved forest and the protection forest. Furthermore, 22.57% of the notified forest area (15.01% of the state area), areas with high biodiversity significance is designated as the protected area such as the national park and the wildlife sanctuary. The notified forest areas in HP is summarised in the table below.

² This consist of 36 territorial divisions which prepare the working plan (section 4.10.1 of this report), and Shimla Urban division which currently does not prepare the working plan. The Shimla Urban Division is also influenced by HP Municipal Cooperation Act 1995 and its status as the division under HPFD or under the municipal cooperation changes from time to time depending on changes in policy of state government administration.

Table 3.3.1 Status of Notified Forest Area in HP State

| No | Class of Forest | Area (km ²) | % |
|------------|--|-------------------------|---------|
| (a) | Forests Area Managed by Forest Department | | |
| 1 | Reserved Forest | 1,897.86 | 5.12% |
| 2 | Protected Forest | | |
| 2-1 | Demarcated | 11,911.80 | 32.17% |
| 2-2 | Un-Demarcated | 21,197.97 | 57.24% |
| 2-3 | Strip Forests | 13.12 | 0.04% |
| 3 | Un-Classed Forests | 886.34 | 2.39% |
| | Total (a) | 35,913.90 | 96.98% |
| (b) | Private Forest Areas Managed by Forest Department | | |
| 1 | Area under Section 38 of the India Forest Act (IFA) | 108.67 | 0.29% |
| 2 | Area Managed under Land Preservation Act (LPA) | 260.02 | 0.70% |
| 3 | Area under HP Private. Forest Act | 0.80 | 0.00% |
| | Total of (b) | 369.49 | 1.00% |
| (c) | Private Forest Areas Not Managed by Forest Department | | |
| 1 | Municipal Forests | 10.37 | 0.03% |
| 2 | Cantonment Forests | 13.86 | 0.04% |
| 3 | Shamalat & Mustarqua Forests | 169.97 | 0.46% |
| 4 | Other Forests (Private Individuals) | 555.38 | 1.50% |
| | Total of (c) | 749.58 | 2.02% |
| | Grand Total a + b + c | 37,032.97 | 100.00% |

Source: Annual Administrative Report, HPFD (2011-12), Department of Economics & Statistics HP; Statistical Outline of HP 2012-13[page 103].

3.4 Forest Cover

The forest cover of HP based on the interpretation of satellite data of October 2013 to February 2014 as per the India State of Forest Report (ISFR) 2015 is 14,696km² which is 26.40% of the state's area. In terms of forest canopy density classes, the state has 3,224 km² (5.79%) very dense forest, 6,381 km² (11.46%) moderately dense forest and 5,074 km² (9.14%) under open forest. Around 623 km² is area under 'Trees outside forests' and the forest/tree cover of HP sums up to 27.76%.

According to the forest cover data of HP between 2003 and 2015 as per ISFR by FSI, at the state level or district level, forest cover of HP tends to be in an increase and somewhat of stable forest conditions for dense forests. The change in the forest cover between 2009 and 2015 shows increase of the open forest cover by 30 km² which seems to be the result of improvement in vegetations of scrubs and non-forest areas through plantation and other forest management activities.

3.5 Wildlife and Biodiversity

Biodiversity Profile:

The forests of HP are abundant in vascular flora. Out of the total 45,000 species of plants found in the country, about 3,295 species (7.32%) have been reported in the state. Among these, over 95% species are native to the state and characteristic of Western Himalayan flora, while the remaining 5% (150 species) are exotic which were introduced in the last 150 years.

Like forest resources, HP is bestowed with a repository of fauna. Out of the 77,450 species of

animals, the state is home to 5,721 species, amounting to 7.4% of the Indian fauna. Among the fauna found in HP, invertebrates constitute 88.4% (5,055 species) and vertebrates 11.6% (666 species: 77 mammals, 447 birds, 44 reptiles, 17 amphibians, and 81 fishes) of the total found in HP³. Recent study by Sharma and Sidhu (2016)⁴ indicates that among the vertebrates, 112 mammal species, 55 reptile species, 16 amphibian species, and 81 fish species are found in HP.

Protected Area:

As of April 2017, there are five national parks, 26 wildlife sanctuaries and three conservation reserves exist. The total area under the protected area network is 8,358.48 km² which is around 15% of the total forest area of the state.

Biodiversity Hotspot and Key Biodiversity Areas (KBAs):

A biodiversity hotspot is a bio-geographic area that has a significant reservoir of biodiversity and is consequently threatened by destruction. The Himalayan Biodiversity Hotspot is one such biodiversity hotspot and the HP state falls within the hotspot.

Key Biodiversity Areas (KBAs) are regarded as sites that contribute significantly to the global persistence of biodiversity and is suggested to be identified based on IUCN's "Global Standard for the Identification of Key Biodiversity Areas (IUCN 2016). In India, 531 KBA sites are identified by various organisations. Out of the 531 KBA sites in India, 28 sites are present in HP, which is 5th in terms of numbers of KBAs and 9th in area size among 36 states and union territories in India.

Human-Wildlife Conflicts:

In the last five years (2012-13 to 2016-17), annual averages involved 3.8 human death cases, 282 injury cases and 2.47 million INR (Indian Rupee) compensation paid for human casualties. In the same period, annual averages of animal/ cattle losses were 325 cases with 1,020 deaths with 1.48 million INR compensation paid. In terms of types of animals which caused the conflicts during 2012-13 to 2016-17, monkeys, bears and leopards were major causes of damages in the state, and the human death were caused by bear and leopard attacks.

3.6 Forest Management: Plantation Management

At the state level, there has been a declining trend in annual achievements over years from approximately 24,000 hto 32,800 ha in 1980s and 1990s to approximately 17,000 ha in up to early 2011-12. In the recent years (2015-16 and onward) the annual achievement has further declined gradually to around 11,000 ha per year.

District-wise artificial regeneration achievement of HP including projects and centrally sponsored schemes (CSSs) between 2011-12 to 2016-17 is summarised in the Table below. In the past six years the total area brought under plantation is 94,008 ha and total number of seedlings planted was 569.88 million.

³ State of Environment Report 2013 Himachal Pradesh; Department of Environment, Science & Technology

⁴ I. Sharma and A.K. Sidhu, "Faunal Diversity of all Vertebrates (excluding Aves) of Himachal Pradesh", Biological Forum-A International journal 8(1):1-26 (2016)

Table 3.6.1 Amount Invested in Forestry and Afforestation Area in HP State under Plan Budget

| | Plan Period | Plan Expenditure State Sector (Million INR) | Area Afforested (Ha) | Average Annual Afforestation (Ha) | Cumulative Afforestation (Ha) |
|----|-----------------------------------|---|----------------------|-----------------------------------|-------------------------------|
| 1 | First Five Year Plan (1950-56) | 18 | 5,294 | 1,059 | 5,294 |
| 2 | Second Five Year Plan (1956-61) | 78 | 17,926 | 3,585 | 23,220 |
| 3 | Third Five Year Plan (1961-66) | 438 | 40,187 | 8,037 | 63,407 |
| 4 | Annual Plans (1966-69) | 310 | 27,321 | 9,107 | 90,728 |
| 5 | Fourth Five Year Plan (1969-74) | 929 | 73,349 | 14,670 | 164,077 |
| 6 | Fifth Five Year Plan (1974-78) | 1,308 | 73,599 | 14,720 | 237,676 |
| 7 | Annual Plans (1978-79 & 1979-80) | 1,095 | 44,897 | 22,449 | 282,573 |
| 8 | Sixth Five Year Plan (1980-85) | 4,698 | 120,399 | 24,080 | 402,972 |
| 9 | Seventh Five Year Plan (1985-90) | 10,883 | 163,826 | 32,765 | 566,798 |
| 10 | Annual Plans (1990-91 & 1991-92) | 6,475 | 58,945 | 29,473 | 625,743 |
| 11 | Eighth Five Year Plan (1992-97) | 23,420 | 142,732 | 28,546 | 768,472 |
| 12 | Ninth Five Year Plan (1997-2002) | 39,659 | 131,850 | 26,370 | 900,325 |
| 13 | Tenth Five Year Plan (2002-07) | 38,456 | 86,341 | 17,268 | 986,666 |
| 14 | Eleventh Five Year Plan (2007-12) | 59,508 | 88,661 | 17,732 | 1,075,327 |

Source: Compiled by JICA Study Team (2017) based on Himachal Forest Statistics 2013

3.7 Participatory Management in HP

As in other states in India, Joint Forest Management Committees (JFMCs) are established for implementation of National Afforestation Programme (NAP). As of July 2017, 1,562 JFMCs have been established at a village level, of which 963 are functional⁵.

In addition to the interventions under NAP, externally aided projects have also adopted the participatory mode of forest management and established the community based institutions under different names. Most of these community level institutions are considered to be dormant.

In the state, forest management engaging communities are implemented in compliance with the Himachal Pradesh Participatory Forest Management (HP-PFM) Regulations 2001. The rule calls for formation of a Gram Panchayat Ward based people's institution called Village Forest Development Society (VFDS), which is to be registered under the Societies Registration Act 1860. HP-PFM defines the composition of the VFDS, usufruct sharing, and other modalities of organisational management. One of the points that is worth highlighting from the PFM regulation of HP is that the member secretary of VFDS is to be elected from the general house of VFDS members themselves and not the forest guard or frontline staff which is often the case in other states. Furthermore, the HP PFM regulation defines that the benefits are to be shared between VFDS and Gram Panchayat, whereas in other states mostly the benefit sharing is to occur between the community based forest management committee such as VFDS or JFMCs and the forest department.

In HP, a number of village level forest management institutions were constituted by different projects since 1990s in the state. However, the sustainability of such organisations largely depends on the fund availability.

⁵ Source: HPFD.

<http://hpforest.nic.in/pages/display/NGY2NTRniGZhNTZz-himachal-pradesh-participatory-forest-management-> (Accessed on 16th July 2017).

3.8 Timber Distribution Rights

Rights regimes of local communities were clearly defined in the forest settlement reports prepared during the pre-independence period. In the a) Forest Settlement in Kangra (1879 – 97) and b) Forest Settlement in Kullu (1866 – 96), definition of rights of local communities had been classified into following four types:

- 1) Proprietary body of the villages and *tikas* in whose name common waste land was recorded. These proprietors and their tenants are the right holders,
- 2) Right holders who purchased common waste and the seller retaining the agriculture land and paid no land revenue. They were given the rights of grazing, grass cutting, and collection dry fuel and stones (rights for non-agriculturists),
- 3) Right holders who paid land revenue and exercised the rights in demarcated forest, and
- 4) Right holders who exercised rights over un-demarcated waste (rights of non-agricultural residents – rights to graze few cattle, collect dry wood and cut grasses – only for own domestic requirements).

Right holders included both *bartandars* and *khewatdars*. While *bartandar* is a person entitled to right over land or trees in a protected forest, which may be a property of other, *khewatdar* is a person who has entitlement to rights by virtue of his/ her sole and/ or joint property in subject of right. The admitted rights are as follows:

- ◆ Grazing of cattle
- ◆ Grazing of sheep and goats by the Gaddis
- ◆ Timber for agricultural implements, domestic utensils
- ◆ Timber of construction and repair of dwelling houses, cattle sheds and other agricultural buildings
- ◆ Timber/ dry wood for fuel and daily use
- ◆ Timber for marriage, funeral ceremonies
- ◆ Timber for charcoal for manufacturing of agriculture implements or repair of implements
- ◆ Grasses and side branches of trees for fodder
- ◆ Brushwood for fences
- ◆ Branches, fallen leaves for manure
- ◆ Leaves of trees for tanning
- ◆ Barks of creepers and stumps of trees for torches
- ◆ Fruits, flowers, medicinal and edible roots and leaves
- ◆ Stones for house construction
- ◆ Earth for plastering, making vessels, bricks
- ◆ Wild honey

Especially the rights admitted were exercised for the *bonafide* agricultural and domestic purposes and these are subject to limitation, without endangering the existence of forest cover.

The rights and concessions included free grazing of all animals of the right holders in their respective chaks. If the right holders intend to graze their animals in other chaks and other divisions, then they have to pay *tirni/ cess* to the government. The rights and concessions included right to building timber against payment of nominal fee for different species and there was no mention of ceiling of trees to be sanctioned to the right holders.

D-4 REVIEW OF FORESTRY RELATED PROJECTS/ SCHEMES SIMILAR TO THE PROJECT

4.1 Review of JICA's Forestry Projects in India

The existing study⁶ states that “society” mode has certain advantages and recommends as reproduced below. A Project Management Unit (PMU) as a society provides following benefits for operational efficiency:

- ◆ Dedicated department
- ◆ Smoother fund flow
- ◆ Quick decision making
- ◆ Better M&E
- ◆ Able to mobilise experts and skill with good remuneration
- ◆ Able to generate more fund from donor and support agencies
- ◆ Free to decide own operational and HR policy
- ◆ When the PMU functions in Society mode, all the Project Directors play a pivotal role in efficient implementation and resultantly ensure the success of the project.

The study further recommends some of the processes the implementing agency needs to ensure in case, society mode is opted and prepare standard guidelines with regards to incorporation and other regular compliance need to be framed in consultation with tax & legal experts. These guidelines should cover the following issues:

- ◆ How to incorporate PMU and get it registered with Societies Act
- ◆ How to apply for income tax exemptions, so that grants, receipts or donations are exempt from income tax
- ◆ Conceptual clarity on issue of transfer of funds from PMU to divisional management units (DMUs) and field management units (FMUs) to community level implementation organisation such as VFC (village forest committee) when PMU is a society incorporated for Charitable Purposes while DMUs are a part of forest department and not a separate entity. Similarly, not only the PMU but also VFCs are registered societies. So how will such transfers be treated
- ◆ Further PMU formed for charitable purposes and it consolidates their financial statements with that of DMUs for submission with Income Tax Department for claiming exemption. Is it proper from income tax point of view
- ◆ Guidelines based on income tax provisions for fund management including application of receipts, so as to avoid unnecessary tax liabilities. Proper clarifications should be sought with regards to the Income Tax Rules for ‘application of funds’ as income tax authorities can disallow the exemption if the funds are not applied properly as per rules and can have severe tax liabilities and penalties
- ◆ Policy with regards to the proper documentation, compliances and timelines of the same
- ◆ Guidelines for annual compliances, requirements, roles and responsibilities
- ◆ Awareness of tax liability of non-compliance
- ◆ Clarity on who will bear the cost of non-compliance and taxes in case of delays
- ◆ Engagement of consultant for regular compliance, advice, changes in law and internal audit
- ◆ Clarity on taxation, legal process for transfer of assets after the term of PMU ends
- ◆ Clarity on process of support, sustenance and continuity of projects after the term of PMU ends in terms of roles, responsibility and financial support.

In addition to the above highlighted points in the impact study, there are some operational and

⁶ Impact Assessment Study of JICA assisted Projects (2016) by All State Finance services Pvt. Ltd. and BASIX Consulting and Training Services Ltd.

policy issues that are being suggested by the study for future projects. Essence of some of the key recommendations specific to the JICA assisted projects is presented below:

- ◆ Adoption of landscape approach for afforestation and conservation activities
- ◆ Use of improved technology and practices for raising quality planting material in nurseries
- ◆ Promotion of agro/ farm forestry models outside forest areas
- ◆ Identification of keystone, flagship and umbrella species for biodiversity conservation, and creation of People's Biodiversity Registers
- ◆ Shift from 'JFM' to 'community forest management (CFM)' approach particularly in light of FRA, 2006 and PESA, 1996 act provisions
- ◆ Need of strengthening current revolving fund mechanism
- ◆ Requirement of strong institutional arrangements for focused intersectoral convergence
- ◆ There is need for engaging professional/ expert organisations for livelihood support and financial inclusion
- ◆ Exploring CSR opportunities for securing additional funds for natural resource management and livelihood promotion activities.

The workshop titled 'Sustainable Forest Management with People's Participation and Modernisation of Management' was organised by the West Bengal Forest Department (WBFD), the executing agency, through the West Bengal Forest and Biodiversity Conservation Society implementing the JICA assisted project during 11- January 2017 at Kolkata and Sundarbans.

This 9th Workshop basically worked further on the recommendations made during the 8th annual national workshop organised by the Sikkim Biodiversity Conservation and Forest Management Project (SBFP) at Gangtok, Sikkim during February 29 and March 1, 2016.

The recommendations were made during the sessions of the 8th workshop in four broad themes; a) Sustainable Forest and Biodiversity Management, b) Livelihood Security, c) Institutional Strengthening and Capacity Building, and d) Technology based Monitoring. During, 9th workshop, further deliberations took place, and these recommendations were further fine-tuned and made actionable.

4.2 Reviews of Past and On-going Similar Projects

Issues and lessons which can be reflected in the proposed Project:

Forest Ecosystem Climate Proofing Project (KfW)

- ◆ Sufficient orientation and willingness of community is foremost prior to initiating formation of village level institutions
- ◆ Not only VFDS, but involvement of Gram Panchayats maybe essential after the project for O&M of assets/ infrastructure created under the project

Swan River Integrated Watershed Management Project (JICA)

- ◆ Full-time dedicated staff should be spared by HPFD and project staff (including on contact) should work in synergy and minimise duplication of interventions as well as responsibilities to get focus on the process and quality service delivery
- ◆ Realistic assessment of available area for treatment is required prior to setting project targets

Mid-Himalayan Watershed Management Project (World Bank)

- ◆ Involvement of Gram Panchayats as partner institution is one of realistic initiatives for ensuring sustainability and building social capital in long run. Furthermore, strengthening support to the Gram Panchayats is useful for generating interest for engagement of Panchayats and community for action.
- ◆ Forest frontline staff to be involved for verification of the works, but the challenge would be to ensure focused time for the project as they are already overloaded with regular departmental works and priority.

Indo-German Eco-development Changar Project (GTZ)

- ◆ Quality and timely planted mixed plantations are most effective to achieve rehabilitation and conservation objectives in a short span of time.
- ◆ Protected plantations within few years enrich biodiversity.
- ◆ Grass production increases substantially after the plantation enclosure and has good economic potential
- ◆ Natural regeneration of various plants (e.g. medicinal herbs and trees, fruit species) enhances the economic value spontaneously.
- ◆ Exit Policy be developed and disseminated at least one year prior to completion of a project so that all stakeholders concerned know well in advance about their roles, rights and responsibilities after the project.

National Social Forestry Project (World Bank/ USAID)

- ◆ Planning process should be bottom-up. Community must be actively involved in planning process to have greater ownership.
- ◆ Commitment from the state government for continued financing support for the project initiatives.

Himachal Pradesh Forest Sector Reform Project (DFID)

- ◆ Community institutions of forest resource users can be empowered to address livelihood needs, particularly through linkages with local government, and other government departments

Sanjhi Van Yojana (SVY) Scheme

- ◆ Thorough understandings and analysis on the dependence of natural resources of targeted beneficiaries for determining interventions.

D-5 ISSUES AND LESSONS LEARNED FROM FOREST MANAGEMENT IN THE STATE

Based on the findings as well as reviews of forest management and livelihood status of HP, issues and lessons which can be reflected in the proposed Project have been examined by the Study Team. The overall reviews of the forest management and livelihood status in HP are described in the Table below.

Table 5.1 Overall Reviews of Forest Management and Livelihood Status in HP

| Issues and Features | Description |
|--|---|
| 1. Application of JFM/PFM approach as well as definition of JFM/PFM areas differ among projects/schemes | <ul style="list-style-type: none"> - JFM/PFM related interventions in HP have been supported by various projects and mixture of village level institutions under different names (VDC, VFDC, VFDS, and JFMC) of similar nature have been established. - Therefore, both the national level JFM guideline and the state level PFM regulation provide the fundamentals of JFM/PFM approaches in HP. However, their applications at field varied from project to project. - In most of the past project/schemes, JFM/ PFM treated areas were recorded or demarcated, but JFM/PFM areas beyond treated areas were not demarcated or recorded. - Definitions of JFM/PFM areas (beyond treated areas), varies among projects/schemes, which ranges from forest areas within revenue village, ward, gram panchayat, or entire ward/ gram panchayat. This may have been the results of different kinds of rights endowed to people in various forest settlement |

| Issues and Features | Description |
|--|--|
| | <p>reports determined in respective princely states (prior to formation of HP).</p> <ul style="list-style-type: none"> - Compared to other states, the treatment (treated) area to each JFM/PFM institution seem to be smaller and not more than 30 ha. - JFM/PFM areas could be scattered and fragmented which may downgrade the efficiency and effectiveness of interventions. |
| <p>2. Not much strong relationships among poverty, forest dependency, and forest degradation are observed in HP</p> | <ul style="list-style-type: none"> - There are high demands for the fuelwoods (especially for heating during winter) and other forest resources. There has been an increase in the demand for fuelwood according to the Forest Development Corporation statistics. But at the same time, many households have other sources of energy for cooking and other household requirement and reduced dependency on fuelwood. - Many communities have varieties of livelihood options (i.e. government;/ private sector work) and access to commercial facilities (bank, etc.). However, Lahaul & Spiti and a part of Kinnaur have limited access to amenities including means of communication. Especially during winter, the life in the areas is generally met with severe challenges as the lifeline gets affected by the snow and freezing temperature. - In HP, though there may be areas/ communities which rely exclusively on forests, there is a tendency that forest dependents or users of forest resources are not always relying to the forest for daily survival. - In the surveyed households, the survey results indicated that the income level of the ST households was the highest compared to other social groups, which was also reflected in the field observation. It was difficult to conclude the clear linkage between the social group and economic marginalisation. - In some part of the state (Kinnaur etc.), ST households could be hiring labourers to collect fuelwoods and other forest resources for their domestic consumptions and other purposes. - In consideration of the above, compared to other states, a vicious cycle of forest degradation by forest dependent communities⁷ which is one of the key justifications of JICA forestry sector projects in India appears to be very limited in HP. Rather, necessity of improvements of forest conditions/ health without strong linkages with poverty, forest dependency, and forest degradation seems to be more relevant. |
| <p>3. Tendency that the JFM/PFM approach and livelihood activities closely related to JFM/PFM institutions are not fully applicable in HP (in comparison to other states)</p> | <ul style="list-style-type: none"> - In general, in HP, people and communities surrounding the forest areas already have some kinds of rights and access to forest areas and forest resources. This is more prevalent than in the other states. - Since benefits from the forest are available as their entitlement, JFM/PFM seen in other states will not always give incentives for forest resource management fo people and communities in the forest fringe areas. - In consideration of existing livelihood conditions of many, the kind of investment required to further improve on the livelihood situation could be significant and may not be feasible within the scope of the proposed Project. - In the case of NTFP based livelihoods, though not many are engaged in these days, potential can be seen in improving the post harvest technologies and ensuring sustainable harvesting methods. - The seasonal variations in livelihood vulnerability need to be looked into along with gender issues in grassland/ pasture utilisation. - Lahaul & Spiti with lack of forest and grassland, households need to procure their requirement from outside of the area. This increases further vulnerability of the households as their livelihoods options are limited since the area is remote and less accessible. |
| <p>4. Quantified data explaining increase of forest degradation is not fully available</p> | <ul style="list-style-type: none"> - As a general description, degradation of forest areas and their resources of the state are often raised. However, there is not much of detailed quantified data which indicate the changes in the status of forest degradation. - Rather forest cover is gradually increasing as per data and analysis from FSI data. - On the other hand, there are statistical data for illicit felling, forest fires, encroachment, etc. - HPFD recognises forests having crown density under 70% are eligible for forest improvement. Improvement of moderately dense forest (crown density 40%~70%) to higher crown density is one of priorities. However, forests site specific breakups of crown density within moderately dense forest are not fully available within HPFD. |
| <p>5. Nearly half of notified forest</p> | <ul style="list-style-type: none"> - Notified forest area in HP is 37,033km² and this represents 67% of total geographical area of the state. |

⁷ poor households having no alternative sources of livelihood other than forest resources and heavily relying on forest and forest resources for daily survival that have been regarded as the ones significantly impacting on the forest resources and thus caused further forest degradation.

| Issues and Features | Description |
|---|--|
| <p>areas in HP are without tree cover. 57% of notified forest area is not demarcated.</p> | <ul style="list-style-type: none"> - 44% of notified forest area (16,376km²) is without forest/ tree covers and dominated by the permanent snow or glacier (unculturable forest area). - According to the HP Forest Sector Policy and Strategy 2005, majority of these unculturable forest areas will continue to be managed as glaciers, permanent snow and alpine pastures. - Approximately 57% of notified forest area in the state (21,293km²: 38% of total state geographical area and 59% of notified forest area managed by HPFD) is either un-demarcated protection forest or un-classified forest and their boundaries are not demarcated. - Existence of many un-demarcated forests makes it difficult to detect forest offences/ encroachments and increase risks of conflicts and forest offences. |
| <p>6. Necessity for further biodiversity conservation and management in the state</p> | <ul style="list-style-type: none"> - The state is rich in fauna and flora. - There are 31 protected areas in HP. Approximately 15% of state's geographical area is under protected area (8,358 km²). Size and numbers of protected areas are in mass-scale. - However, some protected areas are isolated. - There are further needs for biodiversity conservation and management outside of protected areas (including human-wildlife conflict measures) . |
| <p>7. There were many externally aided projects and centrally sponsored schemes having similar activities</p> | <ul style="list-style-type: none"> - Many externally aided projects adopting JFM/PFM approach have been implemented in HP since 1990s. - Securing sustainability and continuity of these JFM/ PFM have benn the challage in most of the past interventions. - KfW project using the JFM/PFM approach is already implemented in Pangi/Bharmour sub-divisions under Chamba district, which divisions were proposed to be covered under this project. - Two World Bank projects are in-pipeline. Of these, one would mainly deal with treatment of stream bank and rainfed agriculture, whereas the other would mainly deal with improvement of forest areas. Shimla district and Pangi/Bharmour sub-divisions of Chamba district are overlapping with the proposed Project. |
| <p>8. Limitations in accessibility and activity period</p> | <ul style="list-style-type: none"> - Due to snow and other climatic factors, majority of proposed project areas (Lahul & Spiti, Kinnaur, Chamba, etc.) have seasonal limitations for undertaking various project activities (including livelihood activities) and access in and out. - Depending on the regions, field activities and travelling would not be feasible during winter (4-6 months in a year). - Remaining months of years are spent for livelihood and income generation activities. - In consideration of the above, time available for the proposed project interventions will be limited and tend to overlap with other existing activities. |
| <p>9. Tendency for longer duration required for raising seedlings</p> | <ul style="list-style-type: none"> - Majority of seedlings raised by HPFD require nursing period of two years and above. This is relatively longer period compare to other states in lower areas having nursing period of 3 months to 1 year. - Furthermore, the state promotes "tall plants" which require longer nursing period of 3.5 years and above to secure large seedlings. Most of species require a maximum of 3.5 years but some species such as <i>Fraxinus spp.</i> require around 5 years. - For project implementation, the duration required for seedling raising shall be taken into account for the implementation schedule. Also, this factor may limit total quantities of seedling which can be produced and total areas which can be taken up in the Project. |

Source: JICA Study Team (2017)

D-6 REVIEW OF DRAFT PROJECT REPORT (DPR)

6.1 Overview

The Study Team reviewed the data and relevant information to understand the basis for DPR. Although the availability of such data was limited, the results of DPR review revealed some shortcomings and the need for further confirmation of the data as well as the need to further restructure the project framework and approach in response to the conditions in the proposed project areas.

6.2 Project Needs and Rationale

Trends on increase in forest degradation as well as necessities of alternative livelihood options of forest dependent communities to reduce adverse impacts to forest areas /resources were not fully confirmed with sufficient justifications based on the quantified data during the Study. Likewise, in the other JICA forestry loan projects in India, the vicious cycle of forest degradation by poor forest dependent communities was one of fundamental assumptions described in DPR for the proposed Project. However, this assumption was not fully applicable and justifiable in the HP context. In this context, livelihood improvement components/ activities shall instead be designed to ease the seasonal vulnerability of the household economy in the context of sustainable forest resource use and management as a supporting component in the project.

Based on findings as well as analyses conducted during the Study, the modified project needs and rationale were confirmed and presented in **Part II, Chapter 3** of this report.

6.3 Project Objectives and Approaches

Overall goal, project objective, outputs, and approaches presented in DPR were in need of further elaboration to be more explicit. During the initial stage of the study narrative summary of the proposed Project was reviewed by HPFD and the Study Team. The latest project objective and approaches are presented in **Part II, Chapter 3** of the Final Report.

6.4 Overview of Component-wise Review of Proposed Project by HPFD

Based on the component structure of DPR and the restructured project framework by HPFD and JICA prior to the commencement of the Study, the review was done in the following aspects.

- | | |
|---|--|
| 1) Institutional Capacity Building including Orientation/ Sensitisation & General Preparedness (Preparatory Work) | 7) Research, Studies and Documentation |
| 2) Forestry (Department mode and JFM mode) | 8) Strengthening of ICT in HPFD |
| 3) Soil & Moisture Conservation | 9) Monitoring and Evaluation |
| 4) Livelihood Activities | 10) Project Management Unit (PMU) |
| 5) Wildlife Habitat Improvement | 11) Office Building for the Project |
| 6) Environmental Rehabilitation | 12) Consulting Service |
| | 13) Environmental and Social Consideration |

In general, descriptions of each activity and their work quantities (including region-wise work quantities) were not fully described in DPR.

D-7 ENVIRONMENTAL AND SOCIAL CONSIDERATION

7.1 Environmental and Social Consideration Framework in India

An analysis of ESC framework in India against JICA Guidelines as well as World Bank's safeguard policies was conducted in the Study. Overall, environmental and social safeguard

policies and related legislation in India do not deviate from the requirements of the JICA guidelines. Particularly, “Environment (Protection) Act, 1986 (and Amendment 1991)”, and “EIA Notification 2006 (and Amendments 2007, 2008, 2009, 2011 and 2012)” for environmental consideration and “The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013” for social consideration have been provided the solid legal foundation to avoid or minimise the negative impacts on environment and local communities, and to prevent the occurrence of unacceptable adverse impacts.

Ministry of Environment, Forest and Climate Change (MoEF & CC) is the highest body and central ministry in the country for regulating and ensuring environmental protection and supervision of environmental and forestry policies/programmes for the implementation. The Central Pollution Control Board (CPCB) under MoEF & CC at the union level and the State Pollution Control Boards (SPCB) at the state level together form the regulatory and administrative core of this sector. Department of Environment, Science and Technologies (DEST) is also a focal point in charge of environmental protection and pollution control under different relevant Act and Rules.

7.2 Baseline Information for Environmental and Social Consideration

Prior to commencement of any development projects, whether it requires an EIA or not, it is imperative to understand and identify the baseline levels of environmental and social parameters which might be affected as a result of the proposed Project or its sub-projects or activities. In this regard, social and natural environment as well as environmental pollution baseline data are described in Vol I Chapter 8.

PART II PROJECT

D-8 PRELIMINARY SITUATIONAL ANALYSIS OF THE POTENTIAL PROJECT AREA

8.1 Forest Cover

Division-wise forest cover based on ISFR2015 for divisions located in the prioritised project districts are summarised in the Table below.

Table 8.1.1 Division-wised Forest Cover of Divisions Located in the Prioritised Project Districts

| No. | Division | District | Total Area(ha) | Scrub (ha) | Open Forest (ha) | Moderately Dense Forest (ha) | Very Dense Forest (ha) | Total Forest Cover(ha) | Forest Cover% |
|-----------------------|----------------|----------|--------------------|-----------------|------------------|------------------------------|------------------------|------------------------|---------------|
| A) Territorial | | | | | | | | | |
| 1 | BILASPUR | Bilaspur | 116,739 | 14 | 16,706 | 17,098 | 2,363 | 36,168 | 31.0% |
| 2 | MANDI | Mandi | 82,026 | 83 | 13,100 | 12,129 | 6,383 | 31,612 | 38.5% |
| 3 | NACHAN | Mandi | 61,951 | 18 | 8,343 | 16,167 | 12,811 | 37,321 | 60.2% |
| 4 | SUKET | Mandi | 92,074 | 1,173 | 11,208 | 10,450 | 3,003 | 24,661 | 26.8% |
| 5 | KARSOG | Mandi | 60,212 | 1,569 | 11,212 | 12,434 | 4,128 | 27,775 | 46.1% |
| 6 | JOGINDERN AGAR | Mandi | 65,750 | 3 | 6,591 | 11,940 | 3,831 | 22,362 | 34.0% |
| 7 | KULLU | Kullu | 115,662 | 326 | 16,006 | 24,800 | 7,975 | 48,781 | 42.2% |
| 8 | PARVATI | Kullu | 94,456 | 649 | 12,805 | 14,053 | 11,504 | 38,362 | 40.6% |
| 9 | BANJAR | Kullu | 35,691 | 164 | 4,648 | 7,611 | 8,953 | 21,212 | 59.4% |
| 10 | ANNI | Kullu | 71,459 | 484 | 9,479 | 12,299 | 9,158 | 30,936 | 43.3% |
| 11 | LAHAUL | Lahaul | 657,485 | 971 | 14,481 | 3,111 | 1,466 | 19,058 | 2.9% |
| 12 | KINNAUR | Kinnaur | 569,040 | 6,869 | 23,166 | 22,058 | 6,498 | 51,722 | 9.1% |
| 13 | SHIMLA | Shimla | 8,980 | 1,351 | 11,695 | 13,188 | 6,453 | 31,336 | 45.4% |
| 14 | THEOG | Shimla | 67,035 | 211 | 6,936 | 12,023 | 8,634 | 27,594 | 41.2% |
| 15 | ROHRU | Shimla | 158,907 | 469 | 18,235 | 32,193 | 17,655 | 68,083 | 42.8% |
| 16 | CHOPAL | Shimla | 81,096 | 406 | 9,637 | 18,989 | 12,471 | 41,097 | 50.7% |
| 17 | KOTGARH | Shimla | 27,329 | 16 | 3,009 | 5,359 | 4,632 | 13,000 | 47.6% |
| 18 | RAMPUR | Shimla | 81,942 | 470 | 9,289 | 14,635 | 15,597 | 39,521 | 48.2% |
| Total of Above | | | 2,507,835.1 | 15,249.4 | 206,545.9 | 260,537.9 | 143,514.4 | 610,598.1 | 24.3% |
| B) Wildlife | | | | | | | | | |
| 1 | Kullu WL | Kullu | 123,066 | 124 | 8,290 | 11,360 | 10,303 | 29,953 | 24.3% |
| 2 | GHNP | Kullu | 124,517 | 567 | 10,576 | 12,772 | 14,482 | 37,830 | 30.4% |
| 3 | Spiti WL | L&S | 736,648 | 1,737 | 61 | - | - | 61 | 0.0% |
| 4 | Sarahan WL | Kinnaur | 96,265 | 432 | 4,336 | 7,509 | 7,464 | 19,309 | 20.1% |
| 5 | Shimla WL | Shimla | 5,640 | 1,737 | 61 | - | - | 61 | 0.0% |
| Total of Above | | | 1,086,136.0 | 2,860.4 | 23,859.9 | 34,407.2 | 34,122.1 | 92,389.2 | 8.5% |
| Grand Total | | | 3,593,971.1 | 18,109.8 | 230,405.8 | 294,945.1 | 177,636.5 | 702,987.3 | 19.6% |

Note: for Shimla WL division only areas fall into proposed project districts are compiled.

Source: Compiled by JICA Study Team (2017) based on ISFR 2015 and information from HPFD

Divisions where dry alpine pastures are dominant (i.e. the alpine zone) tend to have lower forest cover ratio than other divisions (i.e. the non-alpine zone) due to their higher altitude. The forest cover ratios are extremely low in Spiti wildlife division, Lahaul division, and Kinnaur division, which are 0.0%, 2.9%, and 9.1%, respectively. On the other hand, the forest cover ratio of GHNP division and Bharamour division exceed 30% even though these divisions are located in the alpine zone.

In the non-alpine zone, most of divisions have the forest cover ratio exceeding 30% and except for Suket division which only have 26.8%. Majority of divisions have forest cover ratio ranging from 40% to 60%.

8.2 Major Ecosystems

Brief description of the ecosystem (vegetation) type in the divisions concerned are presented in the Table below.

Table 8.2.1 Description of Ecosystem Types in Project Districts Proposed by HPFD

| Ecosystem/ Vegetation Type | Description |
|----------------------------------|--|
| Tropical Moist Deciduous Forest | Only found in Shimla and Theog divisions covering areas of 855 ha, whereas presence of the forest-type group is 2,560 ha in Shimla wildlife division. |
| Tropical Dry Deciduous Forest | 30,111ha visible in 12 territorial divisions (Bilaspur, Suket, Theog, Karsog, Shimla, Chopal, Rampur, Mandi, Kotgarh, Anni, Jogindernagar and Nachan). Bilaspur division has the most cover and almost two-third of the total area (20,300ha) in territorial divisions under this forest-type group. In wildlife divisions, Kullu wildlife division (450ha) has this forest-type group. |
| Sub-Tropical Pine Forest | This is the second dominating forest-type group and has a total of 71,223 ha (70,310 ha in 18 territorial divisions and 913ha in four wildlife divisions) in the prioritised project district areas. The top six territorial divisions (Karsog, Theog, Bilaspur, Suket, Shimla, Mandi) cover more than 75% of the area. |
| Himalayan Moist Temperate Forest | This is the most dominating forest-type group and a total of 377,578 ha (339,449 ha in territorial and 38,029 ha in wildlife) is found in all of the prioritised project district areas except in Spiti wildlife division. Nine divisions (Chopal, Jogindernagar, Rohru, Nachan, Kullu, Parvati, Rampur, Kullu wildlife and Mandi) have more than 20,000ha of this forest-type group within their divisions and total area covering around 71% of this forest-type group. |
| Himalayan Dry Temperate Forest | This is the third dominating forest-type group and a total of 71,057ha (60,298 ha in territorial and 10,759ha in in wildlife divisions) is found in the prioritised project district areas. This forest-type group is found in all of five wildlife divisions and 13 territorial divisions, but not in Bilaspur, Mandi, Nachna, Suket and Theog divisions. |
| Sub-alpine Forest | This forest-type group has a total of 47,575 ha (41,673 ha in 11 territorial divisions and 5,902ha in four wildlife divisions) in the prioritised project district areas. Top five divisions (Rohru, Kinnaur, Kullu, Parvati and Kullu wildlife) have more than 3,000 ha of this forest-type group within divisions and contribute to about 80% of total area under this forest-type group. |
| Moist Alpine Forest | This forest-type group has a total of 6,501 ha (5,220 ha in 9 territorial divisions and 1,281ha in four wildlife divisions) is in the prioritised project district areas. Top six divisions are Kullu, Parvati, Kullu wildlife, Rampur, Anni, and Rohru divisions which contribute about 88% of the total area. |
| Dry Alpine Forest | This forest-type group has a total of 24,408 ha (19,037 ha in 9 territorial divisions and 5,371ha in four wildlife divisions) is in the prioritised project district areas. The three largest divisions (Kinnaur, Kullu, and Spiti wildlife), have more than 2,000 ha and accounts for 80% of this forest type group is found in these districts |
| Dry Aline Pasture | The dry alpine pasture has a total of 707,708 ha (470,564 ha in 10 territorial divisions and 237,143ha in five wildlife divisions) in the prioritised project district areas. The dry alpine pasture is dominated in three divisions (Kinnaur: 205,065ha, Lahaul: 162,185ha, Spiti wildlife: 115,741ha), which covers about 75% of the area. Four other divisions (GHNP, Saharan wildlife, Rohru, and Kullu wildlife) have the dry alpine pasture exceeding 20,000ha. These nine divisions account for about 95% of the dry alpine pasture found in these districts. |

Source: Compiled by JICA Study Team (2017) based on IFSD 2015 and information from HPFD

8.3 PFM/JFM

According to the data supplied from the project divisions, 491 JFMCs with the total number of 19,027 members have been formed under FDA between 2000 and 2011, out of which, 197 JFMCs are reported to be active. The average number of members in divisions ranges between 8

and 180, with the total average of 39 members.

Across nine divisions, 275 Gram Panchayats were identified suitable for the PFM mode operation. The total treatable area under PFM mode was estimated to be 4,961 ha. In Kinnaur, substantial area of grass land is available for treatment along with the areas for ANR.

The proposed project intends to work with wards which is the lower unit of Gram Panchayat under PRI. There are for 4,599 wards in the proposed project divisions. Thus, the number of wards to be selected from each project range may need to be limited taking into consideration of the scale of the treatment areas, which in other wards affects the effectiveness of the treatment and has an implication on the project operational cost.

8.4 Wildlife and Biodiversity

Protected Area

Questionnaire survey was conducted with 22 protected areas in seven proposed project districts by HPFD, and ten answers (45.5%) were returned. The current status of respective wildlife divisions such as facilities, human-wildlife conflict, endangered fauna and flora, and ecotourism activities are briefly summarized in **Table 8.4.1**.

Table 8.4.1 Current Status of Wildlife Divisions of Prioritised Project Districts

| Wildlife Division | Shimla | Sarahan | Spiti |
|--|-------------------------------|---|---|
| Protected Areas included | SWC Dhali, SWC Chail, Tharoch | Dharanghati, Lippa Asrang, Rakchham Chhitkul, Rupi Bhaba | Chandertal, Kibber, Pin Valley NP |
| Interpretation Centre | No | No | 1 in Kibber |
| Veterinary Care Centre | No | Sarahan Pheasantry | No |
| Tranquilization equipment | 2 in Tharoch | Yes in division office | 1 in division office |
| Camera traps | 4 each in respective PAs | 24 in division office, 2~28 in respective PAs | Yes |
| Audio-Visual equipment | No | 8 in division office, 8~17 in respective PAs | No |
| GPS | 5 in total | 13 in division office, 1~10 in respective PAs | Yes |
| 4WD vehicle | 0 | 1 in division office | 1 in division office |
| Motor bike | 2 in total | 3 in division office | No |
| Bicycle | 66 in total | no | No |
| Human-wildlife conflict | 0 | Sporadic, black bear, snake | Ibex damages agriculture crops of adjoining villages, crop raiding. Snow leopard sometimes prey on domestic animals |
| Issues of endangered fauna and flora | 0 | Tragopan, Musk Deer, Serow | Medicinal plants exploitation, pastures land competition between domestic animals & wildlife, prey spp of snow leopard. Spread of communicable diseases |
| Existing measures for endangered fauna and flora | 0 | Tragopan Conservation breeding Programme, Development of anti-poachers, Provision of watch-towers and law training for staff. | Protection by staff, educating the local population. Pasture improvement, moisture improvement, awareness & vaccination with the help of line department. |
| Habitation and usage of PA by people | 0 | Debarred, accordingly to notification issued during 2013 | In fringe areas for pasture, medicinal plant collection. migratory graziers. |
| Eco-development | 0 | Nil | Bunkers, tracking & traditional |

| Wildlife Division | Shimla | Sarahan | Spiti |
|--|--------|--|--|
| work | | | routes |
| Eco-tourism | 0 | Eco – tourism Society of circle level is under formation | Trekking routes to Baralachha & Leh. |
| No. of nature camps organized in 2016-17 | 0 | 10 in total | 9 in total |
| No. of eco-clubs exist | - | - | 1 Senior Secondary School each in respective PAs |
| No. of cases of timber poaching in 2016-17 | 0 | 2 | - |

Source: Compiled by JICA Study Team (2017) based on questionnaire survey by the Team

Human-Wildlife Conflicts

The tendency of the human-wildlife conflicts is as follows.

- ◆ The human-wildlife conflicts seem to be more prevalent in low to mid elevational districts/divisions in HP which are more populated in comparison to districts/divisions which are in higher elevation with less population density
- ◆ Compared to territorial divisions, there seem to be less human-wildlife conflicts in wildlife divisions which include protected areas. This is because local livelihood and livestock are not expected in the protected areas thus chances of conflicts are much less than those outside protected areas.

The incidences of human wildlife conflicts identified from the Livelihood Survey indicated that the damage was caused by monkeys and mostly on crops. Bears were also identified as a cause of crop damage in the JFM areas and wild boar in Bilaspur and Mandi. Damages to the household properties are reported by one household in Kotgar (non JFM/ parrot) and 2 households in Rampur (non JFM/ rat) and Theog and one grassland users/ semi-nomadic household from Parvati (non JFM/ wild boar). Loss of domestic animals were reported by 8 households of the JFM villages and by 4 households amongst the 59 grassland users/ semi-nomadic households. The compensation was received by one household in Kinnaur for the loss of domestic animals for the amount of INR 16,000. No incidences of human injuries were reported by the surveyed households however, a few households indicated that female adults and female children were affected by the wild life.

8.5 Forest Products and Markets

Timber and Fuelwood

Timber and fuelwood are the major forest products in the project area. The HP State Forest Development Corporation Limited has been assigned with the responsibility of harvesting and sale of timber and fuel wood as per the directions of HPFD. Since there is a ban on green felling, the Corporation undertakes salvage operations for the dry, diseased, damaged and uprooted trees handed over to the Corporation by HPFD

Sale of fuel wood to non-right holders in the state is managed by the Corporation through 42 timber/fuel wood depots. Since 1992, the Corporation has been supplying fuel wood to HPFD to meet the requirement of local people as well as the government departments. The fuelwood depots in tribal areas are managed by HPFD. During 2010-11 to 2014-15, the Corporation

supplied fuel wood worth 273 million INR⁸ to HPFD for meeting the requirements in tribal areas.

NTFPs

A wide range of NTFPs are available in all 7 proposed project districts by HPFD in Chamba, Lahaul and Spiti, Kullu and Mandi, which are the important districts for production of high altitude medicinal plants. Although the production/ outturn of high altitudinal medicinal plants has significantly declined, there is a potential to regenerate the resource base and enhance the production of these medicinal plants both from the forest and non-forest areas. **Table 8.5.1** presents the important NTFPs from the project area.

Table 8.5.1 NTFPs Procured and Traded in the Proposed Project Districts

| District | NTFPs currently traded | NTFPs under cultivation | Value addition of NTFPs |
|----------------|---|--|---|
| Bilaspur | Resin, Katha, Myrabolans, Pine Needles | Myrobolans and aloe vera | HP State Forest Development Corporation runs a resin processing unit in Bilaspur. |
| Chamba | Pathan Bel, Muskbala, Revandchini, Patlain roots, Bhutkesi, Kapurkachri, Guchhi, Bankakri, Moss Grass, Dhoop, Nagchhatri, Rhododendron flower, Atis/Patis, Birmi, Ban Lahsun, Kadu etc. | Atis, Bankakri, Kadu, Muskbala, Nagchhatri, Kalajeera | |
| Lahaul & Spiti | Kalajeera, Dhoop, Atis/Patis, Artemisia, Kuth, Kadu, Ban-ajwain, Puskarmool, Seabuckthorn, Bankakri, Guchhi | Kuth, Seabuckthorn, Puskarmool, Atis, Bankakri and Kadu | Seabuckthorn Society has set up a pulp processing unit in Lahaul. |
| Kinnaur | Neoza, Dhoop and Somlata are the important ones. Small quantities of Juniper, Taxus leaves, kala jeera, Lichens(Chhadila), Kadu, Singli-Mingli are also available. | Atis/ Patis, Bankakri, Kadu, Salampanja | |
| Kullu | Kadu, patish, ban kakri, guchhi, rakhal, lichens, berberis roots, reetha, kakar singhi, jatamansi | Atis/ patis, bankakri, kadu, kuth, chora, rakhal, belladonna, valeriana, ratanjot, nagchhatri, ban lahsun, seabuckthorn, hath panja | Aromatic oils from cedar wood, tagetes and others. processing of dhoop. herbal medicines from different NTFPs |
| Mandi | Berberis roots, tejpatta, rhododendron flower, ban haldi, kail cones, kunish cones, cedar rosettes, ritha, green moss grass, lichens, guchhi, resin, pine needles, nirgal etc. | Rakhal, valeriana, kuth, kutki, belladonna, myrabolans, chirayata, aswagandha, aloe vera, safed musli, tulsi, berberis, horse chestnut | Processing of berberis roots in small quantities, aromatic oils from cedar wood, costus, tegetes, bach, valeriana, kapur kachri, juniper etc. |
| Shimla | Resin, kadu, lichens, kuth, guchhi, khanor, wild pomegranate, Marigold etc. | | |

Source: JICA Study Team (2017)– compilation of information from interaction with different stakeholders, from Annual Reports, Working Plans of HPFD etc.

Farm Forestry and Social Forestry

Poplar, willow, khair, bamboo etc. are some of the species planted by the farmers in their own land in some of the project areas. Farm forestry as commercial farming is not a common practice of farmers in the major part of HP. Poplar and willow were traditionally being planted in the cold arid regions of the state – Lahaul & Spiti and Kinnaur to meet the fuel, fodder and small timber requirements. Willows grow near the tree line, where other vegetation does not exist and people in Lahaul consider it to be the life line for meeting the fuel, fodder and small timber needs.

In comparison to farm forestry, orchard development is very common in the project area, especially in Shimla, Kinnaur, Kullu, Mandi, Lahaul & Spiti and Chamba districts. People, in

⁸ GoHP (2016). Report of CAG of India on Public Sector Undertakings (Economic Sector) for the year ended 31st March 2015.

general, do not want to lock up their land for planting forestry species, which has long gestation period and is not as remunerative as horticulture & off-season vegetables. The average operational holding is less than 1 ha, which is another reason for poor adoption of farm forestry by the people in the project area.

8.6 Livelihood Socio Economic Characteristics

The following information is based on: i) livelihood survey based on household interviews conducted with 400 households, and ii) rapid field assessment using PRA and gender analysis tools undertaken in the selected communities selected from the proposed project districts.

Socio-economic Background: 57.3% of the survey households reported to hold the above poverty line (APL) card while 34.2% hold the below poverty line (BPL) card. Slightly higher proportion of the households are holding BPL status in the graziers/ grassland users' community.

Social Groups: 89.0% of the survey households were Hindus, 5.1% Buddhists and 4.4% Muslims. The general category households constitutes 35.3% and STs accounting for 35.1% of the total sampled households. Amongst the graziers and grassland users, 50% of the households belong to STs.

Demographic Characteristics: The total population of the 400 survey households was 2,130 persons with an average family size of 5.3 persons per family and the same is slightly bigger amongst the graziers/ grassland users as it was recorded as 6.0 persons per household.

Education and Literacy: Amongst the 6 years and above population, 15.4% was non-literate (9.0% of male population and 22.2% of female population). Non-literacy rate was higher among the graziers and grassland users. The number of non-literate women increases among those among those beyond the age of 40 years whereas the same for men tends to increase among the slightly older age groups. 66.4% of above 18 male population and 51.6% of women the women of above 18 in the survey villages attained the education of 8th standard and above. Gender wise, slightly lower proportion of women received formal education.

Means of Livelihoods: Livelihood pattern in the surveyed villages can be summed up as agriculture/ horticulture + salary/ wage. All the village households adopt multiple livelihood strategies to earn their living. Many women may be engaged with wage work and income generation activities like handicrafts or handloom.

Income and Expenditure:

The annual income earned between April 2016 and March 2017 was asked. Out of 400 households, 41 households did not respond on this query. The average annual income of the survey households was estimated to be INR 204,126 with the median of 120,000. The maximum income was INR 2,100,000 and minimum was INR 1,500. The average income level of the territorial divisions was 62.5% higher than that of the graziers/ grassland users. The female headed household earned significantly lower than that of male headed households. In the territorial divisions, 48% less in JFM areas.

The average household expenditure was estimated to be 161,318 INR for territorial divisions and

232,496 INR for the graziers/ grassland users with the median of INR 105,300. Expenditures are high in food, farm inputs, education for children and maintenance of house. Among the graziers/ grassland users, the expenditure on fodder was high in some parts of survey areas.

Seasonality of the Livelihood

Across all areas except Bilaspur, winter (November – April) is the most challenging season of the year. Most households prepare for winter by stocking fuelwood, fodder and food. Sometimes rations run out but in such cases, neighbours help each other. They overcome such difficult situation through mutual help. Winter is also the season that most livelihood activities halt.

8.7 Forest Uses

Household Energy: The households in the surveyed villages use multiple sources of household energy including LPG, fuelwood, electricity, solar energy, and dried animal dung. Due to the power cuts during winter and erratic supply and high cost of LPG cylinders, village households still use fuelwood. It was also one of the preferred energy source for cooking and warming the house. In the areas where the electricity was available, induction cookers and electric heaters were occasionally used.

Grazing/ Fodder/ Pasture Management: Commonly owned livestock amongst the survey households included cow, goat, sheep, and ox. Buffalo was also owned mostly amongst the graziers/grassland users with an average holding of 25.3 while about 50% of the respondents in Bilaspur division owned 1.4 buffaloes on an average. Cow was owned by 60% of the total survey households with an average holding of 1.5. The number of goats owned by the households varies between 1-150 and graziers could have as many as 150 goats. The sheep is also owned in a large herd ranging between 2 – 90. The graziers were indeed has 37 sheep on an average. Nearly all the animals were grazed during summer either in the nearby government forest area or in the agriculture field and stall fed during the winter seasons. The average duration of grazing in the forest area including pastures was 7.0 months.

8.8 Gender and Community Forest Management

General: A clear gender division of labour was seen. Women would look after family and production of food crops for the family whereas men would carry out the heavy work in the farm and work outside of home or village to earn cash income. The gender gap in wages was evident. Most women would stay at home and when needed, they take part in MGNREGS and other works near home which wages would not be as high as that is earned by men from outside.

Ownership of Household Assets: Women in all the surveyed villages did not own land except widows. All the land was registered under their spouses' name. Gold jewellerys were considered to be women's property but require the spouse or in-laws consent when in need of encashment.

Forest Resource Use and Management: In almost all the surveyed villages, women were the primary collector of the fuelwood and fodder from the forest area. Grazing was likewise mostly done by women in the surveyed villages. Women were aware of the NTFPs that they collected

and NTFPS to be collected were decided through the discussions with men, which suggests that the men may have the control over the marketable NTFPs while women may not. In the surveyed villages, not much of the forest management activities were undertaken. One of the common activities was firefighting and reporting of the illicit felling to FD. In many places where it was done, it was largely by women as most men are working outside of the village during the day. If men were in the village, they would help. The survey findings also suggested that women were not much aware of JFMC or VFDS whereas Mahila Mandal were well recognised and in some places were engaged in the social forestry and taking charge of watching to prevent illicit felling.

PART II PROJECT

Part II: Main Text

CHAPTER 1 PROJECT AREA PRIORITISATION AND PRIORITISED PROJECT AREAS

1.1 Project Areas Proposed by HPFD

As per the agreement made between JICA and HPFD prior to the commencement of the JICA study, a total of seven districts within HP (in case of Chamba district, only Bhramour and Pangi sub-divisions were included.) were considered as districts for the proposed project area (proposed project districts). In the proposed project districts, there are 20 territorial forest divisions and 22 protected areas controlled by 6 wildlife divisions. Details of forest divisions and protected areas within the proposed project districts are described in **Table 1.1.1**.

Table 1.1.1 Forest Divisions and Protected Areas within Proposed Project Districts

| District | Area (Km ²) | Territorial Forest Divisions | | Controlling Wildlife Division | | Protected Area (PA) (NP: National Park, WLS: Wildlife Sanctuary) | | Remarks |
|----------------------|-------------------------|------------------------------|---|-------------------------------|--|--|--|--|
| | | No. | Name | No. | Name | No | Name | |
| Bilaspur | 1,167 | 1 | Bilaspur | | | 0 | | |
| Mandi | 3,950 | 5 | Mandi Nachan Suket Karsog Jogindernagar | 1 | Kullu Wildlife | 3 | Bandi WLS Nargu WLS Shikari Devi WLS | |
| Kullu | 5,503 | 4 | Kullu Parbati Banjar (Seraji) Anni | 2 | Kullu Wildlife | 7 | Kais WLS Kanawar WLS Khokhan WLS Manali WLS Inderkila NP | Some part of Nargu WLS falls in Kullu District* |
| | | | | | Great Himalayan National Park | | Great Himalayan NP Khirganga NP | |
| Lahaul & Spiti | 13,841 | 1 | Lahaul | 1 | Spiti Wildlife | 3 | Pin Valley NP Chandra Tal WLS Kibber WLS | |
| Kinnaur | 6,401 | 1 | Kinnaur (Rekong Po) | 1 | Sarahan Wildlife | | Lippa Asrang WLS Rakchham-Chitkul WLS Rupi-Bhaba WLS | |
| Shimla | 5,131 | 6 | Shimla Theog Rohru Chopal Kotgarh Rampur | 2 | Sarahan Wildlife | 3 | Daranghati WLS | Chali WLS & Majathal WLS fall in to Shimla District* |
| | | | | | Shimla Wildlife | | Shimla Water Catchment WLS Talra WLS | |
| Chamba (Bhramour) | 6,522 1,818 | 2 | Bhramour | 1 | Chamba Wildlife | 2 | Kugti WLS Tundah WLS | Total 5 territorial divisions in District (Chamba, Dalhousie, Salooni) |
| (Pangi) | 1,601 | | Pangi | 1 | Chamba Wildlife | 1 | Sechu-Tuan Nalla WLS | |

Note: * not counted in number of PAs in this district

Source: Prepared by JICA Study Team (2017) based on information from HPFD

1.2 Prioritised Project Areas

1.2.1 Project Area Prioritisation Criteria

For prioritisation of proposed project areas at division level as well as range level, the study team propose the following four steps, and selection process/ criteria are summarised in **Table 1.2.1**.

Step 1: Exclusion

Step 2: Prioritisation of the Potential Project Areas/ Ranges

Step 3: Re-Prioritisation based on Overall Project Implementation Efficiency

Step 4: Adjustments reflecting the World Bank Forests for Prosperity Project

Table 1.2.1 Selection Process and Criteria

| Selection Process | Criteria | Description | Unit | |
|--|---|---|-----------------|--|
| Step 1: Exclusion | 1.1.1 On-going project/ schemes with similar interventions | | Division/ Range | |
| | 1.1.1: KfW | - Pangi and Bharamour divisions to be excluded. - Ranges of Chamba wildlife division (Sechu-Tuan Nalla WLS, Kugti WLS, and Tundah WLS) which can be only accessible from the above two territorial divisions to be excluded | Division | |
| | 1.2 No Potential Intervention Areas | | | |
| | 1.2.1 No Potential Intervention Areas | - Excluded protected areas which have more than 80% of their areas located at the elevation of 4,500 m and above. - Protected areas tend to have low road accessibility and also above 4,500m, even the dry alpine pasture are hardly existing and not effective to cover such areas from the project intervention point of views. | Range | |
| | 1.2.2 Others | - Exclude Shimla urban division which is currently under the jurisdiction of the Shimla municipal cooperation and its working plan has not been prepared since 1980s. | Division | |
| | - From the above, Pangi division Bharamour divisions, Ranges of Chamba wildlife division (Sechu-Tuan Nalla WLS, Kugti WLS, and Tundah WLS), ranges of Spiti wildlife divisions (Kibber WLS, Pin Valley NP) were excluded. | | | |
| Step 2: Prioritisation of the Potential Project Areas/Range | 1.Forest Degradation Level based on ISFR 2015 | - Interpreted by (Open Forest (OF) Area + Scrub Area) / (OF Area +Scrub Area +Moderately Dense Forest (MDF) Area +Very Dense Forest (VDF) Area) - Score ranging between 0 to 1 was given for each range. | Range | |
| | 2 Pace of Forest Degradation between ISFR 2015 and ISFR 2003 | - Forest Degradation Level ISFR2015 - Forest Degradation Level ISFR 2003 - Negative change interpreted as improvement in degradation and positive change interpreted as increase in degradation - Score ranging between 0 to 1 was given for each range. | | |
| | 3 Potential Immediate Intervention Area against Total Scrub/OF/MDF Areas | - Based on the pixel analysis of ISFR 2015 and ISFR 2011 data, pixel base change of forest cover were identified. - Areas (pixels) either gained or loss to became scrub/ OF and gained to become MDF are assumed as potential immediate intervention areas among the forest cover in the respective range. - Range-wise percentage of potential immediate intervention areas was calculated. - Score ranging between 0 to 1 was given for each range. | | |

| Selection Process | Criteria | Description | Unit |
|---|---|--|-------|
| | 4 Biodiversity Richness | - Range-wise percentage of biodiversity richness index ¹ was calculated. - Score ranging between 0 to 1 was given for each range. | |
| | 5 Area Contiguity of VDF/ MDF/ OF/ scrub areas (Potential Treatment Areas) | - Range-wise patch number and areas for VDF/MDF/OF/scrub are calculated and average patch size was calculated. - Average patch size was interpreted as area contiguity of forest cover and score ranging between 0 to 1 was given for each range. | |
| | 6. Pasture/ Grassland Area | - Range-wise percentage of grassland/ pastures was calculated. - Score ranging between 0 to 1 was given for each range. | |
| | 7. Forest Fire Risk | - Range-wise percentage of forest fire risk area (high risk area, medium risk area, low risk area, non-sensitive to fire area) was calculated - Score ranging between 0 to 1 was given for each range. | |
| | 8. Similar Interventions by Ongoing Projects | Fore territorial ranges only: - Ranges which has similar interventions by on-going projects/ schemes implemented were identified. - Based on numbers of similar interventions, score ranging between 0 to 1 was given for each range. | |
| | 9. Feasible Altitude for Interventions | - Range-wise distribution of altitude was calculated - Percentage of areas below 4,500m was identified and score ranging between 0 to 1 was given for each range. | |
| | 10 Accessibility | - Range-wise road density was calculated. - Score ranging between 0 to 1 was given for each range. | |
| | 11. ST/SC Population Rate | - Based on location of revenue villages, range wise ST/SC population was estimated - ST/SC population rate was calculated and score ranging between 0 to 1 was given for each range. | |
| | 12. Female Illiteracy rate | - Based on location of revenue villages, range wise female literacy rate was estimated - Female illiteracy rate was calculated and score ranging between 0 to 1 was given for each range. | |
| | <p>Prioritisation for Territorial Ranges: - Total scores for the above 12 parameters were averaged and ranged exceeding the score of 0.4 was prioritised</p> <p>Prioritisation for Wildlife Ranges: - Total scores for the above 11 parameters were averaged and ranges exceeding the score of 0.4 was prioritised. - However, since none of ranges in Trans Himalaya region scored above 0.4, ranges which is more than median score of the region were prioritised</p> <p>Based on the above process, 60-70% of ranges from the Step 1 are prioritised for each bio-geographic regions (Shivalik, North Western Himalayan, Trans Himalaya, Western Himalaya).</p> | | |
| Step 3: Re-Prioritisation based on Overall Project Implementation Efficiency | <p>- Although the Step 2 provide prioritisation of project ranges, re-prioritisation or adjustment may be required in the following aspects.</p> <ul style="list-style-type: none"> • Range (s) isolated from other project prioritised ranges and revisiting based on accessibility and project management efficiency. • Range (s) isolated from other project prioritised ranges and revisiting based on project impacts. | | Range |

¹ Biodiversity Characteristics at Landscape Level: National Assessment 2012, Indian Institute of Remote Sensing (IIRS)

| Selection Process | Criteria | Description | Unit |
|---|----------|--|-------|
| | | <p>In consideration of the objective of the Component 2, especially of the community based biodiversity management, the following two protected areas area isolated from other project prioritised ranges and evaluated to be less effective to be as project prioritised ranges, thus removed.</p> <ul style="list-style-type: none"> - Lippa Asrang WLS (Lippa Range in Kinnaur district) - Rakchham Chitukul WLS (Sangla Range in Kinnaur district) <p>- Furthermore, re-prioritisation or adjustment where considered in the following aspects taking into account of the project management/ cost efficiency. 11 ranges have been removed from prioritisation.</p> <ul style="list-style-type: none"> • Prioritised division only having one prioritised range to be removed from prioritised project area (Nachan, Kotagarh, and Rampur divisions) • Number of total prioritised ranges within a division to be maintained four at maximum (ranges have been removed from prioritisation at Suket, Kullu, Kinnaur, Jogindernagar and Chopal divisions) | |
| Step 4: Adjustments reflecting the World Bank Forests for Prosperity Project | | <ul style="list-style-type: none"> - The World Bank's "Forests for Prosperity Project" has been officially approved and an opening ceremony for the project was held on 11 October, 2017. - On 27 October, 2017, prioritised ranges for the Forests for Prosperity Project has been identified between the World Bank and HPFD. 12 ranges have overlap with the prioritised ranges for proposed JICA Project. - Then after, adjustments for prioritised ranges have been made among, the World Bank, HPFD and JICA. | Range |
| | | <ul style="list-style-type: none"> - Based on the discussions among three parties, the following adjustments are made: <ul style="list-style-type: none"> • Kalpa range (in Kinnaur division) to be covered by the World Bank project • Instead, Pooh range (in Kinnaur division) to be covered by the proposed JICA Project | |

Source: JICA Study Team (2017)

To avoid the duplication of efforts, the Study Team proposes to first exclude the areas where similar interventions are being implemented at the time of the prioritization. Furthermore, areas at high elevation (under permanent snow, glaciers, above forest limits, etc.) where the implementation of the project interventions would not be practical would be proposed to be excluded.

By adopting the process of the Step 2 and Step 3, the Study Team, having discussions with HPFD, has attempted to arrive at the indicative divisions, ranges and protected areas as prioritised divisions, ranges and protected areas for the Project.

The Step 4 has been added at the end of October 2017, reflecting the development of the World Bank's Forests for Prosperity project.

Table 1.2.2 described the prioritised divisions, ranges and protected areas based on the above mentions prioritisation processes.

The Study Team, with discussions with HPFD, has attempted to arrive at the indicative divisions, ranges and protected areas which are listed in **Table 1.2.2** by adopting the process up to the Step 2 indicated in **Table 1.2.1**.

As a result, a total of 14 territorial forest divisions (49 ranges) and two wildlife divisions (4 protected areas and 2 wildlife ranges) remained as the prioritised project area. A map describing indicative divisions, ranges and protected areas is presented in **Figure 1.2.1**.

Table 1.2.2 Indicative Prioritised Divisions, Ranges and Protected Areas

| District | Territorial Forest Divisions | | Wildlife Division | Protected Area (PA) or Wildlife Range |
|----------------|------------------------------|-------------------------------|-----------------------------|--|
| | Name | Ranges | | |
| Bilaspur | Bilaspur | - Sadar - Swarghat | - Ghumarwin - Jhandutta | |
| Mandi | Mandi | - Drang - Kataula | - Kotli - Mandi | - Bandli WLS (Sundarnagar Range) |
| | Suket | - Baldwara - Jaidevi | - Sarkaghat - Suket | |
| | Jogindernagar | - Dharpur - Joginder Nagar | - Ladbharol - Kamlah | |
| Kullu | Kullu | - Kullu - Manali | - Patalikuhah - Bhutti | - Kias WLS (Manali Range) - Khokhan WLS (Kullu Range) - Manali WLS (Manali Range) - |
| | Parbati | - Bhuntar - Hurla | - Jari - Kasol | |
| | Banjar (Seraji) | - Sainj | - Tirthan | |
| | Anni | - Arsoo | - Nither | |
| Lahaul & Spiti | Lahaul | - Pattan, | - Keylong | - Kaza Wildlife Range - Tabo Wildlife Range |
| Kinnaur | Kinnaur | - Bhabanagar - Pooh | - Nichar - Malling | |
| Shimla | Shimla | - Dhami - Koti | - Mashobra - Taradevi | |
| | Theog | - Balson - Kotkahi | - Theog | |
| | Rohru | - Jubbal - Saraswatinagar | - Khashdhar - Dodra Kwar | |
| | Chopal | - Bamta - Chopal | - Nerwa - Sarain | |
| Total | 14 | 49 | 2 | 4 Protected Areas 2 Wildlife Ranges |

Note: Underlined ranges are isolated from other prioritised ranges and may require further considerations from the implementation efficiency point of view.

Source: JICA Study Team (2017)

Although the abovementioned divisions and ranges have been prioritised for the Project, further prioritisation may be required in consideration of the project implementation efficiency/ effectivity as well as project scales (work quantities, costs, etc.).

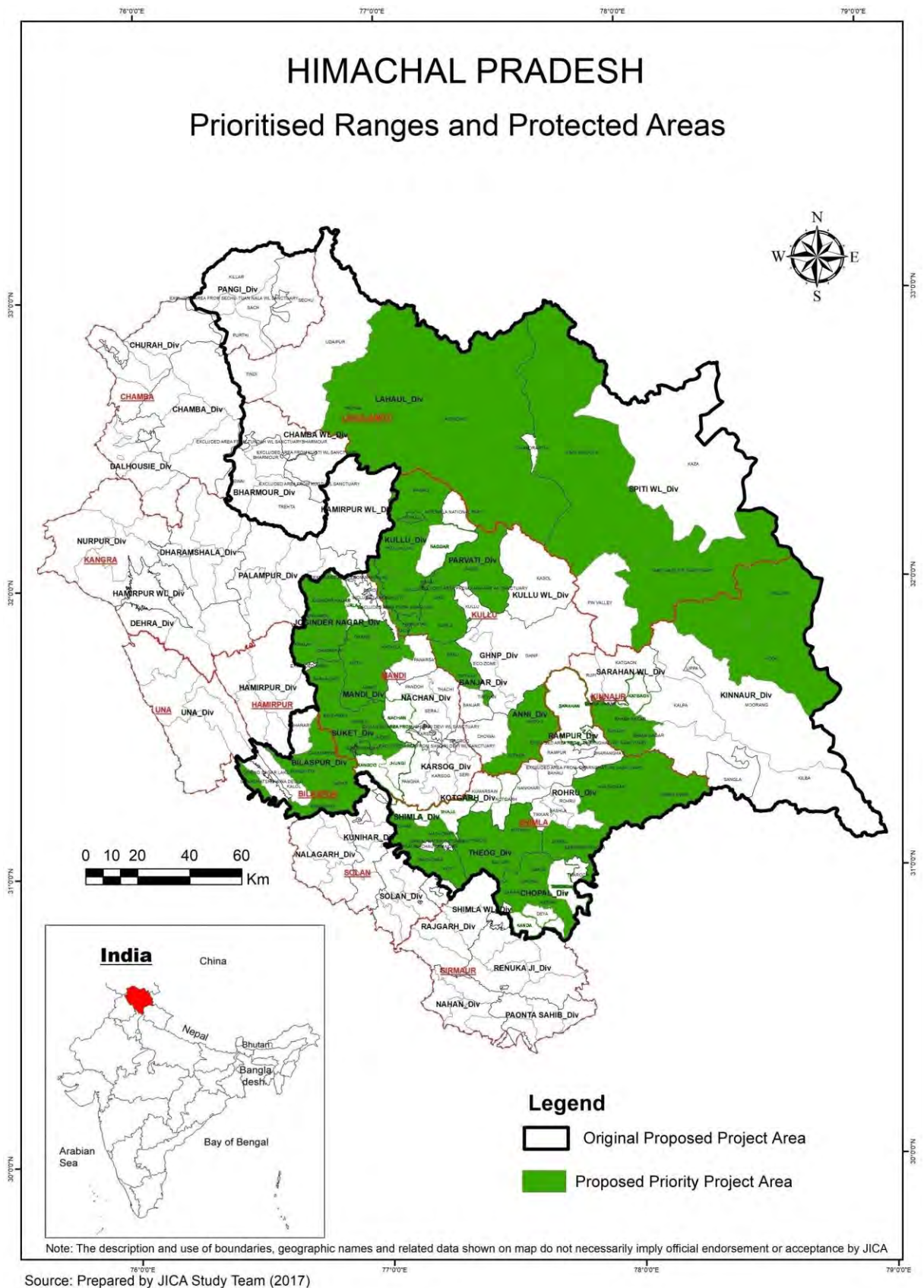


Figure 1.2.1 Indicative Prioritised Project Areas

CHAPTER 2 PRELIMINARY SITUATIONAL ANALYSIS OF THE POTENTIAL PROJECT AREA

In principle, this chapter covers information of districts having prioritised divisions/ranges (indicated in **Table 1.2.2 of Part II Chapter 1**). However, information of districts/ divisions originally proposed by HPFD (indicated in **Table 1.1.1 of Part II Chapter 1**) are also covered based on the availability as well as necessity of data/information.

2.1 Forest Administration

The numbers of ranges/sections/ beats and notified forest areas of territorial divisions which are located in the project districts proposed by HPFD are described in **Table 2.1.1**.

Table 2.1.1 Brief of Territorial Divisions Located in the Prioritised Project Districts

| No | Division | District | No. of Range | No. of Section | No. of Beat | Total Division Area (ha) | Notified Forest Area at Division (Ha) | | | | |
|----|----------------|---------------|--------------|----------------|-------------|--------------------------|---------------------------------------|--------|---------|---------|---------|
| | | | | | | | Total Area | RF | DPF | UPF | UF |
| 1 | BILASPUR | Bilaspur | 7 | 7 | 83 | 116,739 | 34,309 | 90 | 15,669 | 18,551 | - |
| 2 | MANDI | Mandi | 5 | 19 | 68 | 82,026 | 33,672 | - | 31,750 | 1,921 | - |
| 3 | NACHAN | Mandi | 4 | 15 | 58 | 61,951 | 37,241 | - | 36,718 | 523 | - |
| 4 | SUKET | Mandi | 6 | 19 | 72 | 92,074 | 43,301 | - | 27,361 | 532 | 15,408 |
| 5 | KARSOG | Mandi | 10 | 12 | 55 | 60,212 | 36,476 | - | 35,780 | 696 | - |
| 6 | JOGINDER NAGAR | Mandi | 6 | NA | 56 | 65,750 | 25,775 | - | 22,149 | 3,626 | - |
| 7 | KULLU | Kullu | 10 | NA | 45 | 115,662 | 71,365 | 325 | 40,134 | 30,907 | - |
| 8 | PARVATI | Kullu | 4 | 13 | 39 | 94,456 | 176,962 | 4,510 | 153,407 | 19,045 | - |
| 9 | BANJAR | Kullu | 10 | 7 | 27 | 35,691 | 2,988 | 1,016 | 11,972 | - | - |
| 10 | ANNI | Kullu | 3 | 12 | 46 | 71,459 | 24,974 | 2,076 | 22,898 | - | - |
| 11 | LAHAUL | Lahul & Spiti | 4 | NA | NA | 657,485 | 613,691 | 7,054 | 39,661 | 566,976 | - |
| 12 | KINNAUR | Kinnaur | 10 | 18 | 54 | 569,040 | 465,446 | - | 25,950 | - | 439,496 |
| 13 | SHIMLA | Shimla | 10 | 14 | 52 | 68,980 | 16,737 | 1,157 | 11,467 | - | 4,113 |
| 14 | THEOG | Shimla | 3 | NA | 44 | 67,035 | 34,474 | 3,183 | 11,565 | 19,726 | - |
| 15 | ROHRU | Shimla | 7 | 18 | 63 | 158,907 | 143,321 | 200 | 24,348 | 51,708 | 67,065 |
| 16 | CHOPAL | Shimla | 7 | 22 | 73 | 81,096 | 31,722 | - | 31,722 | - | - |
| 17 | KOTGARH | Shimla | 2 | 2 | 21 | 27,329 | 13,079 | 571 | 8,274 | 4,234 | - |
| 18 | RAMPUR | Shimla | 4 | 13 | 44 | 81,942 | 83,937 | - | 36,294 | 3,127 | 44,516 |
| | Total | | 112 | 191 | 900 | 2,507,835 | 1,899,469 | 20,181 | 587,119 | 721,572 | 570,597 |

Note: RF: reserved forest, DPF: demarcated protected forest, UPF: un-demarcated protected forest, SF: strip forest, UF: unclassified forest, NA: Not Available (at the time of preparation of the report)

Source Compiled by JICA Study Team (2017) based on information from HPFD

2.2 Present Conditions of Forest and Forest Area

2.2.1 Forest Cover

Division-wise forest cover based on ISFR2015 for divisions located in the prioritised project districts are summarised in **Table 2.2.1**.

Table 2.2.1 Division-wised Forest Cover of Divisions Located in the Prioritised Project Districts

| No. | Division | District | Total Area(ha) | Scrub (ha) | Open Forest (ha) | Moderately Dense Forest (ha) | Very Dense Forest (ha) | Total Forest Cover(ha) | Forest Cover % |
|-----------------------|----------------|----------|--------------------|-----------------|------------------|------------------------------|------------------------|------------------------|----------------|
| A) Territorial | | | | | | | | | |
| 1 | BILASPUR | Bilaspur | 116,739 | 14 | 16,706 | 17,098 | 2,363 | 36,168 | 31.0% |
| 2 | MANDI | Mandi | 82,026 | 83 | 13,100 | 12,129 | 6,383 | 31,612 | 38.5% |
| 3 | NACHAN | Mandi | 61,951 | 18 | 8,343 | 16,167 | 12,811 | 37,321 | 60.2% |
| 4 | SUKET | Mandi | 92,074 | 1,173 | 11,208 | 10,450 | 3,003 | 24,661 | 26.8% |
| 5 | KARSOG | Mandi | 60,212 | 1,569 | 11,212 | 12,434 | 4,128 | 27,775 | 46.1% |
| 6 | JOGINDERN AGAR | Mandi | 65,750 | 3 | 6,591 | 11,940 | 3,831 | 22,362 | 34.0% |
| 7 | KULLU | Kullu | 115,662 | 326 | 16,006 | 24,800 | 7,975 | 48,781 | 42.2% |
| 8 | PARVATI | Kullu | 94,456 | 649 | 12,805 | 14,053 | 11,504 | 38,362 | 40.6% |
| 9 | BANJAR | Kullu | 35,691 | 164 | 4,648 | 7,611 | 8,953 | 21,212 | 59.4% |
| 10 | ANNI | Kullu | 71,459 | 484 | 9,479 | 12,299 | 9,158 | 30,936 | 43.3% |
| 11 | LAHAUL | Lahaul | 657,485 | 971 | 14,481 | 3,111 | 1,466 | 19,058 | 2.9% |
| 12 | KINNAUR | Kinnaur | 569,040 | 6,869 | 23,166 | 22,058 | 6,498 | 51,722 | 9.1% |
| 13 | SHIMLA | Shimla | 8,980 | 1,351 | 11,695 | 13,188 | 6,453 | 31,336 | 45.4% |
| 14 | THEOG | Shimla | 67,035 | 211 | 6,936 | 12,023 | 8,634 | 27,594 | 41.2% |
| 15 | ROHRU | Shimla | 158,907 | 469 | 18,235 | 32,193 | 17,655 | 68,083 | 42.8% |
| 16 | CHOPAL | Shimla | 81,096 | 406 | 9,637 | 18,989 | 12,471 | 41,097 | 50.7% |
| 17 | KOTGARH | Shimla | 27,329 | 16 | 3,009 | 5,359 | 4,632 | 13,000 | 47.6% |
| 18 | RAMPUR | Shimla | 81,942 | 470 | 9,289 | 14,635 | 15,597 | 39,521 | 48.2% |
| Total of Above | | | 2,507,835.1 | 15,249.4 | 206,545.9 | 260,537.9 | 143,514.4 | 610,598.1 | 24.3% |
| B) Wildlife | | | | | | | | | |
| 1 | Kullu WL | Kullu | 123,066 | 124 | 8,290 | 11,360 | 10,303 | 29,953 | 24.3% |
| 2 | GHNP | Kullu | 124,517 | 567 | 10,576 | 12,772 | 14,482 | 37,830 | 30.4% |
| 3 | Spiti WL | L&S | 736,648 | 1,737 | 61 | - | - | 61 | 0.0% |
| 4 | Sarahan WL | Kinnaur | 96,265 | 432 | 4,336 | 7,509 | 7,464 | 19,309 | 20.1% |
| 5 | Shimla WL | Shimla | 5,640 | 1,737 | 61 | - | - | 61 | 0.0% |
| Total of Above | | | 1,086,136.0 | 2,860.4 | 23,859.9 | 34,407.2 | 34,122.1 | 92,389.2 | 8.5% |
| Grand Total | | | 3,593,971.1 | 18,109.8 | 230,405.8 | 294,945.1 | 177,636.5 | 702,987.3 | 19.6% |

Note: for Shimla WL and Chamba WL divisions only areas fall into proposed project districts are compiled.

Source: Compiled by JICA Study Team (2017) based on ISFR 2015 and information from HPFD

Divisions where dry alpine pastures are dominant (i.e. the alpine zone) tend to have lower forest cover ratio than other divisions (i.e. the non-alpine zone) due to their higher altitude. The forest cover ratios are extremely low in Spiti wildlife division, Lahaul division, and Kinnaur division, which are 0.0%, 2.9%, and 9.1%, respectively. On the other hand, the forest cover ratio of GHNP division and Bharamour division exceed 30% even though these divisions are located in the alpine zone.

In the non-alpine zone, most of divisions have the forest cover ratio exceeding 30% and except for Suket division which only have 26.8%. Majority of divisions have forest cover ratio ranging from 40% to 60%.

For territorial divisions, all types of forest covers are present in all the 20 divisions under proposed project districts. The leading five divisions for scrub forests are Kinnaur, Karsog, Shimla, Suket and Lahaul which contribute around 70% of the total area under this type. The

leading five divisions for open forest area are Kinnaur, Rohru, Bilaspur, Kullu and Lahul which contribute for around 43% of the total area under consideration. The first five divisions contributing to moderately dense forest area are Rohru, Kullu, Kinnaur, Chopal and Bilaspur which is around 44 % of the total area. Leading divisions for very dense forest are Rohru, Rampur, Nachan, Chopal and Parvati which contribute around 45% of the total area.

Under wildlife divisions, scrub forest and open forest are found in all of five divisions, whereas moderately dense forest and very dense forest are found in four divisions and not in the Spiti WL division as it is dominated by a cold desert area.

2.2.2 Major Ecosystems in the Prioritised Project Area

Eight forest-type groups (**Part I Section 4.3.3**) and dry alpine pasture dominated grassland/pasture (**Table 4.5.5 Part I Section 4.5.3**) can be regarded as the major ecosystem (vegetation) type in HP. Division-wise details of forest-type groups and grassland/pasture areas of divisions located in prioritised project districts are summarised in **Table 2.2.2**. **Figure 2.2.1** describes distribution of the forest-type groups and grassland/pasture in HP. Brief description of the ecosystem (vegetation) type in the divisions concerned are presented hereunder.

i) Tropical Moist Deciduous Forest

Found in Shimla and Theog divisions covering areas of 855 ha, whereas presence of the forest-type group is 2,560 ha in Shimla wildlife division. These are only divisions having this forest-type group.

ii) Tropical Dry Deciduous Forest

30,111ha visible in 12 territorial divisions (Bilaspur, Suket, Theog, Karsog, Shimla, Chopal, Rampur, Mandi, Kotgarh, Anni, Jogindernagar and Nachan). Bilaspur division has the most cover and almost two-third of the total area (20,300ha) in territorial divisions under this forest-type group. In wildlife divisions, Kullu wildlife division (450ha) has this forest-type group.

iii) Sub-Tropical Pine Forest

This is the second dominating forest-type group and has a total of 71,223 ha (70,310 ha in 18 territorial divisions and 913ha in four wildlife divisions) in the prioritised project district areas. The top six territorial divisions (Karsog, Theog, Bilaspur, Suket, Shimla, Mandi) cover more than 75% of the area.

iv) Himalayan Moist Temperate Forest

This is the most dominating forest-type group and a total of 377,578 ha (339,449 ha in territorial and 38,029 ha in wildlife) is found in all of the prioritised project district areas except in Spiti wildlife division. Nine divisions (Chopal, Jogindernagar, Rohru, Nachan, Kullu, Parvati, Rampur, Kullu wildlife and Mandi) have more than 20,000ha of this forest-type group within their divisions and total area covering around 71% of this forest-type group.

v) Himalayan Dry Temperate Forest

This is the third dominating forest-type group and a total of 71,057ha (60,298 ha in territorial and 10,759ha in in wildlife divisions) is found in the prioritised project district areas. This forest-type group is found in all of five wildlife divisions and 13 territorial divisions, but not in Bilaspur, Mandi, Nachna, Suket and Theog divisions.

vi) Sub-alpine Forest

This forest-type group has a total of 47,575 ha (41,673 ha in 11 territorial divisions and 5,902ha in four wildlife divisions) in the prioritised project district areas. Top five divisions (Rohru, Kinnaur, Kullu, Parvati and Kullu wildlife) have more than 3,000 ha of this forest-type group within divisions and contribute to about 80% of total area under this forest-type group.

vii) Moist Alpine Forest

This forest-type group has a total of 6,501 ha (5,220 ha in 9 territorial divisions and 1,281ha in four wildlife divisions) is in the prioritised project district areas. Top six divisions are Kullu, Parvati, Kullu wildlife, Rampur, Anni, and Rohru divisions which contribute about 88% of the total area.

viii) Dry Alpine Forest

This forest-type group has a total of 24,408 ha (19,037 ha in 9 territorial divisions and 5,371ha in four wildlife divisions) is in the prioritised project district areas. The three largest divisions (Kinnaur, Kullu, and Spiti wildlife), have more than 2,000 ha and accounts for 80% of this forest type group is found in these districts.

ix) Dry Aline Pasture

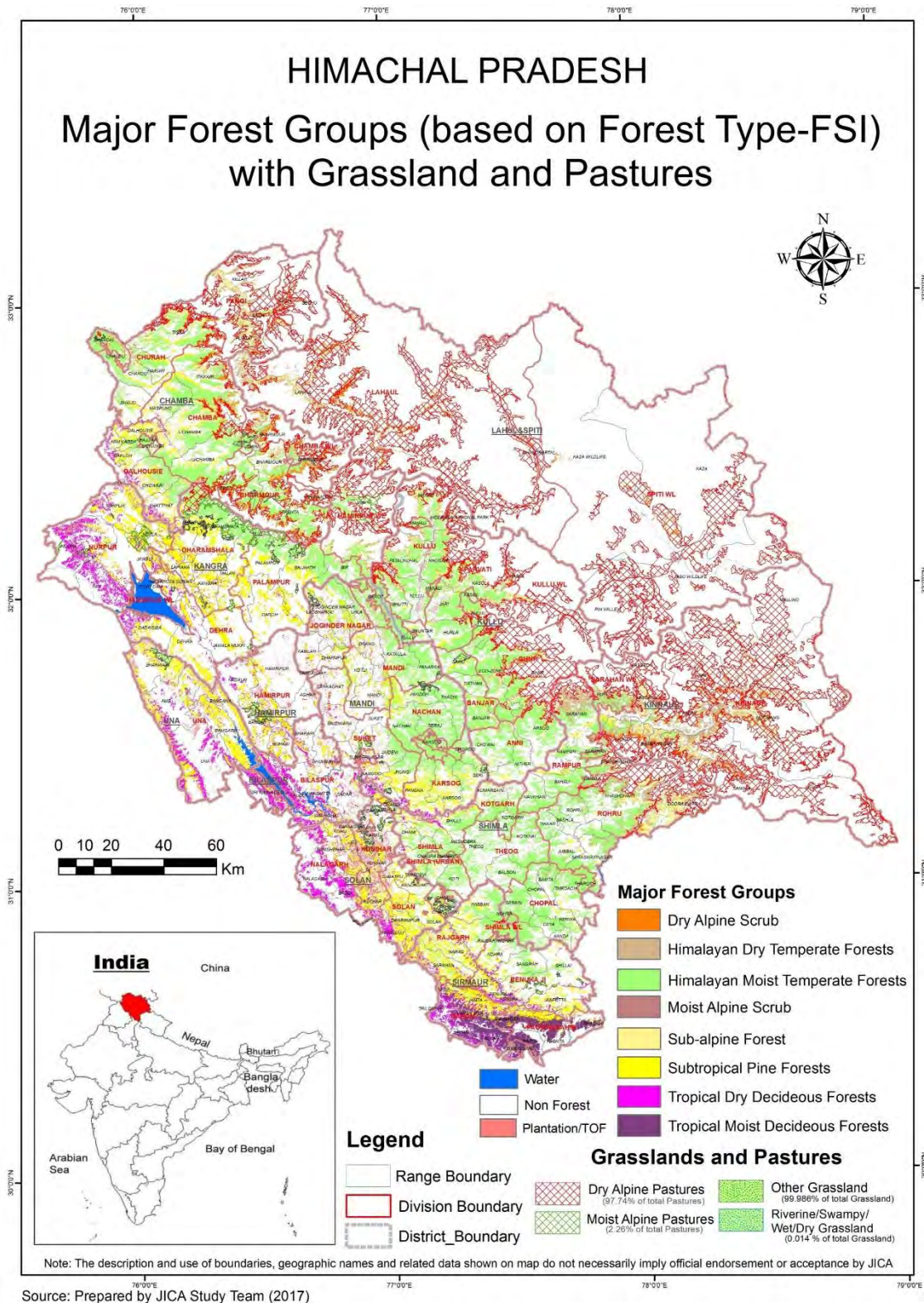
The dry alpine pasture has a total of 707,708 ha (470,564 ha in 10 territorial divisions and 237,143ha in five wildlife divisions) in the prioritised project district areas. The dry alpine pasture is dominated in three divisions (Kinnaur: 205,065ha, Lahaul: 162,185ha, Spiti wildlife: 115,741ha), which covers about 75% of the area. Four other divisions (GHNP, Saharan wildlife, Rohru, and Kullu wildlife) have the dry alpine pasture exceeding 20,000ha. These nine divisions account for about 95% of the dry alpine pasture found in these districts.

Table 2.2.2 Division-wise Ecosystem (Vegetation) Type of Divisions Located in the Prioritised Project Districts

| No. | Division | District | Total Area | Tropical Moist Deciduous Forest | Tropical Dry Deciduous Forest | Subtropical Pine Forest | Himalayan Moist Temperate Forest | Himalayan Dry Temperate Forest | Sub-Alpine Forest | Moist Alpine Forest | Dry Alpine Forest | Plantation/TOF | Total Forest/Tre e Area | Forest/T ree Area % | Dry Alpine Pastures | Moist Alpine Pastures | Other Grassland | Riverine/ Wet/Dry/ Swampy Grass Land | Total Pasture/ Grassland | Pasture / Grassland % |
|-----|-----------------------|----------|--------------------|---------------------------------|-------------------------------|-------------------------|----------------------------------|--------------------------------|-------------------|---------------------|-------------------|-----------------|-------------------------|---------------------|---------------------|-----------------------|-----------------|--------------------------------------|--------------------------|-----------------------|
| | Territorial | | | | | | | | | | | | | | | | | | | |
| 1 | BILASPUR | Bilaspur | 116,739 | - | 20,299.4 | 9,437.1 | 41.3 | - | - | - | - | 5,499.8 | 35,277.6 | 30.2% | - | - | 2.8 | - | 2.8 | 0.0% |
| 2 | MANDI | Mandi | 82,026 | - | 264.0 | 6,207.5 | 20,720.9 | - | - | - | - | 3,238.1 | 30,430.5 | 37.1% | - | - | 556.8 | - | 556.8 | 0.7% |
| 3 | NACHAN | Mandi | 61,951 | - | 1.6 | 3,269.1 | 33,939.2 | - | - | - | - | 81.5 | 37,291.4 | 60.2% | - | - | 548.4 | - | 548.4 | 0.9% |
| 4 | SUKET | Mandi | 92,074 | - | 3,445.1 | 8,196.9 | 9,857.5 | - | - | - | - | 4,390.0 | 25,889.5 | 28.1% | - | - | 1,531.6 | - | 1,531.6 | 1.7% |
| 5 | KARSOG | Mandi | 60,212 | - | 1,255.5 | 12,012.9 | 15,784.9 | 2.2 | - | - | - | 22.4 | 29,077.9 | 48.3% | - | - | 525.0 | - | 525.0 | 0.9% |
| 6 | JOGINDERNAGAR | Mandi | 65,750 | - | 27.5 | 1,238.1 | 35,880.7 | 2,293.4 | 399.1 | - | - | 715.4 | 40,554.2 | 61.7% | - | - | 718.6 | - | 718.6 | 1.1% |
| 7 | KULLU | Kullu | 115,662 | - | - | 321.2 | 31,936.3 | 1,325.3 | 7,655.1 | 1,901.5 | 2,367.6 | 2,070.4 | 47,577.4 | 41.1% | 14,531.4 | - | - | - | 14,531.4 | 12.6% |
| 8 | PARVATI | Kullu | 94,456 | - | - | 1,496.7 | 27,357.9 | 1,456.3 | 3,993.9 | 1,200.7 | 1,869.1 | 826.4 | 38,201.0 | 40.4% | 11,833.4 | - | - | - | 11,833.4 | 12.5% |
| 9 | BANJAR | Kullu | 35,691 | - | - | 1,399.8 | 17,229.0 | 789.4 | 1,214.0 | 69.7 | 36.2 | 37.5 | 20,775.6 | 58.2% | - | - | 925.2 | - | 925.2 | 2.6% |
| 10 | ANNI | Kullu | 71,459 | - | 67.3 | 887.5 | 15,130.5 | 420.3 | 2,330.8 | 546.6 | 653.8 | 940.0 | 20,976.8 | 29.4% | 4,122.9 | - | 106.3 | - | 4,229.2 | 5.9% |
| 11 | LAHAUL | Lahaul | 657,485 | - | - | 167.0 | 4,709.1 | 330.0 | 756.5 | 203.4 | 257.0 | 100.5 | 6,523.5 | 1.0% | 162,185.4 | 2.7 | 0.9 | 0.1 | 162,189.0 | 24.7% |
| 12 | KINNAUR | Kinnaur | 569,040 | - | - | 1,436.8 | 4,566.0 | 23,985.4 | 10,752.4 | 3.6 | 12,735.9 | 193.8 | 53,673.9 | 9.4% | 205,064.6 | 1.0 | 24.2 | - | 205,089.8 | 36.0% |
| 13 | SHIMLA | Shimla | 68,980 | 447 | 1,167.8 | 6,995.1 | 12,539.4 | 605.5 | 216.2 | 120.9 | 102.0 | 147.7 | 22,341.1 | 32.4% | - | - | 4.4 | - | 4.4 | 0.0% |
| 14 | THEOG | Shimla | 67,035 | 409 | 2,813.7 | 10,926.3 | 2,030.2 | - | - | - | - | 874.8 | 17,053.6 | 25.4% | - | - | - | - | - | 0.0% |
| 15 | ROHRU | Shimla | 158,907 | - | - | 1,249.2 | 35,268.3 | 17,515.6 | 12,136.4 | 522.4 | 894.1 | 358.8 | 67,944.8 | 42.8% | 26,079.0 | 1.7 | 5.9 | 2.2 | 26,088.9 | 16.4% |
| 16 | CHOPAL | Shimla | 81,096 | - | 307.2 | 1,880.1 | 37,400.5 | 1,985.2 | 674.2 | - | - | 182.6 | 42,429.8 | 52.3% | 19.6 | - | 0.2 | - | 19.8 | 0.0% |
| 17 | KOTGARH | Shimla | 27,329 | - | 192.6 | 718.3 | 10,829.2 | 836.2 | - | - | - | 369.8 | 12,946.1 | 47.4% | - | - | - | - | - | 0.0% |
| 18 | RAMPUR | Shimla | 81,942 | - | 269.2 | 2,470.2 | 24,327.7 | 8,753.3 | 1,544.7 | 651.2 | 121.3 | 446.3 | 38,583.9 | 47.1% | 4,748.7 | - | - | - | 4,748.7 | 5.8% |
| | Total of Above | | 2,507,835.1 | 855.1 | 30,110.9 | 70,309.8 | 339,548.6 | 60,298.1 | 41,673.3 | 5,220.0 | 19,037.0 | 20,495.8 | 587,548.6 | 23.4% | 428,585.0 | 5.4 | 4,950.1 | 2.4 | 433,542.9 | 17.3% |
| | Wildlife | | | | | | | | | | | | | | | | | | | |
| 1 | Kullu WL | Kullu | 123,066 | - | 450.1 | 525.0 | 22,618.7 | 597.5 | 3,487.6 | 915.4 | 1,088.0 | 439.2 | 30,121.4 | 24.5% | 23,307.8 | - | 0 | - | 23,308.0 | 18.9% |
| 2 | GHNP | Kullu | 124,517 | - | - | 269.2 | 1,076.3 | 2,660.8 | 735.6 | 23.5 | 3.1 | 0.1 | 4,768.5 | 3.8% | 45,344.0 | - | - | - | 45,344.0 | 36.4% |
| 3 | Spiti WL | L&S | 736,648 | - | - | - | - | 173.8 | - | - | 2,537.2 | 49.0 | 2,759.9 | 0.4% | 115,740.9 | 0 | - | - | 115,741.0 | 15.7% |
| 4 | Sarahan WL | Kinnaur | 96,265 | - | - | 108.1 | 9,374.2 | 7,138.7 | 1,633.9 | 202.9 | 1,742.2 | 2.0 | 20,201.9 | 21.0% | 28,076.4 | - | - | - | 28,076.4 | 29.2% |
| 5 | Shimla WL | Shimla | 5,640 | - | - | 10.6 | 4,959.8 | 187.9 | 44.2 | 139.4 | - | - | 5,341.9 | 94.7% | - | - | - | - | - | 0.0% |
| | Total of Above | | 1,086,136.0 | - | 450.1 | 912.8 | 38,029.0 | 10,758.8 | 5,901.3 | 1,281.1 | 5,370.5 | 490.2 | 63,193.7 | 5.8% | 212,469.1 | 0.2 | 0.2 | - | 212,469.5 | 19.6% |
| | Grand Total | | 3,593,971.1 | 855.1 | 30,561.0 | 71,222.6 | 377,577.6 | 71,056.9 | 47,574.6 | 6,501.1 | 24,407.5 | 20,986.0 | 650,742.3 | 29.2% | 641,054.1 | 5.6 | 4,950.4 | 2.4 | 646,012.4 | 18.0% |

Note: For Shimla WL division, only the areas fall into proposed project districts are compiled.

Source Compiled by JICA Study Team (2017) based on ISFR 2015 and information from HPFD



Source: JICA Study Team (2017)

Figure 2.2.1 Ecosystem (Vegetation) Type Distribution in HP State (Indicative)

2.3 Forest Management

2.3.1 Forest Management System

In 18 territorial divisions within the prioritised project districts, various working circles¹ for specific treatments are prescribed as per the respective working plans. There are approximately 1,402,270ha of main working circles and 2,253,410 ha of overlapping working circles. **Table 2.3.1** describes types of working circles, and their areas for the 18 territorial divisions.

Table 2.3.1 Working Circle Areas of Divisions Located in Prioritised Project Districts (Except Protected Area)

| No | Forest Division | Working Circles (WC) | Type (Main/Overlapping) | Main WC Area (ha) | Overlapping WC Area (ha) | Date of Working Plan |
|-------|-----------------|--------------------------------------|-------------------------|-------------------|--------------------------|--|
| 1 | Bilaspur | Chil | Main | 5,648 | | 2012-2013 to 2026-2027 |
| | | Protection | Main | 4,010 | | |
| | | Plantation | Main | 17,061 | | |
| | | Total | | 26,718 | - | |
| 2 | Mandi | Chil | Main | 7,059 | | Mandi Jogindernagar Forest Division 1999-2000 to 2013-2014 |
| | | Deodar & Kail | Main | 3,769 | | |
| | | Oak | Main | 2,322 | | |
| | | Fir | Main | 1,783 | | |
| | | Protection | Main | 10,080 | | |
| | | Plantation | Main | 7,073 | | |
| | | Wildlife and its Management | Overlapping | - | - | |
| | | Joint Forest Planning and Management | Overlapping | - | - | |
| | | Non-Timber Forest Produce | Overlapping | - | - | |
| Total | | 32,086 | - | | | |
| 3 | Nachan | Chil | Main | 4,939 | | 1998-1999 to 2012-2013 (extension granted till 31.03.2018) |
| | | Deodar & Kail | Main | 7,614 | | |
| | | Oak | Main | 2,168 | | |
| | | Fir & Spruce | Main | 8,034 | | |
| | | Protection | Main | 10,748 | | |
| | | Plantation | Overlapping | | 1,280 | |
| | | Total | | 33,503 | 1,280 | |
| 4 | Suket | Chil | Main | 5,375 | | 2003-2004 to 2017-2018 (1986-2001 Working Plan) |
| | | Deodar & Kail | Main | 5,624 | | |
| | | Protection | Overlapping | | 11,542 | |
| | | Plantation | Overlapping | | 5,447 | |
| | | Total | | 11,000 | 16,989 | |
| 5 | Karsog | Deodar & Kail | Main | 7,007 | | 2012-2013 to 2026-2027 |
| | | Chil | Main | 13,823 | | |
| | | Protection | Main | 12,984 | | |
| | | Plantation | Overlapping | - | - | |
| | | Non-Timber Forest Produce | Overlapping | - | - | |
| | | Participatory forest Management | Overlapping | - | - | |
| | | Wildlife and its Management | Overlapping | - | - | |
| | | Improvement | Overlapping | - | - | |
| | | Total | | 33,814 | - | |
| 6 | Jogindernagar | Chil | Main | 4,056 | | Mandi Jogindernagar Forest |
| | | Deodar & Kail | Main | 628 | | |
| | | Oak | Main | 1,592 | | |

¹ Working circles is one of forest management / treatment units described in working plans and categorised as per specific management practices and prescribed for specific forest areas.

| No | Forest Division | Working Circles (WC) | Type (Main/Overlapping) | Main WC Area (ha) | Overlapping WC Area (ha) | Date of Working Plan |
|----|--------------------|--------------------------------------|-------------------------|-------------------|--------------------------|---|
| | | Fir | Main | 246 | | Division 1999-2000 to 2013-2014 |
| | | Protection | Overlapping | | 5,074 | |
| | | Plantation | Overlapping | | 3,564 | |
| | | Total | | 6,522 | 8,638 | |
| 7 | Kullu | Deodar & Kail | Main | 2,407 | | 2013-2014 to 2027-2028 |
| | | Fir | Main | 11,286 | | |
| | | Protection | Main | 26,258 | | |
| | | Improvement | Main | 966 | | |
| | | Broad Leaved | Overlapping | 1,630 | | |
| | | Plantation | Overlapping | - | | |
| | | Wildlife Management | Overlapping | - | | |
| | | Participatory Forest Management | Overlapping | - | | |
| | | Non-Timber Forest Produce | Overlapping | - | | |
| | | Total | | 42,546 | - | |
| 8 | Parbati | Deodar & Kail | Main | 6,793 | | 1994-1995 to 2009-2010 |
| | | Fir | Main | 7,291 | | |
| | | Protection | Main | 141,382 | | |
| | | Plantation | Overlapping | - | - | |
| | | Broad Leaved | Main | 1,630 | | |
| | | Grazing | Overlapping | - | - | |
| | | Total | | 157,096 | | |
| 9 | Banjar (Seraj) | Deodar & Kail | Main | 2,182 | | 2013-2014 to 2027-2028 |
| | | Fir | Main | 2,635 | | |
| | | Chil | Main | 897 | | |
| | | Protection | Overlapping | | 19,572 | |
| | | Improvement | Main | 2,816 | | |
| | | Total | | 8,530 | 19,572 | |
| 10 | Anni | Chil | Main | 897 | | 1996-199- to 2011-2012 (Extension was granted up to 31.03.2015) |
| | | Deodar & Kail | Main | 2,182 | | |
| | | Fir & Spruce | Main | 2,635 | | |
| | | Protection | Main | 19,572 | | |
| | | Improvement | Main | 28,216 | | |
| | | Total | | 53,502 | - | |
| 11 | Lahaul | Protection | Main | 20,796 | | 1993-1994 to 2006-2007 |
| | | Selection | Main | 6,660 | | |
| | | Afforestation | Overlapping | | 112 | |
| | | Grazing | Overlapping | | 586,123 | |
| | | Soil cum Biodiversity Conservation | Overlapping | - | - | |
| | | Minor Forest Produce | Overlapping | - | - | |
| | | Total | | 27,456 | 586,235 | |
| 12 | Kinnaur (RekongPo) | Deodar & Kail | Main | 3,520 | | 1999-2000 to 2014-2015 |
| | | Fir & Spruce | Main | 5,101 | | |
| | | Protection | Main | 13,519 | | |
| | | Soil cum Biodiversity Conservation | Overlapping | | 438,177 | |
| | | Neoza | Main | 2,845 | | |
| | | Total | | 4,984 | 438,177 | |
| 13 | Shimla | Deodar & Kail | Main | 3,012 | | 2011-2012 to 2025-2026 |
| | | Chil | Main | 3,443 | | |
| | | Biosphere Conservation | Main | 15,249 | | |
| | | Plantation | Main | 9,637 | | |
| | | Protection | Overlapping | - | - | |
| | | Soil and water conservation | Overlapping | - | - | |
| | | Joint Forest Planning and Management | Overlapping | - | - | |

| No | Forest Division | Working Circles (WC) | Type (Main/Overlapping) | Main WC Area (ha) | Overlapping WC Area (ha) | Date of Working Plan |
|--------------|-----------------|---------------------------|-------------------------|-------------------|--------------------------|------------------------|
| | | Non-Timber Forest Produce | Overlapping | - | - | |
| | | Wildlife Management | Overlapping | - | - | |
| | | Total | | 31,340 | - | |
| 14 | Theog | Chil | Main | | | 2016-2017 to 2028-2029 |
| | | Deodar & Kail | Main | 12,255 | | |
| | | Oak | Main | 5,354 | | |
| | | Fir & Spruce | Main | 1,855 | | |
| | | Plantation | Main | 18,212 | | |
| | | Biosphere Conservation | Main | | | |
| | | Total | | 37,676 | - | |
| 15 | Rohru | Chil | Main | 1,117 | | 1994-1995 to 2008-2009 |
| | | Deodar & Kail | Main | 12,101 | | |
| | | Fir & Spruce | Main | 16,451 | | |
| | | Protection | Main | 108,804 | | |
| | | Plantation | Main | 4,950 | | |
| | | Grazing | Overlapping | - | - | |
| | | Total | | 143,423 | - | |
| 16 | Chopal | Chil | Main | 7,246 | | 2002-2003 to 2017-2018 |
| | | Deodar & Kail | Main | 27,016 | | |
| | | Oak | Main | 9,944 | | |
| | | Fir & Spruce | Main | 7,080 | | |
| | | Protection | Main | 9,851 | | |
| | | Plantation | Main | 5,643 | | |
| | | Grazing | Overlapping | | 3,815 | |
| | | Wildlife | Overlapping | - | - | |
| | | NTFP | Overlapping | - | - | |
| | | JFM | Overlapping | - | - | |
| | | Total | | 66,779 | 3,815 | |
| 17 | Kotgarh | Chil | Main | 3,921 | | 2012-2013 to 2026-2027 |
| | | Deodar & Kail | Main | 4,595 | | |
| | | Oak | Main | 153 | | |
| | | Fir & Spruce | Main | 4,411 | | |
| | | Protection | Overlapping | - | - | |
| | | Plantation | Overlapping | - | - | |
| | | NTFP | Overlapping | - | - | |
| | | JFM | Overlapping | - | - | |
| | | Total | | 13,079 | - | |
| 18 | Rampur | Chil | Main | 3,924 | | 2014-2015 to 2028-2029 |
| | | Deodar & Kail | Main | 10,675 | | |
| | | Oak | Main | 911 | | |
| | | Fir & Spruce | Main | 13,913 | | |
| | | Protection | Overlapping | - | - | |
| | | Plantation | Overlapping | | 9,998 | |
| | | NTFP | Overlapping | - | - | |
| | | JFM | Overlapping | - | - | |
| | | Wildlife Management | Overlapping | - | - | |
| | | Total | | 29,423 | 9,998 | |
| 19 | Bharmour | Deodar & Kail | Main | 4,133 | | 2004-2005 to 2017-2018 |
| | | Fir & Spruce | Main | 1,143 | | |
| | | Protection | Overlapping | | 130,480 | |
| | | Total | | 5,276 | 130,480 | |
| 20 | Pangi | Rehabilitation | Main | 11,478 | | 2002-2003 to 2021-22 |
| | | Selection | Main | 5,792 | | |
| | | Afforestation | Main | 104,408 | | |
| | | Total | | 121,678 | - | |
| Total | | | | 1,275,315 | 2,122,930 | |

Source Compiled by JICA Study Team (2017) based on respective working plans

Areas under protection working circle (both main and overlapping) and soil conservation overlapping working circle signify scopes of soil moisture conservation works, drainage line treatment. Grazing overlapping working circle is another big operational area signifying presence of temperate and alpine pastures in the area and potential of working in pasture management. Afforestation and plantation working circle (both main and overlapping) is the third largest in terms of area, implying potential of afforestation activity being large gaps or lower density in the forests. Deodar/ Kail working circles and Fir/ Spruce working circle are other dominant areas prescribed. Chir working circle and Oak working circle are other working circles needing attention. Chir forests are prone to frequent fires because of slow decomposing needle slush. Conversion to Broad leaved is one option to be considered to reduce fire frequency and carbon emissions. Oak forests are good source of fodder and contribute significantly to aquifer recharge.

2.3.2 Departmental Natural Forest Management, Reforestation, Afforestation

Working circle information presented in **Table 2.3.1** shows that in the divisions at the prioritised project districts, forests of Deodar, Kail, Fir, and Spruce are commonly seen either pure or mixed stands. Besides, high altitude broad leaved species (Oaks, Alnus, Horse-chestnut) also occur in shady patches or along rivers or depressions. Growing periods of these species are short and so growth is slow and rotation age is between 120 to 150 years. Silvicultural systems followed in most of the conifers are irregular shelter-wood system and no big openings or clear felling can be exercised being frost prone areas with high rainfall intensity which hinders regeneration. In steep slopes, selection felling is prescribed to prevent erosion. Improvement of these forests are important to restore health of these forest ecosystems so that they are able to deliver optimum ecosystem services.

Afforestation and reforestation potential is high in the prioritised project area reflecting the provisions for treatments as per respective working plans as indicated in **Table 2.3.1**. At the same time, it is challenging because of high incidence of grazing (migratory & resident cattle population), abundant snow and frost, limited growing season, long raising periods in the nursery operations (two to five years). The Project needs to look at better germplasm, techniques and protocols to improve, growth, results and success in afforestation/ reforestation activities.

Based on results of questionnaire to proposed project divisions, a status of existing permanent nurseries in the prioritised project divisions are summarised in **Table 2.3.2**. Though replies to the questionnaire was not fully available from all of divisions in the prioritised project districts, there are the following tendencies in respect to HPFD permanent nurseries within the prioritised project districts. Range-wise permanent forest nursery status is described in **Attachment II.2.3.1**.

- ◆ Majority of divisions have more number of nurseries than total number of ranges within a division, implying that permanent nursery is established more the one per range.
- ◆ Average nursery area ranges from 0.32ha to 1.08ha within the concerned project divisions
- ◆ Average annual seedling production (between 20015-16 and 2016-17) per proposed project division ranges from approximately 60,000 seedlings to 3,811,000 seedlings

- ◆ Average annual seedling production (between 20015-16 and 2016-17) per nursery in the concerned project division ranges from approximately 16,000 seedlings to 246,000 seedlings.

Table 2.3.2 Permanent Forest Nursery Status in Divisions Located in Prioritised Project Districts

| Divisions | No. of Range | Number of Nurseries | Total Area of Nurseries (ha) | Average Area Per Nursery (ha) | Seedling Production (No of seedlings) | | Average Annual Production (No of seedlings) | Average Production Per Nursery (No of seedlings) |
|----------------|--------------|---------------------|------------------------------|-------------------------------|---------------------------------------|-----------|---|--|
| | | | | | 2016-17 | 2015-16 | | |
| BILASPUR | 7 | 13 | 6.70 | 0.52 | 402,000 | NA | 402,000 | 30,923 |
| MANDI | 5 | 18 | 11.50 | 0.64 | 513,218 | 351,665 | 432,442 | 24,025 |
| NACHAN | 4 | 6 | 4.70 | 0.78 | 400,000 | 400,000 | 400,000 | 66,667 |
| SUKET | 6 | 30 | 9.65 | 0.32 | 621,192 | 684,292 | 652,742 | 21,758 |
| KARSOG | 10 | 17 | 10.75 | 0.63 | 621,426 | 543,169 | 582,298 | 34,253 |
| JOGINDERNA GAR | 6 | 14 | 10.70 | 0.76 | 300,000 | NA | 300,000 | 21,429 |
| KULLU | 10 | 13 | 10.95 | 0.84 | 395,412 | 661,800 | 528,606 | 40,662 |
| PARVATI | 4 | 9 | 9.75 | 1.08 | 900,000 | 900,000 | 900,000 | 100,000 |
| BANJAR | 10 | 6 | 6.11 | 1.02 | 1,421,000 | 1,528,000 | 1,474,500 | 245,750 |
| ANNI | 3 | 20 | 9.10 | 0.46 | 546,387 | 818,805 | 682,596 | 34,130 |
| LAHAUL | 4 | NA | NA | NA | NA | NA | NA | NA |
| KINNAUR | 10 | 28 | 20.00 | 0.71 | 435,000 | NA | 435,000 | 15,536 |
| SHIMLA | 10 | 2 | | - | 60,000 | NA | 60,000 | 30,000 |
| THEOG | 3 | NA | NA | NA | NA | NA | NA | NA |
| ROHRU | 7 | 7 | 7.00 | 1.00 | 1,190,000 | 1,190,000 | 1,190,000 | 170,000 |
| CHOPAL | 7 | 6 | 4.30 | 0.72 | 389,033 | 389,033 | 389,033 | 64,839 |
| KOTGARH | 2 | 7 | 4.35 | 0.62 | 368,987 | 352,623 | 360,805 | 51,544 |
| RAMPUR | 4 | 24 | 11.25 | 0.47 | 3,447,789 | 4,174,145 | 3,810,967 | 158,790 |

Note: NA: Not Available (or no reply at the time of preparation of the report)

Source: Compiled by JICA Study Team (2017) based on the data obtained from HPFD

2.3.3 Joint Forest Management

(1) Status of JFMCs in the Divisions within the Prioritised Project Districts

According to the data supplied from the divisions, 491 JFMCs with the total number of 19,027 members have been formed under FDA between 2000 and 2011. Out of which, 197 JFMCs are reported to be active. The average number of members vary between divisions ranging between 8 and 180, with the total average of 39 members. **Table 2.3.3** below gives the status of JFMCs in the divisions within the prioritised project districts.

Table 2.3.3 JFMCs under FDA in Divisions Located in Prioritised Project Districts

| Division | Total No. of Existing JFMCs in the Division | Types of Treatment (Unit: ha) | | | | | Membership | | Activity Level | |
|----------------|---|-------------------------------|----------------|----------------|----------------|-------------------------|---------------------|--------------------------------|--------------------|-------------|
| | | Plantation | Grassland | ANR | Others | Total of Treatment Area | Total No of Members | Average No of Members per JFMC | No of JFMCs Active | % |
| Ani | 35 | 70.0 | - | 89.0 | - | 159.0 | 390 | 11 | 35 | 100.0 |
| Bilaspur | - | | | | | - | | - | - | |
| Chopal | 1 | | | | - | - | 8 | 8 | 1 | 100.0 |
| Joginder Nagar | 62 | - | - | 245.0 | - | 245.0 | - | - | 39 | 62.9 |
| Karsog | 35 | 89.0 | 83.0 | 90.0 | - | 262.0 | 2,482 | 71 | 35 | 100.0 |
| Kinnaur | 0 | | | | | - | | - | - | |
| Kotgarh | - | | | | | - | | - | - | |
| Kullu | 42 | 351.0 | 148.0 | 225.0 | 66.0 | 790.0 | 3,559 | 85 | 42 | 100.0 |
| Lahaul | - | | | | | - | | - | - | |
| Mandi | 83 | 53.5 | 15.0 | 117.0 | 30.5 | 216.0 | 898 | 11 | 10 | 12.0 |
| Nachan | 32 | - | - | - | - | - | 1,464 | 46 | | 0.0 |
| Parvati | 31 | 641.0 | 99.0 | 318.0 | 194.0 | 1,252.0 | 470 | 15 | | 0.0 |
| Rampur | 17 | 191.0 | 32.0 | 192.0 | - | 415.0 | 215 | 13 | | 0.0 |
| Rohru | 17 | - | 190.0 | 350.0 | 750.0 | 1,290.0 | 191 | 11 | 3 | 17.6 |
| Seraji | 50 | 286.0 | 350.0 | 415.0 | 234.0 | 1,285.0 | 8,990 | 180 | 18 | 36.0 |
| Shimla | 17 | 147.0 | | | | 147.0 | 256 | 15 | | 0.0 |
| Suket | 69 | 591.1 | 460.9 | 456.3 | 480.3 | 1,988.7 | 102 | 1 | 14 | 20.3 |
| Theog | - | | | | | - | | - | - | |
| Total | 491 | 2,419.6 | 1,377.9 | 2,497.3 | 1,754.8 | 8,049.7 | 19,025 | 39 | 197 | 40.1 |

Source: Compiled by JICA Study Team (2017) based on the data obtained from HPFD

(2) Findings from the Field Visits

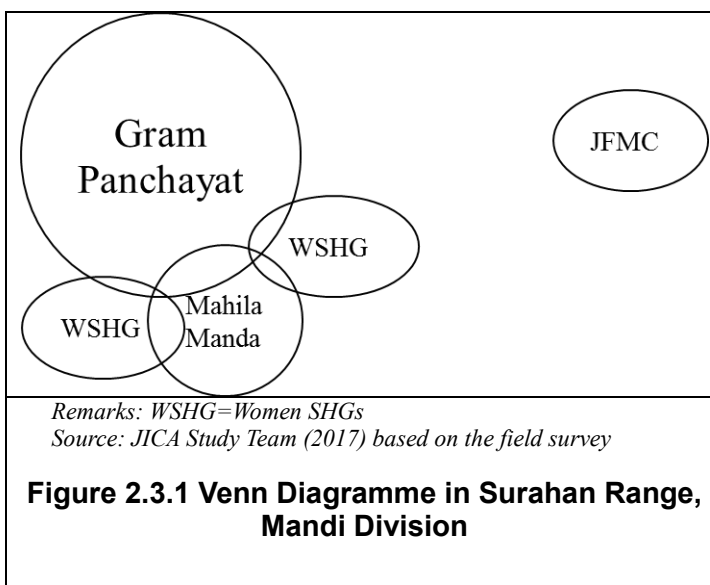
As an attempt to understand the status of existing VFDSs/ JFMCs, the Study Team has interacted with villagers from five villages where VFDSs or JFMCs were constituted.

Table 2.3.4 Summary of VFDS/ JFMCs Visited by the Study Team

| Division | Range | Village | Supporting Project/ Scheme | Type/ Year organised | Status of JFMC and other types of forest management committee |
|----------|-----------|------------|----------------------------|----------------------|---|
| Bharmour | Bharmour | Sachwin | KfW | VFDS (2017) | Micro plans were prepared but no activities started. |
| Bilaspur | Ghumarwin | Malyawar | FDA | JFMC | The study team was informed that there has been a JFMC constituted in the village. However, the informants were not aware of whether JFMC has been organised. |
| Bilaspur | Ghumarwin | Gualmutani | FDA | JFMC (not known) | Plantation was done once and no more activities. |
| Mandi | Drang | Surahan | FDA | JFMC (2007) | Plantation was done once and no more activities. Planning was done by FD. Women were not aware of JFMC. |
| Mandi | Drang | Sakrog | N/A | JFMC (2017) | Formed a few months ago. Most villagers and JFMC members do not have clarity on the roles of JFMCs. No work has been done. Women interviewed were not aware of JFMC in the village. |

Source: JICA Study Team (2017) based on the field survey

Sachwin village in Bharmour Range, Bharmour Division is currently under KfW Project and thus, with the facilitation of the project, VFDS was organised recently and micro plan was prepared. However, the villagers interacted with the Study Team was not aware of the micro plans as the exercise took place at the Gram Panchayat level which is a larger administrative unit than a revenue village or hamlet. In Bilaspur and



Mandi, the Study Team has interacted with the villagers where FDA JFMCs were formed. In Gualmutani village, Ghumarwin range, Bilaspur division and Surahan village in Drang range, Mandi division, plantation activities were undertaken once since the formation and thereafter no activities were implemented. The JFMCs were organised since long, however, the field interactions suggest that the activities of these institutions have been driven by the department driven rather than community. These institutions seemed to have been created for the mobilisation of the labourers for plantation. In the case of Surhan village in Mandi division, villagers stated that the planning of JFMC activities were done by FD. The venn diagramme drawn by the villagers shows JFMC as a detached institution away from other community level organisations and the relevance of its existence was seen low in comparison to Gram Panchayat, Women SHGs and Mahila Mandal. JFMCs in all villages visited were yet to become self-sustaining institutions or might not have been visualised to become one.

(3) Assessment of Available Areas for PFM Mode Forestry Operation

The assessment of the available areas for participatory forest management/ joint forest management was undertaken by the Study Team. The results of the needs assessment are given in **Table 2.3.5**. In the 13 proposed divisions, 491 JFMCs were formed under FDA and, out of which 197 JFMCs or 40% of them were reported to be active. Across nine divisions, 275 Gram Panchayats were identified suitable for the PFM mode operation. The total treatable area under PFM mode was estimated to be 4,961 ha. In Kinnaur, substantial area of grass land is available for treatment along with the areas for ANR. As the Project intends to work with ward which is the lower unit of Gram Panchayat under PRI and accounts for 4,599 in the reported proposed project divisions, the number of wards to be selected from each project range may need to be limited taking into consideration of the scale of the treatment areas, which in other words affects the effectiveness of the treatment and has an implication on the project operational cost. When

prioritising project divisions and identifying the areas for the project intervention, such conditions and their implication on the project interventions shall be factored in.

Table 2.3.5 Preliminary Assessment of Areas Suitable for JFM Mode Forestry Operation

| Division | Areas Suitable for PFM Mode Treatment (Unit: ha) | | | | | Total No of Gram Panchayats for Possible Formation of JFMC/ VFDS/ EDCs | No of Wards in the Division |
|----------------|--|------------|---------|-------------------------|---------|--|-----------------------------|
| | Plantation | Grass Land | ANR | Other Type of Treatment | Total | | |
| Ani | 70.0 | - | 89.0 | - | 159.0 | 22 | 343 |
| Bilaspur | - | - | - | - | - | - | - |
| Chopal | 10.0 | - | - | - | 10.0 | 1 | 294 |
| Joginder Nagar | - | - | 245.0 | - | 245.0 | - | - |
| Karsog | - | - | - | - | - | 23 | 381 |
| Kinnaur | 175.0 | 845.0 | 730.0 | - | 1,750.0 | 35 | - |
| Kotgarh | - | - | - | - | - | - | - |
| Kullu | 320.0 | 172.0 | 136.0 | 91.0 | 719.0 | 42 | 430 |
| Lahaul | - | - | - | - | - | - | - |
| Mandi | - | - | - | - | - | 51 | 613 |
| Nachan | 235.0 | 40.0 | 370.0 | - | 645.0 | 29 | 85 |
| Parvati | 245.0 | 110.0 | 94.0 | - | 449.0 | - | 265 |
| Rampur | 44.0 | - | - | - | 44.0 | 50 | 310 |
| Rohru | - | - | - | - | - | - | 533 |
| Seraji | 400.0 | 275.0 | 265.0 | - | 940.0 | 22 | 166 |
| Shimla | - | - | - | - | - | - | 356 |
| Suket | - | - | - | - | - | - | 823 |
| Theog | - | - | - | - | - | - | - |
| Total | 1,499.0 | 1,442.0 | 1,929.0 | 91.0 | 4,961.0 | 275 | 4,599 |

Remarks: Karsog and Mandi did not indicate the treatment model wise area break ups.
Source: Compiled by JICA Study Team (2017) based on the data obtained from HPFD

2.3.4 Community Forest Management, Forest Rights Act and Timber Distribution to Right Holders

(1) Community Forest Management

As discussed in **Part I Chapter 4, Section 4.7**, there were different forms of community forest management existed in the state. Traditionally communities in specific pockets of the state were protecting forests in order to meet their domestic requirement of fuel, fodder, small timber and timber. They had devised their own system of forest protection, harvesting and use of forest produces, regulation of grazing and fodder collection etc. Community conserved areas are found

in some areas of Chamba, Kullu and Mandi. Sacred groves, sacred places, temples within the village as well as in forest are common in many areas of Chamba, Kullu, Mandi and Lahaul & Spiti districts. These groves and sacred places are under strict protection and no forest produce are being collected from these areas. Temple committees do exist in many villages to manage the temples and activities associated with temple. Rakha system, engagement of local forest guard who reports to the community as well as to the then forest management authority, was prevalent in many areas including Kullu and Mandi districts before the introduction of scientific forest management during the British Rule. The Negis/ village headman/ revenue collectors had the rights to allow people to cut trees for their *bona fide* requirements. They also played a role in forest management at the local level.

Under the National Project (Umbrella) for Social Forestry (refer **Part I Section 5.2.5**), Village Development Committees were formed for creation and maintenance of social forests. This gave rise to community initiatives for forest protection. In many places of Kullu and Mandi, the local communities came forward to protect their forest as they were unable to meet their requirement of fuel and fodder. A number of Mahila Mandals and Yuvak Mandals were formed to take initiatives for forest protection. Some villages visited by the study team in Kullu, Mandi and Chamba, where the village committees including Mahila Mandals are actively regulating grazing of animals in the forest and developed own rules for grazing as well as collection of fodder. Some of these villages have been registered as JFMCs/ VFDSs and continue their conservation efforts. In Kinnaur, there is a collective management system for procurement and trade of Neoza (Chilgoza pine cones) for the forest and village areas. The total harvest is auctioned and the value incurred is distributed equally among the villages.

(2) Forest Rights Act, 2006

The implementation of Forest Rights Act (FRA) is very slow in the entire state. Initially it was implemented only in the Schedule V areas and later on in the entire state. Forest Rights Committees (FRCs) have been constituted in 17,503 revenue villages to receive and process applications of right holders. At present the Tribal Development Department, the nodal agency for implementation of the act, is organising training programmes for FRCs and others on the process involved in implementation of act. So far titles have been given only in Chamba district. Seven community titles have been given in Bharmour and 53 individual titles have been given in the district i.e. areas other than Bharmour and Pangi.

In Kinnaur, some of the tribal villages have been demanding for titles under the FRA but their applications are still pending with the Sub-Divisional Level Committees (SDLCs) and District Level Committees (DLCs). As quoted in a newspaper (The Tribune, April 15, 2016) that from 2008 to 2010, as many as 2,477 individuals and 54 community claims were filed in district and 1,370 individual claims and 54 community claims were pending with DLC and 1,107 individual claims were pending with FRCs. Himlok Jagriti Manch, a forum of local people, has been fighting for the rights of the forest dwellers.

In Lahaul & Spiti district, Himachal Van Adhikar Manch, a platform of civil society organisations working on FRA, organised training programmes for the FRCs from 23 villages and other stakeholders on the processing of claims during October 2016. The awareness level on the forest dwellers on FRA is low. No claims have been settled yet in Lahaul & Spiti.

(3) Timber Distribution to Right holders

This has been discussed in detail in **Part I Chapter 4, Section 4.7.3**. The rights of the local communities have been clearly defined and admitted in the respective forest settlement reports of the states/ districts. In districts of Kullu and Mandi similar kinds of rights were admitted in the forest settlement reports and the right holders were allowed to cut grass, harvest herbs, fruits, flowers, dried fallen wood except deodar (*cedrus deodara*), walnut (*juglans regia*), box (*buxus spp.*) and ash (*fraxinus spp.*) in all types of forest without permission. The right holders were allowed to cut bamboos and splinters of deodar and kail stumps. They also had rights to collect manure leaves – both dry and green, timber for house building, and graze their animals in the forest.

In the project districts, right holders do claim for timber under TD rights. The distribution of timber over a period of five years i.e. 2011-12 to 2015-16 in the project area has been presented in **Table 2.3.6**.

Table 2.3.6 Distribution of Timber to the Right Holders in Proposed Project Area

(Unit: Cubic Meter)

| Forest Circle | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | 2015-16 | |
|--|---------|----|---------|----|---------|-----|---------|-------|---------|-------|
| | TD | FG | TD | FG | TD | FG | TD | FG | TD | FG |
| Bilaspur | 0 | 0 | 0 | 0 | 0 | 0 | 445 | 0 | 23 | 0 |
| Chamba | 0 | 0 | 0 | 0 | 0 | 109 | 354 | 242 | 4,804 | 33 |
| Kullu | 0 | 0 | 37 | 41 | 201 | 0 | 4,129 | 112 | 3,215 | 369 |
| Mandi | 0 | 0 | 0 | 0 | 19 | 0 | 13,086 | 95 | 216 | 290 |
| Rampur | 27 | 0 | 93 | 0 | 176 | 0 | 5,443 | 76 | 11,158 | 0 |
| Shimla | 0 | 0 | 136 | 7 | 401 | 431 | 12,344 | 857 | 5,621 | 412 |
| Total | 27 | 0 | 266 | 48 | 797 | 540 | 35,801 | 1,382 | 25,037 | 1,104 |
| Total TD & FG in Project Area | 27 | | 314 | | 1,337 | | 37,183 | | 26,141 | |
| Total timber production in the State | 146,057 | | 207,041 | | 245,083 | | 242,888 | | 148,198 | |
| % of TD in Project Area to the State's timber production | 0.02 | | 0.15 | | 0.55 | | 15.31 | | 17.64 | |

Note: TD – Timber distribution to the Right Holders and FG – free grant of timber for exigencies

Source: JICA Study Team (2017)– compiled from information provided by the Statistics Cell, HPFD

The major claims for timber were received from Shimla, Rampur and Mandi forest circles. During 2011-12, a small quantity i.e. 27 cum was distributed under TD only in Kinnaur forest division under Rampur circle. No timber was distributed under TD in Bilaspur and Chamba during 2011-12 to 2013-14. The share of TD to the total timber production of the state in last five years was 6.57%.

The findings from the household survey conducted by the study team indicated that only a small number of households have received the timbers for the construction and repair of house and

amongst the 400 surveyed households, 28 households received the timber under their TD rights between 1986 and 2017. The details are given in **Attachment II.2.3.2**.

2.3.5 Grassland / Pasture Management

Significant grassland and pasture areas exist in the potential project area (**Table 2.2.2**).

Given that HP has large livestock populations (5.22 million - 18th Livestock Census 2007), high dependence of pastoral communities (Gaddis & Gujjars) on livestock and low productivity of these grasslands (1.0 – 2.0 t/ha, dry matter), improvements of such situations by respective schemes/projects are called for in this sector.

2.3.6 Cold Desert /Permanent Snow Area Management²

Spiti wildlife division and parts of Lahaul division are the two areas where cold deserts and permanent snow areas are dominant in the potential project area. Lahaul & Spiti district is the largest district in HP with a lowest population density of 2 persons/km². Most of the area is under the control of HPFD (73.2%). Climatic conditions in Spiti are harsher than in Lahaul owing to high altitude, dry cold arid conditions and extremes of temperatures (maximum summer day temperature +36°, minimum winter night temperature - 32°). Rainfall in these areas is negligible (10– 20 mm) and most of the precipitation is in the form of winter snow. Historically the region was known for forests of Junipers which exist to some extent in Lahaul but are rare in Spiti nowadays. Fuelwood requirement is provided by the government, on subsidised rates by transporting fuelwood from other parts of HP. Partially, fuelwood requirement is met from poplar and willow plantations along water courses. Livestock are yaks, horses, donkey, cows, sheep and goat. Pastures near the villages are used for grazing, large number of pastures (dry alpine pasture) are inaccessible, inhospitable (permafrost) and far from settlements. Fodder is extracted in autumn from designated pastures for winter stall feeding. Agriculture residue constitutes substantial part of fodder requirement (77 %). Major agents of social and economic change in Spiti in 90's has been opening of area for tourism, production of cash crop of peas and introduction of apple in lower parts of Spiti.

Because of remoteness and short working season, very meticulous and systematic work is required to be done to improve pastures, promotion of sustainable harvesting of high value medicinal herbs, commercially viable agriculture, development of seabuckthorn (*hippophae rhamnoides/ H. salicifolia*) and its value addition are options to be explored besides technological interventions in production of fuel and fodder, rehabilitation of junipers. Major project related interventions in the area are summarised in **Part I Section 4.5.4** of this report.

² Data used in this section is based on the Management Plan of Upper Spiti Landscapes (Kibber Wildlife Sanctuary)

2.4 Wildlife and Biodiversity

2.4.1 Protected Area

As stated in Part II Chapter 1, 20 protected areas exist in the six prioritised project districts and brief description of these protected areas is presented in **Table 2.4.1**. Out of the 20 protected areas, four has been prioritised as the project area based on the exclusion/ selection criteria.

Table 2.4.1 Protected Areas Located in Prioritised Project Districts

| No. | PA Name | Type | Year | Area (km ²) | District | Wildlife Division | Remarks |
|-----|--------------------------------|------|------|-------------------------|----------------|-------------------|----------|
| 1 | Great Himalayan National Park* | NP | 1994 | 905.40 | Kullu | GHNP | Excluded |
| 2 | Pin Valley | NP | 1987 | 675.00 | Lahaul & Spiti | Spiti WL | Excluded |
| 3 | Khirganga | NP | 2010 | 705.00 | Kullu | Parvati | Excluded |
| 4 | Indekilla | NP | 2010 | 94.00 | Kullu | Kullu WL | Excluded |
| 5 | Bandli | WLS | 1974 | 32.11 | Mandi | Kullu WL | |
| 6 | Chandertal | WLS | 2007 | 38.56 | Lahaul & Spiti | Spiti WL | Excluded |
| 7 | Daranghati | WLS | 1974 | 171.50 | Shimla | Sarahan WL | Excluded |
| 8 | Kias | WLS | 1997 | 12.61 | Kullu | Kullu WL | |
| 9 | Kannawer | WLS | 1984 | 107.29 | Kullu | Kullu WL | Excluded |
| 10 | Khokhan | WLS | 1984 | 14.94 | Kullu | Kullu WL | |
| 11 | Kibber | WLS | 1992 | 2,220.12 | Lahaul & Spiti | Spiti WL | Excluded |
| 12 | Lippa Asrang | WLS | 2001 | 31.00 | Kinnaur | Sarahan WL | Excluded |
| 13 | Manali | WLS | 1984 | 29.00 | Kullu | Kullu WL | |
| 14 | Nagru | WLS | 1974 | 132.37 | Mandi | Kullu WL | Excluded |
| 15 | Rakchham Chitkul | WLS | 1989 | 304.00 | Kinnuar | Sarahan WL | Excluded |
| 16 | Rupi Bhaba | WLS | 2001 | 503.00 | Kinnaur | Sarahan WL | Excluded |
| 17 | Sech Taun Nalla | WLS | 1974 | 390.29 | Chamba | Chamba WL | Excluded |
| 18 | Shimla Water Catchment | WLS | 1982 | 10.00 | Shimla | Shimla WL | Excluded |
| 19 | Shikari Devi | WLS | 1962 | 29.94 | Mandi | Kullu WL | Excluded |
| 20 | Talra | WLS | 1974 | 46.48 | Shimla | Shimla WL | Excluded |

Note: NP: National Park, WLS: Wildlife Sanctuary, CR: Conservation Reserve *Includes Sainj WLS and Tirthan WLS
Source: Compiled by JICA Study Team (2017) based on information from HPFD

Questionnaire survey was conducted with 22 protected areas in seven proposed project districts by HPFD, and ten answers (45.5%) were returned. The current status of respective wildlife divisions such as facilities, human-wildlife conflict, endangered fauna and flora, and ecotourism activities are briefly summarised in **Table 2.4.2**, and the whole data of respective protected areas are summarised in **Attachment II.2.4.1**.

Table 2.4.2 Current Status of Wildlife Divisions of Prioritised Project Districts

| Wildlife Division | Shimla | Sarahan | Spiti |
|--|-------------------------------|---|---|
| Protected Areas included | SWC Dhali, SWC Chail, Tharoch | Dharanghati, Lipka Asrang, Rakchham Chhitkul, Rupi Bhaba | Chandertal, Kibber, Pin Valley NP |
| Interpretation Centre | No | No | 1 in Kibber |
| Veterinary Care Centre | No | Sarahan Pheasantry | No |
| Tranquilization equipment | 2 in Tharoch | Yes in division office | 1 in division office |
| Camera traps | 4 each in respective PAs | 24 in division office, 2~28 in respective PAs | Yes |
| Audio-Visual equipment | No | 8 in division office, 8~17 in respective PAs | No |
| GPS | 5 in total | 13 in division office, 1~10 in respective PAs | Yes |
| 4WD vehicle | 0 | 1 in division office | 1 in division office |
| Motor bike | 2 in total | 3 in division office | No |
| Bicycle | 66 in total | no | No |
| Human-wildlife conflict | 0 | Sporadic, black bear, snake | Ibex damages agriculture crops of adjoining villages, crop raiding. Snow leopard sometimes prey on domestic animals |
| Issues of endangered fauna and flora | 0 | Tragopan, Musk Deer, Serow | Medicinal plants exploitation, pastures land competition between domestic animals & wildlife, prey spp of snow leopard. Spread of communicable diseases |
| Existing measures for endangered fauna and flora | 0 | Tragopan Conservation breeding Programme, Development of anti-poachers, Provision of watch-towers and law training for staff. | Protection by staff, educating the local population. Pasture improvement, moisture improvement, awareness & vaccination with the help of line department. |
| Habitation and usage of PA by people | 0 | Debarred, accordingly to notification issued during 2013 | In fringe areas for pasture, medicinal plant collection. migratory graziers. |
| Eco-development work | 0 | Nil | Bunkers, tracking & traditional routes |
| Eco-tourism | 0 | Eco – tourism Society of circle level is under formation | Trekking routes to Baralachha & Leh. |
| No. of nature camps organised in 2016-17 | 0 | 10 in total | 9 in total |
| No. of eco-clubs exist | - | - | 1 Senior Secondary School each in respective PAs |
| No. of cases of timber poaching in 2016-17 | 0 | 2 | - |

Source: Compiled by JICA Study Team (2017) based on questionnaire survey by the Team

Facilities and equipment in the respective wildlife divisions are different from one another. Relatively higher numbers of equipment such as camera traps and GPS in Sarahan, while Shimla division has as much as 66 bicycles. Human-wildlife conflict and issues of endangered species were largely reported by Spiti wildlife division and partly by Sarahan wildlife division and accordingly, relevant interventions are carried out in these divisions. No eco-development nor ecotourism activities are reported by Shimla wildlife division, while eco-development works and eco-clubs are on-going in Spiti. The similar data was not available from other wildlife divisions during the study period.

2.4.2 Biodiversity Richness

Biodiversity richness index has been developed in the “Biodiversity Characteristics at Landscape Level: National Assessment 2012” prepared by the Indian Institute of Remote Sensing (IIRS). Distribution of biodiversity rich areas in the proposed districts proposed by HPFD are given in **Table 2.4.3**. On an average, half of divisional areas (53% in territorial divisions and 46% in wildlife divisions) are regarded as biological richness areas. However, the percentage of biodiversity richness areas against total area varies among divisions. In relation to biodiversity richness, HPSBB has prepared a new list of the threatened animal species as indicated in **Attachment II.2.4.2**, which awaits formal approval from the Government of HP. Such species shall be taken in to account in respect to biodiversity conservation.

Table 2.4.3 Division-wise Biological Richness of Divisions Located in Prioritised Project Districts

| No | Division | District | Total Geographic Area (Ha) | Biodiversity Richness (Ha) | | | | Total Biodiversity Richness Area (ha) | Biodiversity Richness Area (%) |
|-----------------------|----------------|----------|----------------------------|----------------------------|------------------|------------------|------------------|---------------------------------------|--------------------------------|
| | | | | Low | Medium | High | Very High | | |
| A) Territorial | | | | | | | | | |
| 1 | BILASPUR | Bilaspur | 116,739 | 966 | 14,700 | 31,960 | 0 | 47,626 | 40.8% |
| 2 | MANDI | Mandi | 82,026 | 402 | 15,131 | 22,069 | 5,917 | 43,519 | 53.1% |
| 3 | NACHAN | Mandi | 61,951 | 289 | 8,490 | 25,253 | 11,656 | 45,688 | 73.7% |
| 4 | SUKET | Mandi | 92,074 | 453 | 16,270 | 26,501 | 2,799 | 46,023 | 50.0% |
| 5 | KARSOG | Mandi | 60,212 | 306 | 16,438 | 13,494 | 3,900 | 34,138 | 56.7% |
| 6 | JOGINDERN AGAR | Mandi | 65,750 | 398 | 8,516 | 28,989 | 1,866 | 39,769 | 60.5% |
| 7 | KULLU | Kullu | 115,662 | 302 | 2,876 | 22,330 | 38,841 | 64,349 | 55.6% |
| 8 | PARVATI | Kullu | 94,456 | 220 | 1,855 | 20,589 | 37,608 | 60,273 | 63.8% |
| 9 | BANJAR | Kullu | 35,691 | 166 | 777 | 9,012 | 17,780 | 27,734 | 77.7% |
| 10 | ANNI | Kullu | 71,459 | 264 | 2,013 | 23,817 | 24,694 | 50,787 | 71.1% |
| 11 | LAHAUL | Lahaul | 657,485 | 1,236 | 23,475 | 163,444 | 5,405 | 193,560 | 29.4% |
| 12 | KINNAUR | Kinnaur | 569,040 | 1,307 | 18,509 | 205,817 | 45,373 | 271,006 | 47.6% |
| 13 | SHIMLA | Shimla | 68,980 | 262 | 17,955 | 28,597 | 12,481 | 59,294 | 86.0% |
| 14 | THEOG | Shimla | 67,035 | 217 | 21,875 | 20,513 | 13,769 | 56,375 | 84.1% |
| 15 | ROHRU | Shimla | 158,907 | 425 | 29,549 | 44,994 | 52,156 | 127,124 | 80.0% |
| 16 | CHOPAL | Shimla | 81,096 | 173 | 21,316 | 25,766 | 24,267 | 71,522 | 88.2% |
| 17 | KOTGARH | Shimla | 27,329 | 145 | 6,606 | 8,269 | 6,769 | 21,789 | 79.7% |
| 18 | RAMPUR | Shimla | 81,942 | 199 | 21,255 | 15,080 | 29,524 | 66,058 | 80.6% |
| Total of Above | | | 2,507,835.1 | 7,730 | 247,606 | 736,493 | 334,804 | 1,326,633 | 52.9% |
| B) Wildlife | | | | | | | | | |
| 1 | Kullu WL | Kullu | 123,066 | 207 | 3,206 | 31,678 | 22,094 | 57,186 | 46.5% |
| 2 | GHNP | Kullu | 124,517 | 183 | 9,301 | 43,723 | 37,952 | 91,158 | 73.2% |
| 3 | Spiti WL | L&S | 736,648 | 698 | 33,724 | 81,480 | - | 115,901 | 15.7% |
| 4 | Sarahan WL | Kinnaur | 96,265 | 212 | 2,277 | 30,298 | 20,517 | 53,304 | 55.4% |
| 5 | Shimla WL | Shimla | 5,640 | 0 | 64 | 3,054 | 2,501 | 5,620 | 99.6% |
| Total of Above | | | 1,086,136.0 | 1,300.4 | 48,571.7 | 190,233.6 | 83,063.6 | 323,169.2 | 29.8% |
| Grand Total | | | 3,593,971.1 | 9,030.5 | 296,177.3 | 926,727.0 | 417,867.5 | 1,649,802.3 | 45.9% |

Source: Compiled by JICA Study Team (2017) based on information from HPFD

2.4.3 Human-Wildlife Conflict

Human-wildlife conflict incidences and compensation amount during 2016-17 for divisions in the prioritised project districts are described in **Table 2.4.4**. Similar tendency as the state level as indicate in **Part I, Section 4.4.6** can be observed at the prioritised project areas. The tendency of the human-animal conflicts is as follows.

- ◆ The human-animal conflicts seem to be more prevalent in low to mid elevational districts/divisions in HP where more populated in comparison to districts/divisions which are in higher elevation with less population density
- ◆ Compare to territorial divisions, there seem to be less human-animal conflicts in wildlife divisions which include protected areas. This is because local livelihood and livestock are not expected in the protected areas thus chances of conflicts are much less than those outside protected areas.

Table 2.4.4 Division-wise Human Animal Conflicts of Project Districts Proposed by HPFD (2016-17)

| Name of Division | Human Loss | | Human Injury | | | | Cattle/ Animal Loss | | | Grand Total Amount Paid |
|-------------------------------|-------------|-------------------|---------------|-------------------|-----------------|-------------------|---------------------|----------------------|-------------------|-------------------------|
| | Death Cases | Amount Paid (INR) | Simple Injury | Amount Paid (INR) | Grievous Injury | Amount Paid (INR) | No. of Cases | No. of Animal Killed | Amount Paid (INR) | |
| Shimla Circle | | | | | | | | | | |
| Shimla | - | - | 9 | 15,713 | 2 | 150,000 | 24 | 27 | 154,000 | 319,713 |
| Rohru | 1 | 100,000 | 1 | 10,000 | 1 | 75,000 | 3 | 5 | 14,400 | 199,400 |
| Chopal | - | - | - | - | 2 | 125,000 | 11 | 68 | 170,000 | 295,000 |
| Theog | - | - | - | - | - | - | - | - | - | - |
| Total | 1 | 100,000 | 10 | 25,713 | 5 | 350,000 | 38 | 100 | 338,400 | 814,113 |
| Bilaspur Circle | | | | | | | | | | |
| Bilaspur | - | - | - | - | - | - | - | - | - | - |
| Rampur Circle | | | | | | | | | | |
| Rampur | 2 | 250,000 | 4 | 12,634 | 3 | 225,000 | 40 | 78 | 302,500 | 790,134 |
| Anni | - | - | - | - | - | - | - | - | - | - |
| Kinnour | 1 | 150,000 | - | - | 1 | 75,000 | 15 | 157 | 284,500 | 509,500 |
| Kotgarh | - | - | - | - | - | - | - | - | - | - |
| Total | 3 | 400,000 | 4 | 12,634 | 4 | 300,000 | 55 | 235 | 587,000 | 1,299,634 |
| Mandi Circle | | | | | | | | | | |
| Mandi | - | - | 8 | 14,167 | - | - | 3 | 3 | 18,000 | 32,167 |
| Suket | - | - | 24 | 44,012 | - | - | 10 | 23 | 34,000 | 78,012 |
| J/Nagar | - | - | 3 | 20,844 | 2 | 150,000 | 11 | 11 | 79,000 | 249,844 |
| Karsog | - | - | 1 | 1,645 | - | - | 5 | 45 | 80,500 | 82,145 |
| Nachan | - | - | 1 | 668 | - | - | 22 | 107 | 215,000 | 215,668 |
| Total | - | - | 37 | 81,336 | 2 | 150,000 | 51 | 189 | 426,500 | 657,836 |
| Kullu Circle | | | | | | | | | | |
| Kullu | - | - | - | - | - | - | - | - | - | - |
| Parvati | - | - | 1 | 1,818 | - | - | - | - | - | 1,818 |
| Seraj | - | - | - | - | - | - | - | - | - | - |
| Lahaul | - | - | - | - | - | - | - | - | - | - |
| Total | - | - | 1 | 1,818 | - | - | - | - | - | 1,818 |
| Wildlife Circle Shimla | | | | | | | | | | |
| Shimla | - | - | - | - | - | - | 1 | 1 | 6,000 | 6,000 |
| Sarahan | - | - | - | - | - | - | - | - | - | - |
| Spiti | - | - | - | - | - | - | - | - | - | - |
| Total | - | - | - | - | - | - | 1 | 1 | 6,000 | 6,000 |
| National Park Shamshi | | | | | | | | | | |
| Shamshi (GHNP) | - | - | - | - | 1 | 75,000 | 9 | 20 | 82,500 | 157,500 |
| Kullu | - | - | - | - | - | - | - | - | - | - |
| Total | - | - | - | - | 1 | 75,000 | 9 | 20 | 82,500 | 157,500 |
| Total of Above | 4 | 500,000 | 52 | 121,501 | 12 | 875,000 | 154 | 545 | 1,440,400 | 2,936,901 |

Source: Compiled by JICA Study Team (2017) based on information from HPFD

The incidences of human wildlife conflicts identified from the Livelihood Survey³ indicated that the damage was caused by monkeys and mostly on crops. Bears were also identified as a cause of crop damage in the JFM areas and wild boar in Bilaspur and Mandi. Damages to the household properties are reported by one household in Kotgar (non JFM/ parrot) and 2 households in Rampur (non JFM/ rat) and Theog and one grassland users/ semi-nomadic household from Parvati (non JFM/ wild boar). Loss of domestic animals were reported by 8 households of the JFM villages and by 4 households amongst the 59 grassland users/ semi-nomadic households. The compensation was received by one household in Kinnaur for the loss of domestic animals for the amount of INR 16,000. No incidences of human injuries were reported by the surveyed households however, a few households indicated that female adults and female children were affected by the wild life.

The interventions related to human wildlife conflicts taken by HPFD has not been well recognised amongst the survey households. One household in Theog and another in Parvati indicated that the trenches were dug by HPFD. 12 households indicated their awareness of the measures taken by HPFD, however, the nature of the interventions was not specified by the respondents. The further details can be found in **Attachment II.2.4.3**.

2.4.4 Invasive/Exotic Species

Four exotic plant species has been invading Himachal's landscape over the past 20 years, causing serious concern from ecological, biodiversity, socio-economics and health point of view. These four species are; lantana, parthenium, ageratum and eupatorium. The summary of the reconnaissance survey by HPFD to map the infestation during January-March 2011 is described in **Table 2.4.5**.

Table 2.4.5 Circle-wise Exotic Weed Infestation in Forest Lands (January-March 2011)

| Circle | Exotic Weed Infestation Area (ha) | | | | |
|--------------|-----------------------------------|-----------|------------|------------|------------|
| | Lantana | Ageratum | Parthenium | Eupatorium | Total |
| Nahan | 21,456.99 | 4,302.51 | 4,260.73 | 595.87 | 30,616.10 |
| Bilaspur | 55,941.55 | 0.00 | 0.00 | 0.00 | 55,941.55 |
| Mandi | 7,900.00 | 2,360.00 | | | 10,260.00 |
| Hamirpur | 12,680.00 | 0.00 | 0.00 | 0.00 | 12,680.00 |
| Dharamshala | 47,403.00 | 12,810.00 | | | 60,213.00 |
| Shimla | 4,060.89 | 0.00 | 1,100.00 | 0.00 | 5,160.89 |
| Rampur | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Chamba | 4,631.77 | 132.91 | 68.50 | 85.40 | 4,918.58 |
| Kullu | 575.70 | 0.00 | 284.30 | 137.25 | 997.25 |
| WL (S) | 475.06 | 683.98 | 611.44 | 190.50 | 1,960.98 |
| WL (N) | 1,160.00 | 54.00 | 0.00 | 1,239.00 | 2,453.00 |
| WL (GHNP) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 156,284.96 | 20,343.40 | 6,324.97 | 2,248.02 | 185,201.35 |

Source: HPFD Internal Documents

³ Livelihood survey was carried out by the study team during the field survey period taking 341 sample households. JFM and non JFM villages were surveyed from a range belonging to a particular bio-geo zone. 59 grazisers/ grassland users were also interviewed using the same questionnaire.

Approximately 1,563km² forest land is infested with lantana. Lantana infestation has rendered forests degraded and highly prone to fire, which led to the loss of biodiversity. Livelihoods of migratory graziers have been threatened, due to take over of their winter grazing grounds by lantana.

Efforts have been made to manage and control these invasive species through mechanical/cultural and chemical methods, which have been too few and too far spread to create any significant impact. Through these experiences, a lesson was learned that efforts to remove invasive species need to be integrated with rehabilitation of the treated areas and require persistence and long-term commitment. Local communities are expected to play an important role in eradication of invasive species, and how effectively involve them in the project implementation is an issue in its management and removal.

2.4.5 Eco-development and Ecotourism

Importance of biodiversity conservation outside protected areas is emerging, and further emphasis on community-based biodiversity conservation should be highlighted in the state. The Biodiversity Management Committee (BMC) and People's Biodiversity Register (PBR) can be practical options to promote community-based biodiversity conservation.

BMC and PBR are not the mandate of HPFD, but of State Biodiversity Board (SBB). SBB has been approaching to Gram Panchayats to sensitise them and build capacities to constitute BMCs. Four districts of Chamba, Kullu, Shimla and Sirmaur were prioritised, and two more districts, Kinnaur and Lahaul & Spiti were followed. Two Districts of Bilaspur and Mandi, which are under proposed project areas, will be targeted at the later stage. Prioritised four districts were targeted in the first round of awareness generation and sensitisation, and total of 1,089 GPs were covered and 184 BMCs have been constituted. According to the latest and unconfirmed information by SBB, 500 BMCs have been constituted by September 2017, but detailed information such as the numbers of BMCs in each district were not available. 120 PBRs have been prepared in the state, some of which SBB has already started digitising for database development. Further capacity building of GPs to constitute BMCs and PBRs is one of the issues of SBB. SBB recognises that the crux of BMC and PBR is to develop linkages with the industry and to enable communities/Panchayats in getting their Access and Benefit Sharing (ABS) rights from the industry/companies, which is expected for BMCs to become self-sustainable.

Despite that SBB extended their efforts to identify some potential areas for Biodiversity Heritage Site (BHS), about 15 sites are identified for future recognition.

Ecotourism works towards conservation of nature, biodiversity and culture. Realising the importance and the role that the ecotourism can play for nature conservation and livelihoods, the policy on ecotourism has evolved since 2001, and currently aims at bringing the wilderness and virgin ecosystem of the state closer to tourists and nature lovers, while ensuring adequate safeguards and systems to protect and conserve natural resources.

Himachal Pradesh Ecotourism Society (HPECOSOC) was created within HPFD to carry forward

the ecotourism policy prescription to ground. As of July 2017, HPECOSOC has promoted six sites under private public partnership models, among which two are in the prioritised project districts as indicated in **Table 2.4.6**.

Table 2.4.6 Ecotourism Sites Promoted by HPECOSOC in the Prioritised Project Districts

| Name of sites | Date of initiation | Date of renewal for next 5 years | Current Rent per Annum (INR) |
|---|--------------------|----------------------------------|------------------------------|
| Shoghi Camping Site, Shimla (on NH-22 (Shimla)) | 27.01.2009 | 27.01.2014 | 425,000 |
| Sonu Bunglow Camping Site, near Tata devi on NH-22 (Shimla) | n/a | n/a | n/a |

n/a: information which was not available or not able to confirm details.

Source: Compiled by JICA Study Team (2017) based on information from HPECOSOC/ HPFD

There are many nature trails and trekking routes that falls under the jurisdiction of HPFD, and HPECOSOC coordinates with HPFD to conduct five trekking tours as indicated in **Table 2.4.7**. All of these five trekking sites are in the prioritised project areas, and there are some more 50 listed trekking routes coordinated and facilitated through HPECOSOC.

Table 2.4.7 Trekking Tours Conducted by HPECOSOC

| Name of Trekking Tours | Degree of Trek | Start/End Points | Price per day (INR) (All inclusive of equipment, staff, food & permits) | Total Cost (INR) (including travel by vehicles, handling charges, etc.) |
|--|------------------|--|---|---|
| Across the GHNP Tirthan to Sainj Valley (8 days) | Moderate to Hard | Aut Market, Kullu | 1,200 | 11,200 |
| Tirthan Valley Trek to the Source – Tirath (8 days) | Moderate to Hard | Aut Market, Kullu | 1,200 | 11,200 |
| Churdar Trek (Sarain to Deya, Shimla Hills) (5 days) | Moderate | Tourist Information Centre/ Shimla bus stand | 1,000 | 5,000 |
| Sainj Valley Trek GHNP Ecozone (6 days) | Easy | Aut Market, Kullu | 1,200 | 8,100 |
| Shalli Peak Trek (Shimla Hills) (1 day) | Easy | Tourist Information Centre/ Shimla bus stand | 1,400 | 1,500 |

Source: HPFD

Due to promotion of ecotourism in the Great Himalayan National Park (GHNP) in Kullu, the footfall of tourists, especially foreigners, is gradually increasing. The benefits are expected to contribute to the local communities in 13 panchayats in the vicinity of the GHNP. Ecotourism development activities have been accelerating in the recent years and over 130 potential sites were identified in the whole states. Recently, the HPECOSOC has worked out the strategy and proposal for developing three eco-circuits of a) moisture and water conservation eco-circuit, b) biodiversity conservation eco-circuit, and c) nature trail eco-circuit. These circuits are organised around various themes and about 50 listed trekking routes of HPECOSOC are categorized under these eco-circuits.

In addition, the society attempts to train nature guides to meet the demand from the local tourism market and to develop employable human resources amongst the local youths in the sector.

2.4.6 Ecosystem Services

HP state has a policy on Payment for Ecosystem Services (PES) with a recognition that the ecosystem services provide benefits to people in the form of goods and services. The HP state government recognises a decline in these services and for the rejuvenation and sustained benefits of ecosystem services requires “a voluntary, conditional agreement between at least one ‘seller’ and one ‘buyer’ over a well-defined environmental service or a land use presumed to produce that service”⁴. This means that the users of the services would agree on the provision of the services (through protection/ management/ conservation of natural resources) and the users of the services make payment for the service providers. The policy document also refers to the Himachal Pradesh Forest Sector Policy and Strategy 2005 and states that the incentive based mechanisms for watershed services, fire management, invasive weed control, tree plantation and to promote sustainable forestry and sustainable livelihoods are suggested as options for ecosystem management approaches. These policies provide the basis for the Project to adopt integrated approach to ecosystem management with people’s participation.

Since the formulation of the HP Policy on PES, some initiatives were attempted in the state both by the government and non-governmental sectors. Three case studies from HP based on the literatures are presented in **Part I Section 4.4.10**. The case studies suggest that 1) PES is a multi-stakeholder initiative, 2) can be designed at different levels and 3) can be formalised or kept informal. However, as Badola (2013) suggests that the economic valuation of the services would be essential to design the process.

2.5 Forest Products and Markets

Though, Chamba district is not included as the prioritised project districts, information on Chamba district is presented hereunder, since Chamba district is one of focal areas within HP in relation to the forest products and markets.

2.5.1 Major Forest Products

Timber and fuelwood are the major forest produces in the project area. The HP State Forest Development Corporation has been assigned with the responsibility of harvesting and sale of timber and fuel wood as per the directions of HPFD. Since there is a ban on green felling, the Corporation undertakes salvage operations for the dry, diseased, damaged and uprooted trees handed over to the Corporation by HPFD. The Corporation has five major and 3 minor Himkashth⁵ sales depots in the state and in the project area there are 3 minor sales depots (Shamshi-Kullu, Swarghat-Bilaspur and Udaypur-Chamba) and one major Himkashth sales depot (Dhanotu, Mandi). Sale of fuel wood to non-right holders in the state is managed by the Corporation through 42 timber/fuel wood depots. Since 1992, the Corporation has been supplying

⁴ Badola, Rucchi, et. al. (n.d.). Payment for Ecosystem Services for Balancing Conservation and Development in the Rangelands of the Indian Himalayan Region. (p. 180). In *Highland Altitude Rangelands and Their Interfaces in the Hindu Kush Himalayas* (2013).

⁵ Himkashth is the name of the sales depot of the HP State Forest Development Corporation.

fuel wood to HPFD to meet the requirement of local people as well as the government departments. The fuelwood depots in tribal areas are managed by HPFD. During 2010-11 to 2014-15, the Corporation supplied fuel wood worth 273 million INR⁶ to HPFD for meeting the requirements in tribal areas.

2.5.2 NTFPs

2.5.2.1 NTFP Procurement in Project Area

A wide range of NTFPs are available in all 7 proposed project districts by HPFD in Chamba, Lahaul and Spiti, Kullu and Mandi are the important districts for production of high altitude medicinal plants. Although the production/ outturn of high altitudinal medicinal plants has significantly declined, there is a potentiality to regenerate the resource base and enhance the production of these medicinal plants both from the forest and non-forest areas. **Table 2.5.1** presents the important NTFPs from the project area.

Table 2.5.1 NTFPs Procured and Traded in the Proposed Project Districts

| District | NTFPs currently traded | NTFPs under cultivation | Value addition of NTFPs |
|----------------|---|--|---|
| Bilaspur | Resin, katha, myrabolans, pine needles | Myrobolans and aloe vera | HP State Forest Development Corporation runs a resin processing unit in Bilaspur. |
| Chamba | Pathan Bel, Muskbala, Revandchini, Patlain roots, Bhutkesi, Kapurkachri, Guchhi, Bankakri, Moss Grass, Dhoop, Nagchhatri, Rhododendron flower, Atis/Patis, Birmi, Ban Lahsun, Kadu etc. | Atis, Bankakri, Kadu, Muskbala, Nagchhatri, Kalajeera | |
| Lahaul & Spiti | Kalajeera, Dhoop, Atis/Patis, Artemisia, Kuth, Kadu, Ban-ajwain, Puskarmool, Seabuckthorn, Bankakri, Guchhi | Kuth, Seabuckthorn, Puskarmool, Atis, Bankakri and Kadu | Seabuckthorn Society has set up a pulp processing unit in Lahaul. |
| Kinnaur | Neoza, Dhoop and Somlata are the important ones. Small quantities of Juniper, Taxus leaves, kala jeera, Lichens(Chhadila), Kadu, Singli-Mingli are also available. | Atis/ Patis, Bankakri, Kadu, Salampanja | |
| Kullu | Kadu, patish, ban kakri, guchhi, rakhal, lichens, berberis roots, reetha, kakar singhi, jatamansi | Atis/ patis, bankakri, kadu, kuth, chora, rakhal, belladonna, valeriana, ratanjot, nagchhatri, ban lahsun, seabuckthorn, hath panja | Aromatic oils from cedar wood, tagetes and others. processing of dhoop. herbal medicines from different NTFPs |
| Mandi | Berberis roots, tejpatta, rhododendron flower, ban haldi, kail cones, kunish cones, cedar rosettes, riha, green moss grass, lichens, guchhi, resin, pine needles, nirgal etc. | Rakhal, valeriana, kuth, kutki, belladonna, myrabolans, chirayata, aswagandha, aloe vera, safed musli, tulsi, berberis, horse chestnut | Processing of berberis roots in small quantities, aromatic oils from cedar wood, costus, tegetes, bach, valeriana, kapur kachri, juniper etc. |
| Shimla | Resin, kadu, lichens, kuth, guchhi, khanor, wild pomegranate, Marigold etc. | | |

Source: JICA Study Team (2017)– compilation of information from interaction with different stakeholders, from Annual Reports, Working Plans of HPFD etc.

⁶ GoHP (2016). Report of CAG of India on Public Sector Undertakings (Economic Sector) for the year ended 31st March 2015.

(1) Mandi District

In Mandi district, currently the major NTFPs in procurement and trade are berberis roots, tejpatta, rhododendron flower, ban haldi, ritha, kail and kunish cones, moss grass etc. Other NTFPs are collected from the forest but in small quantities. During 1970s and 1980s, muskbala, rakhal, kadu and kail cones were collected and traded in volumes and now the production has significantly declined. Singli-mingli was collected in huge volumes during 1986-87 (94 MT from Mandi and Jogindernagar forest divisions) and thereafter the production was decreased. More number of NTFPs are available in Nachan forest division in comparison

Table 2.5.2 Important NTFPs Exported from Nachan Forest Division, Mandi

(Unit in MT)

| NTFPs | 2017-18 | NTFPs | 2017-18 |
|--------------------------------------|---------|------------------|---------|
| Berberis roots | 66.5 | Ban Haldi | 7.7 |
| Kail, kunish cones and cedar rosette | 24.5 | Green Moss Grass | 11.5 |
| Burans flower | 31.9 | Lichens | 2.7 |
| Tej patta | 1.0 | Dori ghash | 1.3 |

Source: JICA Study Team (2017) compiled the information from records of Nachan Forest Division.

Table 2.5.3 Important NTFPs Exported from Mandi Forest Division

(Unit in MT)

| NTFPs | 2014-15 | 2015-16 | 2016-17 |
|----------------|---------|---------|---------|
| Berberis roots | 527.7 | 2899.4 | 2060.2 |
| Tejpatta | 21.9 | 0 | 0 |
| Ritha | 0 | 4 | 51.9 |
| Burans flower | 0 | 1 | 5.25 |
| Muskbala | 0 | 0.9 | 0 |

Source: JICA Study Team (2017) compiled from records of Mandi Forest Division.

to Mandi and Jogindernagar forest divisions. Tejpatta is an important forest produce of Jogindernagar forest division. The farmers have started cultivating muskbala, kuth, kadu etc. Hansraj trader, a private entrepreneur is involved in cultivation of rakhal and berberis roots. The agency is involved in processing of berberis roots. There are two industries in Mandi district involved in processing of medicinal and aromatic oils – Hari industries, Baggi and Aum Aroma Ratti Industrial Area, Nerchowk. Both are primarily involved in processing of cedar wood oil. Chamba district is very rich in availability of medicinal plants and there has been well established system of procurement and trade by the traders based in Chamba as well as in Kangra districts. The buyers in Amritsar have set up their own network of buyers/ agents to procure from the right holders and transport them to Majith Mandi, Amritsar. The important NTFPs of the district are pathan bel, rhododendron flower, bhutkeshi, muskbala, dhoop, kadu, guchhi, chukhri/ revandchini, nagchhatri, bankakri etc. The collection/ production of atis, bankakri etc. has fallen in last 5-10 years. In many places, the right holders engage gurkha labourers to collect NTFPs from difficult and inaccessible areas.

Table 2.5.4 Important NTFPs Exported from Chamba Circle

(Unit in MT)

| NTFPs | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | Total |
|---------------------|---------|---------|---------|---------|---------|--------|
| Pathan bel | 49.2 | 67.5 | 19 | 38.9 | 51.6 | 226.2 |
| Rhododendron flower | 50.2 | 11.2 | 7.7 | 35.1 | 6.9 | 111.1 |
| Muskbala/Nihani | 16.3 | 19.6 | 10.5 | 26.05 | 37.2 | 109.65 |
| Patlain roots | 30.6 | 16 | 3.9 | 30.8 | 2.5 | 83.8 |
| Kadu/Karu | 15.6 | 5.8 | 1.2 | 13.5 | 12.3 | 48.4 |

| NTFPs | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | Total |
|-------------|---------|---------|---------|---------|---------|-------|
| Bhutkesi | 19.2 | 3.1 | 2.1 | 18.9 | 4.7 | 48 |
| Revandchini | 5.4 | 10.2 | 1.2 | 14.6 | 1.4 | 32.8 |
| Nagchattari | 0 | 3.1 | 4.7 | 16.46 | 6.1 | 30.36 |
| Kapurkachri | 1.8 | 0 | 0 | 13.7 | 0 | 15.5 |
| Bankakri | 10.1 | 1.8 | 0.4 | 2.16 | 0.6 | 15.06 |
| Birmi | 0 | 0 | 0 | 6.4 | 7 | 13.4 |
| Dhoop | 1.5 | 2.4 | 0.7 | 3.8 | 1.7 | 10.1 |
| Lahsunia | 0 | 0 | 0 | 3.85 | 4 | 7.85 |
| Moss grass | 6.7 | 0.2 | 0 | 0 | 0 | 6.9 |
| Guchhi | 0.7 | 1.7 | 1.3 | 0.83 | 1.7 | 6.23 |

Source: JICA Study Team (2017) – compiled from information from Statistical Cell, HPFD

The HP state government initiated a Green Gold Project in November 2002 under Swarnajayanti Gram Sawrozgar Yojana (SGSY)⁷ in six blocks of Chamba district with a budget allocation of 148.8 million INR to uplift the BPL households through infrastructure development and technical assistance to adopt floriculture, dairy farming, and cultivation of medicinal and aromatic plants. Under the project, 185 SHGs were trained and supported for cultivation of atis, bankakri, kadu and muskbala and around 600 bighas (1bigha=0.16 ha) were brought under herbs and flower cultivation in seven blocks. Over the project period these SHGs sold herbs worth 5.3 million INR with a net income of 4.25 million INR⁸.

(2) Lahaul & Spiti District

The Lahaul & Spiti district is an important habitat for high altitude medicinal plants. Most of the ayurvedic pharmaceutical and trader/ buyers of medicinal plants intend to procure medicinal plants from this district. Traders in Delhi and Amritsar give preference to products coming from Lahaul area. Kuth, patis, kadu, bankakri, kala jeera, guchhi, dhoop, artemisia, ban-ajwain etc. are some of the important NTFPs collected from Lahaul forest division. Traditionally people from Lahaul have been into cultivation of kuth/ costus. Once known for its kuth economy, now the economy of Lahaul has been transformed to a potato and vegetables based economy. Now the magnitude of cultivation has gone down because of increased farming of vegetables such as potato, green peas and cauliflower for their profitability. While from cultivation of cauliflower one farmer can earn about 70,000 INR in one season (3-4 months) from one *bigha*, the income from kuth in one *bigha* in 3 years will be around 70-80,000 INR⁹. The traders from Kullu area come to Lahaul area to buy the forest produces. Since the Gram Panchayats were providing export permits for transportation of NTFP/ medicinal plants till last year, there are no data available with the forest division on the volume of NTFP/ medicinal plants collected and transported out of the forest division.

Since last 9-10 years the cultivation of seabuckthorn has been given importance by different stakeholders including the Government. CSK HP Agriculture University, Palampur implemented a project on value chain of seabuckthorn during 2008-14 with a financial assistance of 41.1

⁷ A central government scheme launched in 1999 for sustainable livelihoods and precursor to the National Rural Livelihood Mission (NRLM).

⁸ <http://drdachamba.org/Projects/GreenGold/start.htm>

⁹ From the consultation with Ajay Enterprises, Trader of NTFP in Akhada Bazaar, Kullu

million INR from ICAR/National Agriculture Innovation Project¹⁰. The University has developed agro-technique of seabuckthorn cultivation and processing technologies for value addition seabuckthorn for RTS squash, juice, syrup, jam, toffee, and tea from leaves, and powder etc. Plantation of seabuckthorn was undertaken in 100 ha through 350 farmers from 25 villages, who are the members of Lahaul-Spiti Seabuckthorn Cooperative Society, Keylong. The Seabuckthorn Society has established a processing unit of 30 MT/month capacity at Gemur, Lahaul for pulp making. The Society supplies the pulp and seed to the Lahaul Potato Society, Raison, which is making food products using the pulp and seed. Last year it has also supplied one ton leaves @450INR/kg to Panchkula based processing unit Chandigarh Agri-tech. Currently the University is undertaking a project work on introduction of Russian seabuckthorn varieties in Lahaul & Spiti district.

The Lahaul Medicinal and Aromatic Plants Growers Cooperative Society (MPGC) has been formed and promoted by PRAGYA (a civil society organisation having its office in Gurgaon and operates in India and other countries). The society has 480 members and they are involved in cultivation of kuth/ costus and puskarmool/inula. The Society has set up two medicinal plants nurseries at Billing and Shansha villages to provide quality planting material to the farmers. The society has a tie up with Dabur India for sale of the both the produce. Last year the members sold 20 MT of kuth/ costus and 30 MT of puskarmool/inula to Dabur and earned revenue of 10.8 million INR¹¹. In addition to the Society sold 2.5 MT of puskarmool worth 0.675 million INR to buyers in Kullu.

(3) Kinnaur District

Kinnaur district is well known for chilgoza/ neoza pine nut. There is an established system for collection and sale of neoza. Most of the villages, where neoza is available, collectively decide the timing and area to be given to contractors for collection. The areas are allotted to contractors through auction. The contractors engage labourers, mostly hired from outside, for collection of Neoza cones as well as for removal of pine nuts. The district has a potentiality to produce 120-150 MT of Neoza as per the working plan of Kinnaur but in last 10-12 year the production has significantly declined from 118.1 MT in 2004-5 to 7.1 MT in 2014-15¹². During 2013-14 the production was 25.1 MT. The contractors engage outside labourers to harvest the cones and no cones are left out in forest, which could help natural regeneration. The success of artificial regeneration of Neoza through plantation is limited and 32.4 ha were planted under Neoza during 2010-11 to 2013-14 by HPFD¹³.

¹⁰ NAIP/ICAR (2014). Final Report on A Value Chain on Seabuckthorn. CSK HP Agriculture University Palampur.

¹¹ From the correspondence with PRAGYA, 83, Sector 44 Institutional Area, Gurgaon, Haryana.

¹² Statistics cell, HP Forest Department, Shimla

¹³ <http://www.livemint.com/Sundayapp/LL7EYm8GxYdn76klm0eVSJ/The-Chilgozas-last-stand.html>

2.5.2.2 Marketing/ Value Chain of NTFPs in the Project Area

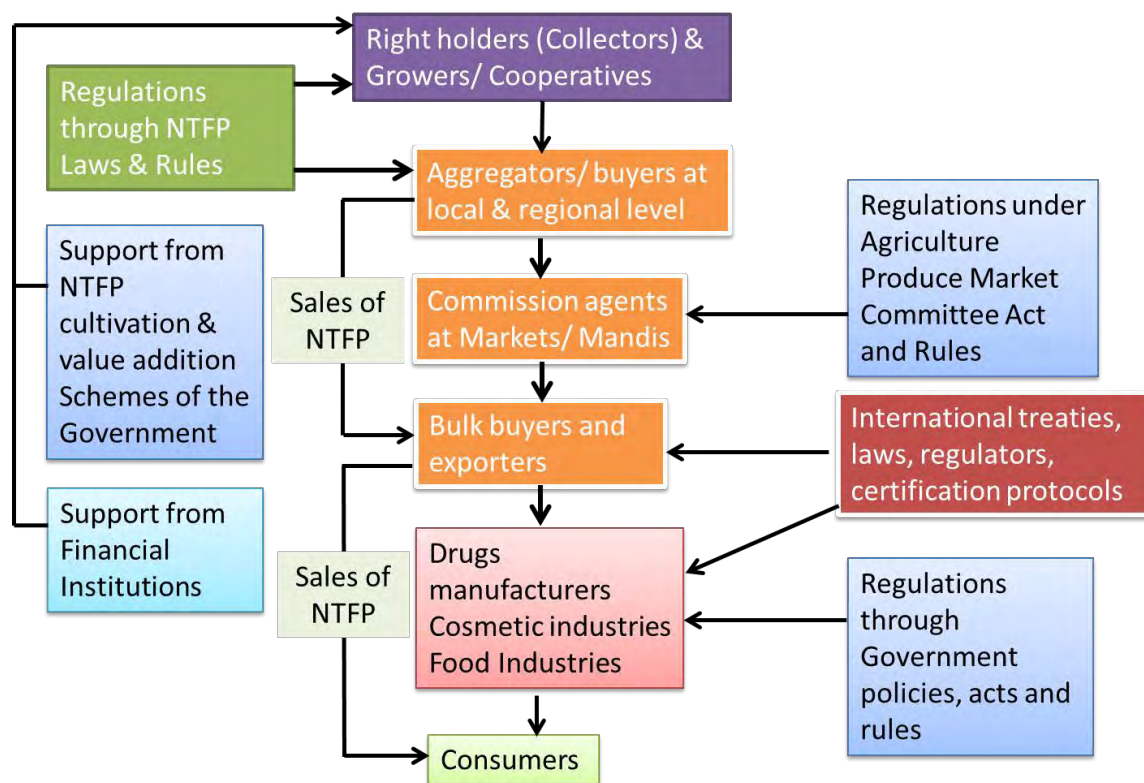
Most of the NTFPs from the state go to traders/ buyers in Amritsar and Delhi. There are local traders based in Kullu, Paprola/ Baijnath, Rampur, Shimla, Chamba, Shahpur, Solan etc. who buy the NTFPs from the right holders and send them to Amritsar, Delhi and other places. From the interactions with buyers, processing units, pharmaceuticals, local forest officials, it was understood that the major volume of the produces goes to Amritsar. A small amount of NTFPs are being directly bought by the local processing units. The Department of Ayurveda has three Pharmacies in Jogindernagar Paprola and Majra, which manufacture Ayurvedic medicines for about 1,200 institutions: hospitals, Ayurveda colleges, health centres. The Department of Ayurveda with the help of the State Civil Supply Corporation procures the raw materials for the pharmacies through a centralised tender. Most of the raw materials come from outside the state. These pharmacies do procure some fresh herbs/ NTFPs such as Amla and ginger directly from the farmers. There are about 180 pharmacies operating in the state but most of them procure the raw materials from outside the state i.e. Delhi and Amritsar.

Table 2.5.5 Important Markets for NTFPs

| NTFPs | Market |
|--|--|
| Berberis roots | Ramnagar, Uttarakhand |
| Guchhi | Delhi and Amritsar |
| Kail cones, Kunish cones and Cedar Rosettes | Kolkata and Tuticorin |
| Lichens and Moss Grass | Ramnagar, Uttarakhand, Amritsar |
| Neoza | Delhi |
| Ban Haldi | Bassi, Gujrat and Amritsar |
| Atis, Bankakri, Kutki, Rhododendron flower, Pathan bel and other NTFPs | Amrtisar |
| Tejpatta | Amritsar and Chandigarh |
| Kuth | Amritsar, Delhi, also exported to Europe by Nanda Medicinal Plants Exports, Manseri, Kullu |

Source: JICA Study Team (2017) – Compiled from records of Forest Divisions and market survey.

There are several prevailing procurement arrangements for marketing of NTFPs. The value chain of NTFPs including medicinal plants has been presented in the **Figure 2.5.1**.



Note: Signifies the most common/ prevalent trade arrangement in the state.
 Source: JICA Study Team (2017)

Figure 2.5.1 Existing Value Chain of NTFP in HP State

The most common practice is procurement through agents/ local buyers. The bulk buyers/ traders/ exporter has their agents placed in the areas well-known for different NTFPs and these agents can be the local shop keeper or a right holder or a person from the neighbouring village or a trader operating in the regional level, who basically buys the materials from the right holders and brings them to the temporary go down. The materials then are transported to the main go downs of the trader in the region, where necessary, sorting, grading and packaging are made. Then the materials are transported to go downs of the bulk buyers/ exporters in Delhi and/ or Amritsar. In some case the traders at the regional level send the produces to different extraction units, pharmaceuticals, nutraceuticals, food processing industries and perfumeries in India as well as abroad. The export is handled through shipment agencies based in Delhi and Mumbai. There are also cases where the right holders and growers of medicinal and aromatic herbs bring their produces to the local aromatic oil processing units. In case of marketing of neoza/ chilgoza in Kinnaur, the village council/ committee usually auction the entire process of collection and marketing to the trader (s). Then it becomes the responsibility of the buyer to collect and process neoza engaging labourers, arrange the transit pass from HPFD and transport the produce to Delhi for sale. **Table 2.5.6** presents a list of key stakeholders operating in the project area for NTFP research, cultivation, value addition and marketing.

Table 2.5.6 Important Stakeholder Operating in the Project Area for NTFP Research, Procurement, Processing and Trade

| Stakeholders | Project Area | Interventions |
|---|--|---|
| Pharmaceuticals/ Processing Industries | | |
| Government Ayurvedic Pharmacy | Jogindernagar, Mandi | Manufacturing of ayurvedic medicines |
| Tibetan Medical and Astro Institute, Dharamsala | Chauntara, Mandi Jispa, Lahaul | Manufacturing of Tibetan Medicine in Chauntara and cultivation of medicinal plants in Chauntara and Jispa |
| Vipasha Pharmaceutical | Shamshi, Kullu | Manufacturing of herbal medicines |
| Hari Industries and Natural Biotech Products, Baggi | Mandi, Kullu | Processing of aromatic and essential oils and oleoresin, medicinal plants extract |
| Lahaul Potato Society, Raison | Kullu, Lahaul and Spiti | Food products from seabuckthorn |
| Dabur India | Lahaul | Procurement of kuth and puskarool from growers |
| Traders/ Exporters | | |
| Nanda Medicinal Plants Exports, Manseri | Lahaul and Kullu | Cultivation, primary processing and exporting of different medicinal and aromatic plants/ herbs |
| Ajay Enterprises and other Traders in Akhara Bazaar, Kullu | Kullu, Lahaul and other areas | Procurement of medicinal plants and supply of these materials to different processing industries and wholesalers |
| Growers of Medicinal and Aromatic Plants | | |
| Twin Multiflora (Private Ltd. Company) | Kullu and Mandi | Cultivation of medicinal and aromatic plants and supply of raw materials to Alchem International, Delhi (Associated Company) |
| Lahaul Medicinal and Aromatic Plants Growers Cooperative Society (MPGC) | Lahaul | Cultivation of kuth and puskarool and supply to Dabur India and other buyers in Kullu |
| Lahaul and Spiti Seabuckthorn Society | Lahaul and Spiti | Seabuckthorn plantation, pulp processing, trading of dried leaves – supply of pulp to Lahaul Potato Society, Raison and dry leaves to Agri-tech, Chandigarh |
| Rishi Prasar Forest Produce Medicinal Herbs Procurement Cooperative Society, Ghorat | Mandi and Kullu | Nursery and production of planting materials of medicinal plants (for high altitude) Cultivation and supply of high altitude medicinal plants – atis, kuth, kutki, seabuckthorn, rakhal, nagchhatri, ratanjot etc. |
| Nichar Medicinal Plants Growers-cum-Collectors Cooperative Society, Nichar | Kinnaur | Nursery and cultivation of medicinal plants – atis, bankakri, chora etc. |
| Research Institutes/ University | | |
| CSIR – Institute of Himalayan Bioresource Technology (IHBT), Palampur | Lahaul, Chamba, Kullu | Research, standardisation of agro-techniques for cultivation of high altitude medicinal and aromatic plants including <i>Ginko biloba</i> . Release of new varieties of tagar, ban haldi and kapur kachri. Introduction of lavender cultivation in Chamba. Introduction of tagetes in Kullu. Production of quality planting materials Training and extension activities Research and development of processing technologies and machineries (aromatic oil processing). Infrastructure - modern laboratory for testing of pesticide residues, active ingredients of different medicinal and aromatic plants etc. Infrastructure – Aromatic oil extraction unit including a mobile extraction unit. |
| CSK HP Agriculture University, Palampur | Lahaul and Spiti | Value chain development and research on seabuckthorn Standardisation of agro-techniques of medicinal plants. |
| YS Parmar University of Horticulture and Forestry, Nauni | Kullu, Kinnaur, Shimla | Regional Research Stations in Bajaura, Kullu, Mashobra, Shimla and Sharbo, Kinnaur – research and extension on medicinal and aromatic plants, developing of quality planting materials. |
| HFRI, Pantaghathi, Shimla | Shimla, Kinnaur, Lahaul and Spiti, and other areas | Research and extension on medicinal and aromatic plants. Standardisation of agro-techniques of medicinal plants. Conservation of germplasms of high altitude medicinal plants and production of quality planting materials. Research and standardisation of intercropping of |

| Stakeholders | Project Area | Interventions |
|--|---|--|
| | | medicinal plants in orchards etc. – atis, bankakri and chora |
| NGOs | | |
| Himalayan Research Group (HRG), Shimla - recognised as a Core of Dept. of Science and Technology, Government of India. | Mandi, Shimla and other places in the state | Production of quality planting materials of medicinal plants species – kutki, atis, chirayata rakhal, dioscorea and tagar. Promotion of cultivation of medicinal plants among the farmers. Technology development - clonal propagation of <i>taxus wallichiana</i> . |
| Eco-Sphere, Spiti | Spiti | Cultivation and value addition of seabuchthorn |
| Pragya, Keylong, Rekong Peo, Chamba | Lahaul and Spiti, Chamba and Kinnaur | Promotion of cultivation of medicinal plants. Formation and strengthening of Lahaul MPGC. |
| Lahaul Kala Sangram Avam Rojgar Srijan Manch, Lahaul | Lahaul | Promotion of cultivation of medicinal plants. |

Source: JICA Study Team (2017): Market survey.

2.5.3 Forest Based Industries in the Prioritised Project Districts

There are seven cedar wood oil extraction industries in the prioritised project districts – four in Mandi, two in Kullu and one in Shimla district and these units procure deodar stumps from the allotted forest divisions. In the prioritised project area, there is one Government owned resin processing industry located in Bilaspur and this unit is managed by the HP State Forest Development Corporation. The resin tapped from the private land is mostly exported to resin processing units located in and around Hoshiarpur. There is no katha (khair) processing factory in the prioritised project area but 2 boiler units with a total production capacity of 750 MT are operating in Bilaspur forest division to produce katha and kutch. There are a number of saw mills, timber and fuelwood depots, joineries and furniture shops in the prioritised project area. HP Forest Development Corporation has a joinery unit in Shamshi. The Hari industries deals with cedar wood oil extraction and its associated/ partner industries are producing essential oils, oleoresin, natural extracts, natural oils from *veleriana spp.*, hedychium, costus/ kuth, tagetes, chora, bach/ bare, juniper berry and leaf, jatamansi, celery seed (oil and oleoresin), myrabolans, boswellia, brahmi, arjuna, gokhru, soapnut etc. The industry purchases raw material from local farmers and suppliers, and also procures the raw material from outside the state. There are number of ayurvedic pharmaceuticals operating in the prioritised project area (Jogindernagar, Chauntara, Shamshi Industrial Area, Kullu), who source raw materials mostly from markets outside the state.

2.6 Farm Forestry and Social Forestry

Poplar, willow, khair, bamboo etc. are some of the species planted by the farmers in their own land in some of the project areas. Farm forestry as commercial farming is not a common practice of farmers in major part of the state. Poplar and willow were traditionally being planted in the cold arid regions of the state – Lahaul & Spiti and Kinnaur to meet the fuel, fodder and small timber requirements. Willows grow near the timber line, where other vegetation does not exist and people in Lahaul consider it to be the life line for meeting the fuel, fodder and small timber needs. Massive plantation (1.637 million plants in 830 ha) of willow and poplar was taken up in

Lahaul & Spiti and Kinnaur under Desert Development Programme during 1980s¹⁴. Willow and poplar are being planted in number of plantation programmes/ schemes implemented by HPFD, and between 1950 and 2009-10, poplar and willow plantations were taken up in 14,958 ha and 10,407 ha respectively¹⁵. During 2011-12 to 2015-16, HPFD has planted 177,107 plants of poplar and 878,432 plants of willow under different plantation schemes¹⁶. Because of introduction of several varieties of poplar, the farmers have been planting it in different bio-geographic zones including sub-tropics as a commercial crop and they are able to sale it plywood and other industries. In case of willow, commercial cultivation is yet to be done on a large scale. HPFD provides seedlings of different species to the public planting on their own land to enhance the green cover of the state. Plantations are also being raised in community land and seedlings are distributed to public for plantation under MGNREGS. Annual events of tree planting i.e. van mahotsavs are organised to create awareness and promote tree planting. Planting of khair trees in the farms/ homestead land has been in vogue in the sub-tropical zones.

In comparison to farm forestry, orchard development is very common in the prioritised project area, especially in Shimla, Kinnaur, Kullu, Mandi, and Lahaul & Spiti districts. People, in general, do not want to lock up their land for planting forestry species, which has long gestation period and is not as remunerative as horticulture & off-season vegetables. The average operational holding is less than 1 ha, which is another reason for poor adoption of farm forestry by the people in the project area. The status of operational holdings in prioritised project districts has been presented in **Table 2.6.1**.

Table 2.6.1 Operational Holdings in the Prioritised Project Districts

| District | Operational Holdings (No) | Area of Holding (Ha) | Average Size of Holding (Ha) |
|-----------------------|---------------------------|----------------------|------------------------------|
| Bilaspur | 57,422 | 50,662 | 0.88 |
| Kinnaur | 10,757 | 14,227 | 1.32 |
| Kullu | 74,444 | 41,643 | 0.56 |
| Lahaul & Spiti | 4,274 | 6,743 | 1.58 |
| Mandi | 154,302 | 127,051 | 0.82 |
| Shimla | 110,005 | 117,937 | 1.07 |
| Prioritised Districts | 411,204 | 358,263 | 0.87 |

Source: Economic Survey 2016-17, Economics and Statistics Department, Himachal Pradesh.

As per the land use statistics, 28,766 ha culturable wasteland and 36,071 ha fallow land are available in the prioritised project districts (**Table 2.6.2**). There may be possibilities of farm forestry or social forestry or agro-forestry in some project villages/ area, if land is available. This would be identified during the process of micro level planning – during preparatory stage of project implementation. The scope may exist in Bilaspur, Mandi and Kullu districts.

¹⁴ Dhiman, RC (2014). Status of Poplar and Willow Culture in Himachal Pradesh in Indian Journal of Ecology. Vol 41 (1), pp. 1-9.

¹⁵ Ibid.

¹⁶ Annual Plantation Brochures of the Forest Department, HP.

Table 2.6.2 Culturable Wasteland and Fallow Land in Prioritised Project Districts

| District | Area under Misc. Trees and Groves (ha) | Culturable Waste (ha) | Fallow Land (ha) |
|-----------------------|--|-----------------------|------------------|
| Bilaspur | 151 | 6,061 | 2,499 |
| Kinnaur | 101 | 3,254 | 1,596 |
| Kullu | 3,804 | 1,300 | 3,066 |
| Lahaul & Spiti | 111 | 568 | 110 |
| Mandi | 352 | 4,505 | 7,620 |
| Shimla | 8,898 | 13,078 | 21,180 |
| Prioritised Districts | 13,417 | 28,766 | 36,071 |

Note: Refer to Part I 3.2.4 of this report for the definition of land use categories

Source: Statistical Year Book of Himachal Pradesh 2015-16, Department of Economics and Statistics, HP, Shimla

There is an enormous scope for intercropping of medicinal plants in the apple and other fruit orchards in the project area. The Himalayan Forest Research Institute, Pantaghathi has standardised agro-technique of intercropping of atis (*aconitum heterophyllum*), chora (*angelica glauca*), kadu (*picrorhiza kurooa*) and muskbala (*valeriana jatamansi*) in apple orchards. Atis and chora can also be intercropped in the cherry orchards. The area under fruits cultivation has been presented in **Table 2.6.3**.

Table 2.6.3 Area under Fruits Cultivation (2014-15)

| District | Area (Ha) under all fruits | Area (Ha) under Apple |
|-----------------------|----------------------------|-----------------------|
| Bilaspur | 7,313 | 5 |
| Kinnaur | 12,771 | 10,953 |
| Kullu | 29,823 | 25,813 |
| Lahaul & Spiti | 1,721 | 1,653 |
| Mandi | 36,359 | 16,311 |
| Shimla | 45,605 | 38,781 |
| Prioritised Districts | 133,592 | 93,516 |

Source: Department of Horticulture, HP.

2.7 Socio Economic Characteristics

A livelihood survey based on household interviews using questionnaire was conducted taking 341 households from 14 ranges from 10 territorial divisions and 4 wildlife divisions. The selection of ranges was done taking into account of the different bio geo region, river catchment and vulnerability index¹⁷. From each range two villages were selected. In the case of territorial divisions, one village under JFM and another from non JFM were selected from each range. In the wildlife divisions, two villages were selected from each of the identified range although none of them were recognised to be under the JFM or community based initiatives. Thus, all the villages surveyed in the wildlife divisions are categorised as non JFM. Accessibility to the survey villages was also taken into consideration as the field survey schedule was running into the rainy season.

A separate team was constituted by the JICA study team to conduct interview survey with the graziers/ grassland users using the questionnaire used in the livelihood survey. 59 respondents were interviewed, of which no households belonged to JFMC or any other community based forest management institutions.

Out of the overall sample households of 400, 14.3% or 57 households were recorded as female headed households, however, it was also observed that such households were mostly extended

¹⁷ Environment Master Plan, Department of Environment, Science and Technology, Government of Himachal Pradesh.

families and the male siblings of the head of the households and their families often lived in the same vicinity and functioned as de-facto heads of households.

Table 2.7.1 Sample Households – Livelihood Survey

| District | Division | JFM | | | Non JFM | | | Total | | | % of FHH to Division Total |
|---|------------|------------|-----------|------------|------------|-----------|------------|------------|-----------|------------|----------------------------|
| | | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total | |
| Bilaspur | Bilaspur | 33 | 7 | 40 | 18 | 2 | 20 | 51 | 9 | 60 | 15.0 |
| Chamba | Bharmour | 11 | | 11 | 8 | 1 | 9 | 19 | 1 | 20 | 5.0 |
| | Chamba WL | | | 0 | 15 | 5 | 20 | 15 | 5 | 20 | 25.0 |
| | Pangi | 6 | 4 | 10 | 7 | 3 | 10 | 13 | 7 | 20 | 35.0 |
| Kinnaur | Kinnaur | 17 | 2 | 19 | 20 | 1 | 21 | 37 | 3 | 40 | 7.5 |
| | Sarahan WL | | | 0 | 19 | 1 | 20 | 19 | 1 | 20 | 5.0 |
| Kullu | Kullu | 10 | | 10 | 7 | 3 | 10 | 17 | 3 | 20 | 15.0 |
| | Kullu WL | | | 0 | 17 | 3 | 20 | 17 | 3 | 20 | 15.0 |
| Lahaul & Spiti | Spiti(W/L) | | | 0 | 17 | 3 | 20 | 17 | 3 | 20 | 15.0 |
| Mandi | Karsog | 10 | | 10 | 10 | | 10 | 20 | 0 | 20 | 0.0 |
| | Mandi | 10 | | 10 | 7 | 3 | 10 | 17 | 3 | 20 | 15.0 |
| Shimla | Kotgarh | 8 | 2 | 10 | 8 | 2 | 10 | 16 | 4 | 20 | 20.0 |
| | Rampur | 7 | 3 | 10 | 8 | 3 | 11 | 15 | 6 | 21 | 28.6 |
| | Theog | 7 | 4 | 11 | 5 | 4 | 9 | 12 | 8 | 20 | 40.0 |
| Total of Territorial/ WL divisions | | 119 | 22 | 141 | 166 | 34 | 200 | 285 | 56 | 341 | 16.4 |
| Kangra | Bajjnath | | | 0 | 3 | | 3 | 3 | 0 | 3 | 0.0 |
| Kullu | Kullu | | | 0 | 11 | | 11 | 11 | 0 | 11 | 0.0 |
| Mandi | Mandi | | | 0 | 3 | | 3 | 3 | 0 | 3 | 0.0 |
| Kangra | Palampur | | | 0 | 1 | | 1 | 1 | 0 | 1 | 0.0 |
| Kullu | Parvati | | | 0 | 10 | | 10 | 10 | 0 | 10 | 0.0 |
| Kinnaur | Kinnaur | | | 0 | 20 | 1 | 21 | 20 | 1 | 21 | 4.8 |
| Shimla | Theog | | | 0 | 1 | | 1 | 1 | 0 | 1 | 0.0 |
| Solan | Nalagarh | | | 0 | 5 | | 5 | 5 | 0 | 5 | 0.0 |
| Shimla | Kotgarh | | | 0 | 2 | | 2 | 2 | 0 | 2 | 0.0 |
| Solan | Baddi | | | 0 | 2 | | 2 | 2 | 0 | 2 | 0.0 |
| Total of Graziers/ Grassland Users | | 0 | 0 | 0 | 58 | 1 | 59 | 58 | 1 | 59 | 1.7 |
| Grand Total | | 119 | 22 | 141 | 224 | 35 | 259 | 343 | 57 | 400 | 14.3 |

Source: Livelihood Survey, JICA Study Team (2017)

Rapid Field Survey using PRA tools was also undertaken with the selected villages and most of them were overlapping with the villages where the livelihood survey was scheduled to be carried out. Gender segregated groups were interviewed during the participatory data collection exercises were conducted. The details of the villages surveyed during rapid field assessment using PRA/ gender analysis are given in the table below.

Table 2.7.2 Villages Visited for PRA

| Division | Range | Village | Total No of HH (Approximate) | Dominant Social Group | Religion | Language Other than Hindi |
|----------|-----------|-------------------------|------------------------------|-----------------------|-----------------|---------------------------|
| Theog | Theog | Sarong | 80 | General | Hindu | Pahari |
| Theog | Theog | Barog GP | 65 | General | Hindu | |
| Kinnaur | Moorang | Ribba | 350 | ST (Kinnauri) | Hindu, Buddhist | |
| Bilaspur | Ghumarwin | Pannaul (Hamlet Tikkal) | 310 | General | Hindu | Kehlui, Pahari |
| Bilaspur | Ghumarwin | Malyawar | 500 | General | Hindu | Kehlui, Pahari |

| Division | Range | Village | Total No of HH (Approximate) | Dominant Social Group | Religion | Language Other than Hindi |
|-----------|-------------------------|----------------|------------------------------|-----------------------|---------------------|---------------------------|
| Bharamour | Bharamour | Sachwin* | 200 | ST (Gaddi) | Hindu | Gaddiali |
| Bharamour | Bharamour | Khani Village* | 130 | ST/ SC | Hindu | |
| Bharamour | Swai | Kuther* | 65 | ST | Hindu | Gaddiali, Pahari |
| Mandi | Drang | Sakrog | 200 | ST | | |
| Mandi | Drang | Surahan | 50 | General | Hindu | |
| Kullu WL | Inderlika National Park | Prini | 300 | ST | Hindu, Buddhist | Kehlui |
| Kullu | Manali | Kalath-Chiyal | 25 | Mixed all community | Hindu, Buddhist mix | |
| Lahaul | Keylong | Yournath | 6 | ST/ SC | Buddhist | |
| Lahaul | Pattan | Othang | 18 | ST | Hindu, Buddhist | |
| Spiti WL | Kaza | Sagnam | 72 | ST | Hindu, Buddhist | |
| Spiti WL | Kaza | Kibber | 80 | ST | Buddhist | |

Remarks: *Bharamour range in Bhalmour division will be covered under KfW Himachal Pradesh Forest Ecosystem Climate Proofing Project. Thus, the interactions were kept brief. Instead, Swai range in Balamour division was visited, which was to be covered by the KfW project (3rd phase) but the study team was informed that it was dropped by KfW project.

Source: JICA Study Team (2017) based on the field survey

The subsequent sections are based on the qualitative and quantitative data deriving from the above surveys. The data tables generated from the livelihood survey are given in the **Attachment II. 2.7.1**.

2.7.1 Livelihood

(1) Socio Economic Background

Out of the 400 survey households, 57.3% of the households reported to hold APL card while 34.2% held BPL card. Slightly higher proportion of the households held BPL status in the graziers/ grassland users' community. 44% of the respondents in Malana village, Parvati division held no card. The village was recently integrated into the local development system and the entire village households were granted of OBC status. Thus, the study team assumes that the village was in the process of transition and the figure should improve in due course. JFM villages in the territorial divisions indicated higher proportion of BPL households in comparison to non JFM households. Among the survey households, 24 households held Antyodaya status, which status is granted to the most economically vulnerable households. The division wise household economic status is given in the table below.

Table 2.7.3 Economic Status by Ration Card

Unit: %

| District | Division | % to Division Total | | | | | | | | | | |
|---|------------|---------------------|--------------|--------------|-------------|--------------|--------------|---------------|-------------|------------|------------|--------------|
| | | APL | | | BPL | | | Division Wise | | | | |
| | | JFM | Non JFM | Total | JFM | Non JFM | Total | APL | BPL | Antyodaya | No Card | Total |
| Bilaspur | Bilaspur | 63.6 | 36.4 | 100.0 | 71.4 | 28.6 | 100.0 | 55.9 | 35.6 | 8.5 | 0.0 | 100.0 |
| Chamba | Bharmour | 50.0 | 50.0 | 100.0 | 57.1 | 42.9 | 100.0 | 60.0 | 35.0 | 5.0 | 0.0 | 100.0 |
| | Chamba WL | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 55.0 | 40.0 | 5.0 | 0.0 | 100.0 |
| | Pangi | 40.0 | 60.0 | 100.0 | 57.1 | 42.9 | 100.0 | 26.3 | 73.7 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 46.4 | 53.6 | 100.0 | 45.5 | 54.5 | 100.0 | 70.0 | 27.5 | 2.5 | 0.0 | 100.0 |
| | Sarahan WL | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 55.0 | 25.0 | 15.0 | 5.0 | 100.0 |
| Kullu | Kullu | 41.7 | 58.3 | 100.0 | 62.5 | 37.5 | 100.0 | 60.0 | 40.0 | 0.0 | 0.0 | 100.0 |
| | Kullu WL | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 84.2 | 10.5 | 5.3 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 60.0 | 25.0 | 15.0 | 0.0 | 100.0 |
| Mandi | Karsog | 42.9 | 57.1 | 100.0 | 50.0 | 50.0 | 100.0 | 73.7 | 21.1 | 0.0 | 5.3 | 100.0 |
| | Mandi | 33.3 | 66.7 | 100.0 | 66.7 | 33.3 | 100.0 | 45.0 | 45.0 | 10.0 | 0.0 | 100.0 |
| | Kotgarh | 38.5 | 61.5 | 100.0 | 100.0 | 0.0 | 100.0 | 65.0 | 25.0 | 10.0 | 0.0 | 100.0 |
| Shimla | Rampur | 44.4 | 55.6 | 100.0 | 55.6 | 44.4 | 100.0 | 45.0 | 45.0 | 10.0 | 0.0 | 100.0 |
| | Theog | 66.7 | 33.3 | 100.0 | 66.7 | 33.3 | 100.0 | 63.2 | 15.8 | 10.5 | 10.5 | 100.0 |
| Total of Territorial | | 37.1 | 62.9 | 100.0 | 51.4 | 48.6 | 100.0 | 58.8 | 33.1 | 6.9 | 1.2 | 100.0 |
| Kangra | Bajjnath | 0.0 | 100.0 | 100.0 | - | - | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 72.7 | 18.2 | 0.0 | 9.1 | 100.0 |
| Mandi | Mandi | - | - | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 0.0 | 100.0 | 100.0 | - | - | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 33.3 | 22.2 | 0.0 | 44.4 | 100.0 |
| Kinnaur | Kinnaur | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | - | - | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 25.0 | 75.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | - | - | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Solan | Baddi | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland Users | | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 49.1 | 41.5 | 0.0 | 9.4 | 100.0 |
| Grand Total | | 32.7 | 67.3 | 100.0 | 42.9 | 57.1 | 100.0 | 57.5 | 34.3 | 5.9 | 2.3 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

(2) Social Groups

89.0% of the survey households were Hindus. 5.1% of the Buddhists and 4.4 % of Muslims were also found among the survey households. Buddhists are in Spiti WL and Kinnaur (Grassland users) and many of them would also follow the traditions of Hinduism especially in Kinnaur.

The composition of the social groups is given in the table below. The general category households constitute 35.3% and STs accounting for 35.1% of the total sample households. Amongst the graziers and grassland users, 50% of the households belong to STs.

Table 2.7.4 Social Groups of Surveyed Households

Unit: %

| District | Division | % to Division Total | | | | |
|---|------------|---------------------|-------------|-------------|-------------|--------------|
| | | Total | | | | |
| | | SC | ST | OBC | General | Total |
| Bilaspur | Bilaspur | 31.7 | 5.0 | 1.7 | 61.7 | 100.0 |
| Chamba | Bharmour | 5.0 | 90.0 | 0.0 | 5.0 | 100.0 |
| | Chamba WL | 0.0 | 80.0 | 0.0 | 20.0 | 100.0 |
| | Pangi | 0.0 | 70.0 | 0.0 | 30.0 | 100.0 |
| Kinnaur | Kinnaur | 22.5 | 65.0 | 10.0 | 2.5 | 100.0 |
| | Sarahan WL | 15.0 | 80.0 | 5.0 | 0.0 | 100.0 |
| Kullu | Kullu | 0.0 | 0.0 | 26.3 | 73.7 | 100.0 |
| | Kullu WL | 47.4 | 0.0 | 0.0 | 52.6 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Karsog | 40.0 | 0.0 | 25.0 | 35.0 | 100.0 |
| | Mandi | 35.0 | 20.0 | 0.0 | 45.0 | 100.0 |
| Shimla | Kotgarh | 55.0 | 0.0 | 0.0 | 45.0 | 100.0 |
| | Rampur | 9.5 | 0.0 | 0.0 | 90.5 | 100.0 |
| | Theog | 30.0 | 0.0 | 5.0 | 65.0 | 100.0 |
| Total of Territorial | | 23.1 | 32.4 | 5.2 | 39.2 | 100.0 |
| Kangra | Bajnath | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 9.1 | 36.4 | 9.1 | 45.5 | 100.0 |
| Mandi | Mandi | 66.7 | 0.0 | 0.0 | 33.3 | 100.0 |
| Kangra | Palampur | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Kullu | Parvati | 0.0 | 0.0 | 90.0 | 10.0 | 100.0 |
| Kinnaur | Kinnaur | 15.0 | 85.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 40.0 | 60.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Solan | Baddi | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland Users | | 13.8 | 50.0 | 22.4 | 13.8 | 100.0 |
| Grand Total | | 21.7 | 35.1 | 7.9 | 35.3 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

(3) Demographic Characteristics

The total population amongst the surveyed households was 2,130, of which 1,028 persons were women. The male female ratio was 0.9. The average size of a family amongst the surveyed households was 5.3 persons per family and the same is slightly bigger amongst the graziers/ grassland users as it was recorded as 6.0 persons per household.

Table 2.7.5 Demography of the Surveyed Households

Unit: Persons

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Division | | | F/M Ratio | Average Family Size |
|-------------------------------------|------------|-----------------------------------|------------|------------|------------|------------|------------|--------------|--------------|--------------|--------------|------------|---------------------|
| | | | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | | |
| | | | Male | Female | | Male | Female | | Male | Female | | | |
| Bilaspur | Bilaspur | 60 | 110 | 101 | 211 | 61 | 56 | 117 | 171 | 157 | 328 | 0.9 | 5.5 |
| Chamba | Bharmour | 20 | 40 | 25 | 65 | 21 | 19 | 40 | 61 | 44 | 105 | 0.7 | 5.3 |
| | Chamba WL | 20 | | | 0 | 52 | 45 | 97 | 52 | 45 | 97 | 0.9 | 4.9 |
| | Pangi | 20 | 19 | 29 | 48 | 26 | 29 | 55 | 45 | 58 | 103 | 1.3 | 5.2 |
| Kinnaur | Kinnaur | 40 | 59 | 49 | 108 | 49 | 53 | 102 | 108 | 102 | 210 | 0.9 | 5.3 |
| | Sarahan WL | 20 | | | 0 | 59 | 58 | 117 | 59 | 58 | 117 | 1.0 | 5.9 |
| Kullu | Kullu | 20 | 29 | 22 | 51 | 16 | 23 | 39 | 45 | 45 | 90 | 1.0 | 4.5 |
| | Kullu WL | 20 | | | 0 | 48 | 49 | 97 | 48 | 49 | 97 | 1.0 | 4.9 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | 59 | 60 | 119 | 59 | 60 | 119 | 1.0 | 6.0 |
| Mandi | Karsog | 20 | 30 | 23 | 53 | 26 | 19 | 45 | 56 | 42 | 98 | 0.8 | 4.9 |
| | Mandi | 20 | 29 | 24 | 53 | 26 | 34 | 60 | 55 | 58 | 113 | 1.1 | 5.7 |
| | Kotgarh | 20 | 20 | 14 | 34 | 28 | 23 | 51 | 48 | 37 | 85 | 0.8 | 4.3 |
| Shimla | Rampur | 21 | 26 | 23 | 49 | 29 | 22 | 51 | 55 | 45 | 100 | 0.8 | 4.8 |
| | Theog | 20 | 34 | 32 | 66 | 19 | 27 | 46 | 53 | 59 | 112 | 1.1 | 5.6 |
| Total of Territorial | | 341 | 396 | 342 | 738 | 519 | 517 | 1036 | 915 | 859 | 1,774 | 0.9 | 5.2 |
| Kangra | Bajjnath | 3 | | | | 9 | 9 | 18 | 9 | 9 | 18 | 1.0 | 6.0 |
| Kullu | Kullu | 11 | | | | 31 | 31 | 62 | 31 | 31 | 62 | 1.0 | 5.6 |
| Mandi | Mandi | 3 | | | | 11 | 3 | 14 | 11 | 3 | 14 | 0.3 | 4.7 |
| Kangra | Palampur | 1 | | | | 2 | 1 | 3 | 2 | 1 | 3 | 0.5 | 3.0 |
| Kullu | Parvati | 10 | | | | 32 | 37 | 69 | 32 | 37 | 69 | 1.2 | 6.9 |
| Kinnaur | Kinnaur | 21 | | | | 64 | 60 | 124 | 64 | 60 | 124 | 0.9 | 5.9 |
| Shimla | Theog | 1 | | | | 3 | 2 | 5 | 3 | 2 | 5 | 0.7 | 5.0 |
| Solan | Nalagarh | 5 | | | | 23 | 19 | 42 | 23 | 19 | 42 | 0.8 | 8.4 |
| Shimla | Kotgarh | 2 | | | | 6 | 2 | 8 | 6 | 2 | 8 | 0.3 | 4.0 |
| Solan | Baddi | 2 | | | | 6 | 5 | 11 | 6 | 5 | 11 | 0.8 | 5.5 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 187 | 169 | 356 | 187 | 169 | 356 | 0.9 | 6.0 |
| Grand Total | | 400 | 396 | 342 | 738 | 706 | 686 | 1,392 | 1,102 | 1,028 | 2,130 | 0.9 | 5.3 |

Source: Livelihood Survey, JICA Study Team (2017)

The number of persons migrating between April 2016 and March 2017 was 164 persons including 52 women. The average duration of migration amongst the territorial and wild life divisions was 8.2 months and 4.8 months for graziers/ grassland users. Further details are given in **Attachment II. 2.7.1** (Table in 3.4).

(4) Education and Literacy

Amongst the total population above 6 years, 15.4% was non-literate (9.0% of male population and 22.2 % of female population). Non-literacy rate was higher among the graziers and grassland users. Especially the households of the respondents from Theog, Nalagarh and Kotgarh of the graziers/ grassland users indicated very high non-literacy rates among the population above 6 years of age. From the rapid field survey, it was found out that the number of non-literate women increases among those beyond the age of 40 years whereas the same for men tends to increase among the slightly older age groups. 66.4% of above 6 male population and 51.6% of the women of above 6 in the survey villages received the education of 8th standard and above. Slightly lower proportion of women received formal education. Further details can be found in **Attachment II. 2.7.1** (Tables in 3.2 (1) - (7))

(5) Languages Other than Hindi Commonly Used in the Project Areas

The language commonly used for communication in the project area was Hindi along with other local languages. 77.3% of the population above 6 years of age can speak in Hindi and 74.3% can write. On the other hand, the English speaking population was 28.8% of the same and those who

can read was 44.8%. As for women, 70.7% of women above the age of 6 years can read and 81.4% of them can speak in Hindi, whereas 41.3 % of them can read in English but 25.5% could speak. In addition to English and Hindi, local dialects or languages are spoken. Those included Dogri, Gaddi, Gujjari, Pahari, Malwi, Punjabi and etc (**Attachment II. 2.7.1** (Tables in 3.3 (1) and (2)).

(6) Means of Livelihoods

Livelihood pattern in the surveyed villages can be summed up as agriculture/ horticulture + salary/ wage. All the village households adopt multiple livelihood strategies to earn their living. Many women may be engaged with wage work and income generation activities like handicrafts or handloom.

i) Agriculture and Horticulture

The rapid field survey provided the means of livelihoods commonly adopted in the survey villages as shows in the table below. Across all the villages surveyed, agriculture (vegetables and pulses cultivation) was found out to be the main livelihood activity. In many villages, agriculture and horticulture were practiced by many of the village households.

Table 2.7.6 Households Engaged in Agriculture and Horticulture

| District | Division | Village | Dominant Community | Agriculture | Horticulture |
|----------------|----------|-------------------------|--------------------|-------------|--------------|
| Shimla | Theog | Sarong | General | ⊙ | ⊙ |
| Shimla | Theog | Barog GP | General | ⊙ | △ |
| Kinnaur | Kinnaur | Ribba | ST (Kinnauri) | ⊙ | ⊙ |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | General | ⊙ | - |
| Bilaspur | Bilaspur | Malyawar | General | ⊙ | △ |
| Chamba | Bhalmour | Kuther | ST | ⊙ | △ |
| Mandi | Mandi | Sakrog | ST | ⊙ | - |
| Mandi | Mandi | Surahan | General | ⊙ | - |
| Kullu | Kullu WL | Prini | ST | ⊙ | ⊙ |
| Kullu | Kullu | Kalath-Chiyal | Mix | ⊙ | ⊙ |
| Lahaul & Spiti | Lahaul | Yournath | ST/ SC | ⊙ | ⊙ |
| Lahaul & Spiti | Lahaul | Othang | ST | ⊙ | ○ |
| Lahaul & Spiti | Spiti WL | Sagnam | ST | ⊙ | ⊙ |
| Lahaul & Spiti | Spiti WL | Kibber | ST | ⊙ | - |

Remarks: ⊙—more than 70% of the households in the village are engaged. ○—more than 30% of households in the village are engaged. △—less than 30% of households in the village are engaged.

Source: JICA Study Team (2017) based on the field survey

A similar tendency was seen in the findings from the livelihood survey. 17.1% of the respondents from the territorial and wildlife divisions and 43.9% of the graziers/ grassland users identified themselves as subsistence farmer. The commercial farmers were 8.3% in territorial and wildlife divisions and 3.7% in the graziers/ grassland users. Main crops grown by the sample households included maize (54.8%), wheat (51.3%), potato (36.0%), pulses (36.3%) and green peas (22.3%). Vegetables including cauliflower, cabbage, tomatoes etc are also produced. Out of 400 households, 162 households grew apple. Kinnaur has the highest number of apple growing

households (30 households) followed by Kotgarh, Kullu, Sarahan WL and Kullu WL divisions. The livelihood survey data showed that the substantial sum of income was earned from apple. Nuts were grown by a small number of households among the survey households. The findings from the livelihood survey is given in **Attachment II. 2.7.1** (Tables in 13 and 14).

ii) Salaries and Wages

In addition to income earned from agriculture and horticulture, many families earned wages either from government or private sector employment or wage/ contractual work. According to the livelihood survey, 5.2% and 7.4% of the population work in the private sector and government sector respectively. 5.7% are engaged in daily wage or agriculture labour work and 3.0 % of the population is engaged in the skilled wage labour work. On the other hand, the field interactions with the villagers revealed that they do not rely on their income from the wage work as the opportunities are not always readily available. The group discussions during the rapid field survey, the study team also came to understand that the villagers in Theog would commute to Shimla for work as the village is close to Shimla and in Kuther village, Balamour division, at least one member of the family migrates to Kangra for 6 months a year. Further findings are given in the **section 2.7.4 (3)**.

Table 2.7.7 Households Engaged in Salaries and Wages

| District | Division | Village | Dominant Community | Government Service | Labour/ Contractual | Private Service |
|----------------|-----------|-------------------------|--------------------|--------------------|---------------------|-----------------|
| Shimla | Theog | Sarong | General | - | - | - |
| Shimla | Theog | Barog GP | General | ⊙ | | △ |
| Kinnaur | Kinnaur | Ribba | ST (Kinnauri) | ○ | △ | ○ |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | General | △ | - | △ |
| Bilaspur | Bilaspur | Malyawar | General | - | - | - |
| Chamba | Bhalamour | Kuther | St | △ | - | △ |
| Mandi | Mandi | Sakrog | ST | △ | ⊙ | △ |
| Mandi | Mandi | Surahan | General | △ | ⊙ | △ |
| Kullu | Kullu WL | Prini | ST | - | - | - |
| Kullu | Kullu | Kalath-Chiyal | Mix | - | ⊙ | ○ |
| Lahaul & Spiti | Lahaul | Yournath | ST/ SC | ⊙ | - | - |
| Lahaul & Spiti | Lahaul | Othang | ST | ⊙ | ⊙ | - |
| Lahaul & Spiti | Spiti WL | Sagnam | ST | ○ | △ | ○ |
| Lahaul & Spiti | Spiti WL | Kibber | ST | △ | - | - |

Remarks: ⊙—more than 70% of the households are engaged. ○—more than 30% of households are engaged. △—less than 30% of households are engaged.

Source: JICA Study Team (2017) based on the field survey

In the eastern side of the state such as Kinnaur and Lahaul & Spiti, seasonal workers from Nepal are engaged for the work in orchard and agriculture land and also tourism related work (i.e. management of the accommodation facilities). In the case of Kibber Wildlife Sanctuary, 434 workers were estimated to be originated from outside of HP state in 2010 and of which, 304 workers reported to be from Nepal¹⁸.

¹⁸ Source: Management Plan of Upper Spiti Landscapes (Kibber Wildlife Sanctuary)

iii) Animal Husbandry, Handicrafts and Other Activities

Animal husbandry (rearing of goats and sheep) was main livelihood activities in Prini village in Kullu WL division and Journath village in Lahaul division. Handicrafts were also commonly done in Prini village in Kullu wildlife division and Othang village in Lahaul division. In Kibber village in Spiti Wild life, small proportion of households are engaged in selling yak meat.

Table 2.7.8 Households Engaged in Animal Husbandry, Handicrafts and Other Activities

| District | Division | Village | Dominant Community | Animal Husbandry | Handicrafts/ Broom/ Mat making | Wool Handicrafts | Shop/ business |
|----------------|----------|-------------------------|--------------------|------------------|--------------------------------|------------------|----------------|
| Kinnaur | Kinnaur | Ribba | ST (Kinnauri) | | | △ | |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | General | | | | △ |
| Mandi | Mandi | Surahan | General | | ○ | | |
| Kullu | Kullu WL | Prini | ST | ◎ | ◎ | | △ |
| Kullu | Kullu | Kalath-Chiyal | Mix | | | | △ |
| Lahaul & Spiti | Lahaul | Journath | ST/ SC | ◎ | | △ | △ |
| Lahaul & Spiti | Lahaul | Othang | ST | | | ◎ | |
| Lahaul & Spiti | Spiti WL | Sagnam | ST | | | △ | △ |
| Lahaul & Spiti | Spiti WL | Kibber | ST | △ | | | |

Remarks: ◎ – more than 70% of the households are engaged. ○ – more than 30% of households are engaged. △ – less than 30% of households are engaged.

Source: JICA Study Team (2017) based on the field survey

The findings from the livelihood survey, economic activities other than primary occupation included vegetable cultivation, weaving, knitting, goat rearing, selling of milk products and small shop. Weaving was mostly done by women in the territorial and wildlife divisions whereas, among the graziers/ grassland users in Kullu, Parvati and Kinnaur, men were also engaged in weaving. Vegetable cultivation was popular in Theog and the grazier/ grassland user from Kangra, for which more number of men were engaged. Goat rearing was mostly done by men. Nearly equal number of men and women were engaged in selling of milk and milk products.

(7) Income and Expenditure¹⁹

i) Household Income

The annual income earned between April 2016 and March 2017 was surveyed. The average annual income of the survey households was estimated to be INR 204,126 with the median of INR 120,000²⁰. The figure for the territorial/ wildlife divisions was INR 215,684 and INR 132,697 for graziers/ grassland users. The maximum income was INR 2,100,000 and the

¹⁹ Due to the sensitive nature of the data, the respondents might not have disclosed or recalled all the details. However, the data offers an insight into the household economy in the potential project areas.

²⁰ An attempt was made to calculate the trimmed mean of household income by excluding extreme figures (10% exclusion). The trimmed mean household income was INR 184,665 for territorial divisions and INR 93,990 for graziers/ grassland users. Overall trimmed mean household income was arrived at INR 172,106.

minimum was INR 1,500. The average income level of the territorial and wildlife divisions was 62.5% higher than that of the graziers/ grassland users.

The female headed households earned significantly lower than that of male headed households. In the territorial and wildlife divisions, 48% less in JFM areas. Salaries, trading, agriculture, dairy, sale of livestock and orchards provide main sources of income amongst the territorial and wildlife divisions and dairy and sale of livestock contributes significantly to the grazier/ grassland user community. The table below summarises the division wise total average household income amongst the 400 households interviewed during the livelihood survey.

Table 2.7.9 Average Household Income among the Survey Households

Unit: INR

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Total | | |
|-------------------------------------|------------|-----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total |
| Bilaspur | Bilaspur | 60 | 245,432 | 123,936 | 221,133 | 204,285 | 228,000 | 206,782 | 229,888 | 147,061 | 216,083 |
| Chamba | Bharmour | 20 | 156,159 | | 156,159 | 276,914 | 216,000 | 269,300 | 203,119 | 216,000 | 203,797 |
| | Chamba WL | 20 | | | | 200,786 | 192,640 | 198,642 | 200,786 | 192,640 | 198,642 |
| | Pangi | 20 | 28,950 | 10,500 | 19,725 | 143,340 | 33,800 | 102,263 | 100,444 | 22,150 | 66,889 |
| Kinnaur | Kinnaur | 40 | 415,887 | 44,400 | 372,182 | 424,304 | 600,000 | 434,064 | 420,358 | 229,600 | 404,007 |
| | Sarahan WL | 20 | | | | 235,287 | | 235,287 | 235,287 | | 235,287 |
| Kullu | Kullu | 20 | 121,592 | | 121,592 | 168,993 | 121,400 | 154,715 | 141,110 | 121,400 | 138,154 |
| | Kullu WL | 20 | | | | 148,909 | 92,667 | 140,029 | 148,909 | 92,667 | 140,029 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 353,094 | 270,667 | 340,730 | 353,094 | 270,667 | 340,730 |
| Mandi | Karsog | 20 | 126,439 | | 126,439 | 128,363 | | 128,363 | 127,458 | | 127,458 |
| | Mandi | 20 | 101,430 | | 101,430 | 140,980 | 91,633 | 122,475 | 114,613 | 91,633 | 110,783 |
| | Kotgarh | 20 | 47,494 | 34,250 | 44,845 | 289,584 | 218,050 | 275,277 | 168,539 | 126,150 | 160,061 |
| | Rampur | 21 | 174,656 | 318,267 | 236,204 | 161,580 | 32,700 | 113,250 | 167,392 | 175,483 | 170,628 |
| Shimla | Theog | 20 | 463,113 | 228,800 | 377,908 | 256,300 | 46,550 | 163,078 | 376,941 | 137,675 | 281,235 |
| Total of Territorial | | 341 | 216,126 | 139,350 | 203,228 | 241,436 | 145,033 | 224,147 | 231,114 | 142,823 | 215,684 |
| Kangra | Bajinath | 3 | | | | 58,333 | | 58,333 | 58,333 | | 58,333 |
| Kullu | Kullu | 11 | | | | 31,925 | | 31,925 | 31,925 | | 31,925 |
| Mandi | Mandi | 3 | | | | 10,000 | | 10,000 | 10,000 | | 10,000 |
| Kangra | Palampur | 1 | | | | 50,000 | | 50,000 | 50,000 | | 50,000 |
| Kullu | Parvati | 10 | | | | 61,875 | | 61,875 | 61,875 | | 61,875 |
| Kinnaur | Kinnaur | 21 | | | | 141,925 | 7,500 | 135,204 | 141,925 | 7,500 | 135,204 |
| Shimla | Theog | 1 | | | | 288,000 | | 288,000 | 288,000 | | 288,000 |
| Solan | Nalagarh | 5 | | | | 371,400 | | 371,400 | 371,400 | | 371,400 |
| Shimla | Kotgarh | 2 | | | | 240,000 | | 240,000 | 240,000 | | 240,000 |
| Solan | Baddi | 2 | | | | 243,000 | | 243,000 | 243,000 | | 243,000 |
| Total of Graziers/ Grassland | | 59 | | | | 135,252 | 7,500 | 132,697 | 135,252 | 7,500 | 132,697 |
| Grand Total | | 400 | 216,126 | 139,350 | 203,228 | 215,421 | 140,988 | 204,606 | 215,662 | 140,363 | 204,126 |

Source: Livelihood Survey, JICA Study Team (2017)

The economic status wise household income is given in the table below. The data shows that the BPL households earn 35% of that of APL households. BPL households among the graziers/ grassland users are earning 20% more than that of APL households.

Table 2.7.10 Average Household Income among the Survey Households by Economic Status

Unit: INR

| District | Division | Economic Status | | |
|----------|------------|-----------------|---------|----------|
| | | APL | BPL | Atyodaya |
| Bilaspur | Bilaspur | 307,052 | 91,606 | 47,250 |
| Chamba | Bharmour | 259,950 | 104,167 | 127,750 |
| | Chamba WL | 282,000 | 84,025 | |
| | Pangi | 100,613 | 29,833 | |
| Kinnaur | Kinnaur | 527,671 | 93,121 | 110,400 |
| | Sarahan WL | 261,723 | 136,938 | 347,625 |
| Kullu | Kullu | 168,588 | 92,503 | |

| District | Division | Economic Status | | |
|-------------------------------------|------------|-----------------|----------------|----------------|
| | | APL | BPL | Atyodaya |
| | Kullu WL | 145,597 | 84,000 | 185,000 |
| Lahaul & Spiti | Spiti(W/L) | 460,633 | 114,600 | 238,000 |
| Mandi | Karsog | 138,075 | 35,933 | |
| | Mandi | 93,288 | 142,319 | 54,625 |
| Shimla | Kotgarh | 184,227 | 36,140 | 312,785 |
| | Rampur | 271,682 | 99,092 | 31,550 |
| | Theog | 386,183 | 128,497 | 77,000 |
| Total of Territorial | | 286,447 | 90,372 | 145,253 |
| Kangra | Bajjnath | 58,333 | | |
| Kullu | Kullu | 35,880 | 23,000 | |
| Mandi | Mandi | | 10,000 | |
| Kangra | Palampur | 50,000 | | |
| Kullu | Parvati | 73,500 | 27,375 | |
| Kinnaur | Kinnaur | 104,150 | 19,175 | |
| Shimla | Theog | | 288,000 | |
| Solan | Nalagarh | 348,000 | 455,000 | |
| Shimla | Kotgarh | | 180,000 | |
| Solan | Baddi | 336,000 | 150,000 | |
| Total of Graziers/ Grassland | | 98,761 | 111,989 | |
| Grand Total | | 266,691 | 94,198 | 145,253 |

Source: Livelihood Survey, JICA Study Team (2017)

The overall per capita income was INR 37,568 for territorial/ wildlife divisions and INR 18,637 for graziers/ grassland users with a total figure of INR 34,404. The division wise data is given in **Attachment II.2.7.1** (Table in 10.3).

ii) Household Expenditure

The average household expenditure between April 2016 and March 2017 was estimated to be 161,318 INR for territorial divisions and 232,496 INR for the graziers/ grassland users with the overall average expenditure of INR 171,817 and the median of INR 105,300²¹.

Expenditures are high for purchasing of food and farm inputs, cost of education for children and maintenance of house. A heavy expenditure was also seen for marriage. Among the graziers/ grassland users, the expenditure on fodder was high in Nalagarh, Kotgarh and Baddhi which was amounting INR 583,200INR, INR 306,000 and INR 204,540 respectively. The division wise average household expenditure is given in the table below.

²¹ An attempt was made to assess the trimmed mean of household expenditure by excluding 10% of the extreme figures. The trimmed mean household expenditure for the territorial/ wildlife divisions was INR 133,975 and the same for graziers/ grassland users was INR 207,596. The overall trimmed mean household expenditure was INR 142,880.

Table 2.7.11 Average Household Expenditure among the Survey Households

Unit: INR

| Division | No of Respondents | JFM | | | Non JFM | | | Total | | |
|--------------|-------------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total |
| Bilaspur | 60 | 225,623 | 98,700 | 203,411 | 150,783 | 91,600 | 144,865 | 199,209 | 97,122 | 183,896 |
| Bharmour | 20 | 91,536 | | 91,536 | 156,989 | 46,200 | 144,679 | 119,095 | 46,200 | 115,451 |
| Chamba WL | 20 | | | | 167,647 | 94,160 | 149,275 | 167,647 | 94,160 | 149,275 |
| Pangi | 20 | 79,943 | 43,785 | 65,480 | 93,706 | 77,733 | 88,914 | 87,354 | 58,334 | 77,197 |
| Kinnaur | 40 | 237,544 | 26,450 | 215,324 | 188,833 | 541,250 | 205,615 | 211,214 | 198,050 | 210,227 |
| Sarahan WL | 20 | | | | 170,578 | 8,300 | 162,464 | 170,578 | 8,300 | 162,464 |
| Kullu | 30 | 85,640 | | 85,640 | 109,921 | 85,550 | 102,610 | 95,638 | 85,550 | 94,125 |
| Kullu WL | 10 | | | | 154,805 | 128,833 | 150,909 | 154,805 | 128,833 | 150,909 |
| Spiti(W/L) | 20 | | | | 228,581 | 161,900 | 218,579 | 228,581 | 161,900 | 218,579 |
| Karsog | 20 | 233,730 | | 233,730 | 161,220 | | 161,220 | 197,475 | | 197,475 |
| Mandi | 20 | 184,026 | | 184,026 | 170,743 | 138,033 | 160,930 | 178,556 | 138,033 | 172,478 |
| Kotgarh | 20 | 98,575 | 63,250 | 91,510 | 203,173 | 190,700 | 200,678 | 150,874 | 126,975 | 146,094 |
| Rampur | 21 | 81,700 | 210,900 | 120,460 | 67,939 | 23,400 | 55,792 | 74,361 | 117,150 | 86,586 |
| Theog | 20 | 320,957 | 120,468 | 248,052 | 207,200 | 75,700 | 148,756 | 273,558 | 98,084 | 203,369 |
| Total | 341 | 181,609 | 98,182 | 168,592 | 165,407 | 111,185 | 156,189 | 172,172 | 106,077 | 161,318 |
| Baijnath | 3 | | | | 128,633 | | 128,633 | 128,633 | | 128,633 |
| Kullu | 11 | | | | 224,718 | | 224,718 | 224,718 | | 224,718 |
| Mandi | 3 | | | | 78,800 | | 78,800 | 78,800 | | 78,800 |
| Palampur | 1 | | | | 221,600 | | 221,600 | 221,600 | | 221,600 |
| Parvati | 10 | | | | 183,160 | | 183,160 | 183,160 | | 183,160 |
| Kinnaur | 21 | | | | 170,440 | 52,800 | 164,838 | 170,440 | 52,800 | 164,838 |
| Theog | 1 | | | | 110,400 | | 110,400 | 110,400 | | 110,400 |
| Nalagarh | 5 | | | | 730,174 | | 730,174 | 730,174 | | 730,174 |
| Kotgarh | 2 | | | | 391,200 | | 391,200 | 391,200 | | 391,200 |
| Baddi | 2 | | | | 282,300 | | 282,300 | 282,300 | | 282,300 |
| Grassland | 59 | | | | 235,594 | 52,800 | 232,496 | 235,594 | 52,800 | 232,496 |
| Total | 400 | 181,609 | 98,182 | 168,592 | 183,581 | 109,517 | 173,572 | 182,897 | 105,142 | 171,817 |

Source: Livelihood Survey, JICA Study Team (2017)

The household expenditure by the household economic status is given in the table below. Among the survey households in the territorial and wildlife divisions, the average household expenditure of BPL households was 45% of that of the APL household, while the BPL households among the graziers/ grassland users was 5% higher than that of the APL households.

Table 2.7.12 Household Expenditure by Economic Status

Unit: INR

| District | Division | Economic Status | |
|-----------------------------|------------|-----------------|---------------|
| | | APL | BPL |
| Bilaspur | Bilaspur | 248,603 | 100,236 |
| Chamba | Bharmour | 125,309 | 102,329 |
| | Chamba WL | 165,364 | 138,088 |
| | Pangi | 105,748 | 58,217 |
| Kinnaur | Kinnaur | 267,529 | 76,341 |
| | Sarahan WL | 213,827 | 102,340 |
| Kullu | Kullu | 104,104 | 79,156 |
| | Kullu WL | 168,474 | 96,250 |
| Lahaul & Spiti | Spiti(W/L) | 294,798 | 76,020 |
| Mandi | Karsog | 231,443 | 80,325 |
| | Mandi | 101,706 | 184,523 |
| Shimla | Kotgarh | 194,222 | 43,680 |
| | Rampur | 136,344 | 50,256 |
| | Theog | 250,975 | 112,990 |
| Total of Territorial | | 204,568 | 92,702 |
| Kangra | Baijnath | 128,633 | |
| Kullu | Kullu | 217,988 | 243,500 |
| Mandi | Mandi | | 78,800 |
| Kangra | Palampur | 221,600 | |
| Kullu | Parvati | 121,033 | 132,700 |

| District | Division | Economic Status | |
|-------------------------------------|----------|-----------------|----------------|
| | | APL | BPL |
| Kinnaur | Kinnaur | 239,211 | 91,767 |
| Shimla | Theog | | 110,400 |
| Solan | Nalagarh | 412,008 | 852,900 |
| Shimla | Kotgarh | | 446,400 |
| Solan | Baddi | 405,600 | 159,000 |
| Total of Graziers/ Grassland | | 218,654 | 231,327 |
| Grand Total | | 206,210 | 115,633 |

Source: Livelihood Survey, JICA Study Team (2017)

Per capita expenditure was also assessed. INR 31,009 for territorial/ wildlife divisions and INR 38,532 for graziers/ grassland users with an overall figure of INR 32,266. Division wise figure is given in the **Attachment II.2.7.1** (Table in 10.5).

(8) Seasonality of the Livelihoods

Across all areas except Bilaspur, winter (November – April) is the most challenging season of the year. Most households prepare for winter by stocking fuelwood, fodder and food. Sometimes rations run out but in such cases, neighbours help each other. Owing to the strong social capital nurtured in the communities in HP, they overcome such difficult situation through mutual help. It is also the season that most of the livelihood activities halt. Even handloom cannot be done in some areas as the snow is accumulated so much and thus, they cannot reach the other side of the home where the loom is kept. Due to the lack of opportunities for earning during winter, the vulnerability of many households in the proposed project district areas would increase during the winter season. The seasonal calendars from two villages are given in the **Attachment II.2.7.2**.

(9) Community Institutions

The study team made an attempt to find out what types of community institutions the villagers have been involved in. The respondents indicated their engagement in Ward Sabha, Gram Sabha, SHGs, Mahila Mandal for female villagers and Yuvak Mandal for male villagers. The villagers largely join these groups for obtaining new knowledge and skills including opportunities for improving income or financial assistance.

Amongst the 400 sample households, 187 were selected from JFM villages, the survey findings indicated that only 12 households identified themselves as members of JFMC or other community based forest management institutions and the meetings were attended largely by the head of households or spouse.

The rapid field survey findings also confirmed that Mahila Mandals were organised by women and Yuvak Mandal organised by male villagers and found to be active in half of the villages surveyed.

Table 2.7.13 Various Community Institutions in the Surveyed Villages

| District | Division | Village | Mahila Mandal | No of WSHG* | Yuvak Mandal | Other groups |
|----------------|----------|-------------------------|---------------|-------------|--------------|--|
| Shimla | Theog | Sarong | ○ | 4 | - | Male SHG Group, Watershed Groups |
| Kinnaur | Kinnaur | Ribba | ○ | - | - | Dev Committee |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | ○ | ○ | ○ | Activiti Groups under Mid Himalayan Project. |
| Bilaspur | Bilaspur | Malyawar | ○ | 1 | - | - |
| Chamba | Bhalmour | Kuther | ○ | 3 | - | - |
| Mandi | Mandi | Sakrog | - | 2 | ○ | - |
| Mandi | Mandi | Surahan | - | 1 | ○ | JFMC |
| Kullu | Kullu WL | Prini | ○ | 8 | ○ | - |
| Kullu | Kullu | Kalath-Chiyal | ○ | 2 | - | Male SHGs |
| Lahaul & Spiti | Lahaul | Yournath | ○ | ○ | - | - |
| Lahaul & Spiti | Lahaul | Othang | - | - | - | - |
| Lahaul & Spiti | Spiti WL | Sagnam | ○ | - | ○ | Bridam Ashram by an NGO |
| Lahaul & Spiti | Spiti WL | Kibber | ○ | - | ○ | Dev Committee, Mahila Bodh Sangathan, ATMA Group |

Remarks: * WSHG=Women SHG

Source: JICA Study Team (2017) based on the field survey

In the study area, Mahila Mandal/ Yuvak Mandal was frequently identified as an active community organisation. These organisations are mutual help organisation in nature but in some cases, Mahila Mandals were involved in forest management activities. It can be organised at the level of GP and thus, sometimes the villagers in the remote areas may be left out. The study team also came across a case that no members were accepted beyond the certain number of members and consequently some village women could not join the organisation even if they were interested. The outline of these organisations are given in **Table 2.7.14**.

Table 2.7.14 Mahila Mandal and Yuvak Mandal

| Type | Unit of Organisation/ Type of Registration | Membership | Activities |
|----------------------------------|--|--|--|
| Mahila Mandals | Village or Cluster of Villages Formalised Institutional Structure registered under Society's Registration Act | All Women between age 18-45 years Usually 15-20 members with a Chairwoman and Secretary | Anganwadi Swachh Bharat Abiyan (Clean India Mission) Literacy Campaigns and Training Women and Child development (Awareness and Nutrition) Family Planning Programmes Legal and Social Awareness Social Forestry (afforestation and rehabilitation of degraded land) Small Savings Small IGA – food processing and Dairy |
| Yuvak/Yuva Mandals / Youth Clubs | Gram Panchayat and Block Level Registered under the Society's Registration Act at Block Level | Youth (educated) between 13-35 years Mandatory 30% women members | Social avenue for personal and village level problems and solutions Youth education and employment/entrepreneurship Leadership Development Camps Skill Development Camps Sports, Art & Culture, Theatre Health and Population Issues Drug Abuse and Alcoholism Awareness Gender Sensitisation Monetary Award for Best Youth Club at District Level |

Source: JICA Study Team (2017) based on the field survey

(10) Government Schemes/ Programmes

The government schemes and programmes recognised by the villagers in the surveyed villages were mostly MGNREGS. During the field interaction with the villagers, the study team has come to know other services that the villagers received benefit. Those are given in the **Table 2.7.15**. In Kinnaur and Kaza, the Border Area Development Programme has assisted the villages to renovate temples. The villages in Shimla, Kinnaur and Kullu divisions indicated more number of interventions in comparison to those in other areas.

Table 2.7.15 Government Programmes/ Schemes in the Surveyed Villages

| District | Division | Village | MGNREGS | ICDS | Others |
|----------------|----------|-------------------------|---------|------|---|
| Shimla | Theog | Sarong | ○ | - | PMKSY*, Swachh Bharat, 14th finance commission |
| Kinnaur | Kinnaur | Ribba | ○ | - | BADP**, IPH Irrigation Channels, watershed block, Rural development |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | - | - | Mid Himalaya, Animal Husbandry |
| Bilaspur | Bilaspur | Malyawar | ○ | ○ | - |
| Chamba | Bhalmour | Kuther | - | - | - |
| Mandi | Mandi | Sakrog | - | - | - |
| Mandi | Mandi | Surahan | - | - | FDA 2010 |
| Kullu | Kullu WL | Prini | ○ | ○ | PMGSY***, Solar Light |
| Kullu | Kullu | Kalath-Chiyal | ○ | ○ | IWMP****, 14th finance commission |
| Lahaul & Spiti | Lahaul | Yournath | ○ | - | IPH |
| Lahaul & Spiti | Lahaul | Othang | ○ | - | Irrigation canal |
| Lahaul & Spiti | Spiti WL | Sagnam | ○ | - | BADP |
| Lahaul & Spiti | Spiti WL | Kibber | ○ | - | - |

Remarks: *PMKSY (Pradhan Mantri Krishi Sinchai Yojana) =Central Government Scheme to enhance land productivity; ** BADP (Boarder Area Development Programme) =Special assistance programme by the Ministry of Home Affairs for the remote and inaccessible areas; ***PMGSY (Pradan Mantri Gram Sadak Yojana) =Central Government scheme to provide all weather road connectivity to the areas without connectivity. ****IWMP (Integrated Watershed Management Programme) =Watershed development programme now integrated to PMKSY.

Source: JICA Study Team (2017) based on the field survey

2.7.2 Access to Financial Services

(1) Bank Account and Financial Services

Since the government of India promotes every person to have a bank account for efficient public service delivery, according to the livelihood survey, 90.8% of the male adults (18 years and above) and 82.8% of female (18 years and above) in the survey households have a bank account. An observation can be made that less number of population had bank account in the graziers/ grassland users. The reasons for not having the bank account included “no information” and “no income to save” (Graziers/ Grassland Users community only). On the other hand, the graziers/ grassland users’ community also showed interest in having a back account especially for saving. The average amount of savings was 25,435 INR and the number of persons saving was 853 persons (Male: 510 persons/ Female: 343 persons).

Table 2.7.16 Status of Savings and Utilisation of Bank Accounts for Other Types of Transactions between April 2016 and March 2017

| District | Division | Total | | | | | |
|-------------------------------------|------------|----------------------|---|-----------------------------------|--|--|--|
| | | No of Persons Saving | Average Number of Times Saving in a month | Average Amount of Monthly Deposit | Average Amount of Total Savings in INR | No of Persons Used Bank for Other Transactions/ Remittance | No of Persons Who used Bank for Insurance/ Pension |
| Bilaspur | Bilaspur | 111 | 1 | 1,943 | 17,665 | 16 | 5 |
| Chamba | Bharmour | 42 | 1 | 1,928 | 22,138 | | |
| | Chamba WL | 31 | 2 | 2,030 | 28,232 | | |
| | Pangi | 29 | 2 | 1,750 | 14,834 | | |
| Kinnaur | Kinnaur | 97 | 1 | 2,737 | 18,810 | | |
| | Sarahan WL | 50 | 2 | 3,178 | 27,706 | 2 | 2 |
| Kullu | Kullu | 34 | 1 | 1,321 | 22,588 | | |
| | Kullu WL | 32 | 1 | 1,818 | 35,950 | | |
| Lahaul & Spiti | Spiti(W/L) | 38 | 1 | 1,840 | 15,359 | | |
| Mandi | Karsog | 45 | 1 | 932 | 6,864 | 1 | 4 |
| | Mandi | 43 | 1 | 1,388 | 13,013 | 5 | 4 |
| Shimla | Kotgarh | 40 | 1 | 1,295 | 9,968 | 4 | 6 |
| | Rampur | 36 | 1 | 1,337 | 17,537 | | 1 |
| | Theog | 52 | 1 | 1,683 | 17,048 | 11 | 6 |
| Total of Territorial | | 680 | 1 | 1,872 | 18,666 | 39 | 28 |
| Kangra | Bajjnath | 10 | 1 | 750 | 29,200 | | |
| Kullu | Kullu | 44 | 1 | 7,204 | 144,239 | 6 | 2 |
| Mandi | Mandi | 5 | | 6,167 | 26,900 | 1 | |
| Kangra | Palampur | 2 | | | 37,500 | | |
| Kullu | Parvati | 26 | 1 | 2,607 | 33,377 | 1 | 1 |
| Kinnaur | Kinnaur | 79 | 2 | 5,151 | 15,004 | 9 | 6 |
| Shimla | Theog | 0 | | | | | |
| Solan | Nalagarh | 4 | 1 | | 14,250 | | |
| Shimla | Kotgarh | 0 | | | | | |
| Solan | Baddi | 3 | 1 | 4,000 | 15,000 | | |
| Total of Graziers/ Grassland | | 173 | 2 | 5,110 | 52,041 | 17 | 9 |
| Grand Total | | 853 | 1 | 2,422 | 25,435 | 56 | 37 |

Source: Livelihood Survey, JICA Study Team (2017)

The reasons for not using the banking services more frequently was mostly that “there is no need of transaction” and “bank is far (the average distance to the bank was 11km. In Sarahan WL, the average distance to the bank was maximum amongst other divisions recording 35 km.)”. No significant gender differences in these reasons for non-utilisation of banking services were observed.

(2) SHGs

Formation of SHGs in the surveyed villages have been facilitated by different initiatives. Some were organised by the initiative of ICDS or NRLM or FD. The WSHGs in Swai range in Bhalmour division appeared to have been organised under some corporate social responsibility initiative associated with the hydro power project in the area. From the field findings, the activities of the WSHGs are mostly limited to internal savings and lending. So far, some attempts were made to initiate income generation activities but unable to sustain.

According to the livelihood survey results, the number of households taking part in SHG based activities seemed to be limited. Out of 400 survey households, 18 households were the members of SHGs for savings and credit and 7 households joined SHGs for IGA. Out of 18 households, 14 households were from non JFM villages.

(3) Loan

Only a few WSHGs took loan from banks but their experiences were very difficult and have not led them to take loan more than once. The common way of using the loan was to divide the loan amount equally amongst the group members and each member will use it for her own purposes. Each member will also be responsible for repayment. However, the fear of default is prevailing and WSHG members are generally hesitant to take loan from the bank. The livelihood survey results reported that 50 persons took loan from the government bank, 3 persons from the private bank and 12 persons from Cooperatives between April 2016 and March 2017. They are male heads of households or other male members of the family. The average amount of loan taken from the government bank was INR 224,600 from the government bank, INR 350,000 from private banks and INR 206,364 from Cooperatives. The preferred usage of loan was mostly for agriculture and consumption followed by starting business. The training on micro finance was also received by women of 17 households out of total surveyed households of 400, which topic was on SHG formation, management, savings & credit.

Table 2.7.17 Status of Bank Loans taken by the Family Members

| District | Division | Government Bank | | Private bank | | Cooperatives | |
|-------------------------------------|------------|-----------------|----------------|--------------|----------------|--------------|----------------|
| | | Counts | Average Amount | Counts | Average Amount | Counts | Average Amount |
| Bilaspur | Bilaspur | 2 | - | | | | |
| Chamba | Bharmour | 1 | 25,000 | | | | |
| | Chamba WL | | | | | 1 | 45,000 |
| | Pangi | 1 | 25,000 | | | 2 | 100,000 |
| Kinnaur | Kinnaur | 8 | 302,500 | | | 4 | 222,500 |
| | Sarahan WL | 2 | 175,000 | 1 | 750,000 | | |
| Kullu | Kullu | 4 | 360,000 | 1 | 200,000 | | |
| | Kullu WL | 2 | 200,000 | | | | |
| Lahaul & Spiti | Spiti(W/L) | 2 | 400,000 | | | | |
| Mandi | Karsog | 6 | 130,833 | | | 1 | 75,000 |
| | Mandi | 4 | 145,000 | | | | |
| Shimla | Kotgarh | 4 | 320,000 | 1 | 100,000 | 2 | 55,000 |
| | Rampur | 1 | 450,000 | | | | |
| | Theog | 2 | 142,500 | | | | |
| Total of Territorial | | 39 | 235,385 | 3 | 350,000 | 10 | 135,556 |
| Kangra | Bajjnath | | | | | | |
| Kullu | Kullu | 5 | 200,000 | | | | |
| Mandi | Mandi | | | | | | |
| Kangra | Palampur | | | | | | |
| Kullu | Parvati | | | | | | |
| Kinnaur | Kinnaur | 6 | 175,000 | | | 2 | 525,000 |
| Shimla | Theog | | | | | | |
| Solan | Nalagarh | | | | | | |
| Shimla | Kotgarh | | | | | | |
| Solan | Baddi | | | | | | |
| Total of Graziers/ Grassland | | 11 | 186,364 | | | 2 | 525,000 |
| Grand Total | | 50 | 224,600 | 3 | 350,000 | 12 | 206,364 |

Source: Livelihood Survey, JICA Study Team (2017)

(4) Income Generation Activities

As above, the number of households taking part in SHG based income generation activity was very limited. In the case of WSHG in Surahan village, Mandi division, SHG members started Khadi (handloom) activities but the young lady who has started the activities left the village after marriage and since then, no activities were done. Most WSHGs only do savings and internal lending. However, women are interested in activities that they can do during winter seasons when not many options for income earning are available. The SHG related issues are further discussed in the **section 2.8**.

(5) Seasonal Migration and Group Cohesion

In some part of the survey area, some households seasonally migrate though not many. The migration is not only among the graziers but also is seen in the agriculturalists. In case, the agriculture plots are apart from each other, they would migrate from one place to another. Such case was observed in Sakrog village in Mandi division. When women from such families migrate, the group activities also suspend and affect the group cohesion. The data from the livelihood survey on migration is given in **Attachment II.2.7.1** (Table in 3.4).

(6) Different Types of Household Energy Used and Sources

The households in the surveyed villages use multiple sources of household energies including LPG, fuelwood, electricity, solar energy, and dried animal dung. Due to the power cuts during winter and erratic supply of LPG cylinders and for its cost, the village households still use fuelwood. It is also one of the preferred energy source for cooking and warming the house. In the areas where the electricity is available, induction cookers and electric heaters were occasionally used. The livelihood survey findings also reflect the field observation during the rapid field survey: 91.5% of the 400 households use fuelwood and 78.0% use LPG for household energy. Main sources of the fuelwood included government forest and agriculture field. Kinnaur and Spiti, a small proportion of households indicated that they would source from the Forest Department Depot and especially in Winter, the depot becomes important source of fuelwood for Lahaul & Spiti. In case, they are unable to meet the requirement from these sources, they would purchase. LPG cylinders are purchased from the local suppliers.

Table 2.7.18 Types of Household Energies Used

Unit: %

| District | Division | No of Respondents Interviewed (a) | % to the Total Number of Respondents (n=a) | | | | | |
|-------------------------------------|------------|-----------------------------------|--|------------|-------------|-------------|------------|-------------------------------|
| | | | Fuelwood | Biogas | LPG | Kerosene | Solar | Electricity (Grid Connection) |
| Bilaspur | Bilaspur | 60 | 98.3 | 0.0 | 78.3 | 11.7 | 1.7 | 6.7 |
| Chamba | Bharmour | 20 | 90.0 | 0.0 | 45.0 | 20.0 | 0.0 | 10.0 |
| | Chamba WL | 20 | 95.0 | 0.0 | 85.0 | 25.0 | 0.0 | 5.0 |
| | Pangi | 20 | 100.0 | 0.0 | 85.0 | 50.0 | 0.0 | 5.0 |
| Kinnaur | Kinnaur | 40 | 97.5 | 0.0 | 90.0 | 27.5 | 0.0 | 12.5 |
| Kullu | Sarahan WL | 20 | 95.0 | 0.0 | 85.0 | 10.0 | 5.0 | 10.0 |
| | Kullu | 20 | 95.0 | 0.0 | 95.0 | 20.0 | 0.0 | 0.0 |
| Kullu | Kullu WL | 20 | 85.0 | 0.0 | 100.0 | 25.0 | 0.0 | 10.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 70.0 | 0.0 | 100.0 | 45.0 | 5.0 | 5.0 |
| Mandi | Karsog | 20 | 70.0 | 0.0 | 85.0 | 10.0 | 0.0 | 0.0 |
| | Mandi | 20 | 100.0 | 0.0 | 45.0 | 0.0 | 0.0 | 5.0 |
| Shimla | Kotgarh | 20 | 75.0 | 0.0 | 85.0 | 10.0 | 5.0 | 25.0 |
| | Rampur | 21 | 90.5 | 0.0 | 38.1 | 4.8 | 4.8 | 4.8 |
| | Theog | 20 | 85.0 | 0.0 | 95.0 | 0.0 | 0.0 | 15.0 |
| Total of Territorial | | 341 | 90.6 | 0.0 | 79.8 | 18.2 | 1.5 | 8.2 |
| Kangra | Bajnath | 3 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 |
| Kullu | Kullu | 11 | 90.9 | 0.0 | 90.9 | 27.3 | 0.0 | 27.3 |
| Mandi | Mandi | 3 | 100.0 | 0.0 | 0.0 | 33.3 | 33.3 | 66.7 |
| Kangra | Palampur | 1 | 100.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| Kullu | Parvati | 10 | 100.0 | 0.0 | 70.0 | 50.0 | 0.0 | 0.0 |
| Kinnaur | Kinnaur | 21 | 95.2 | 0.0 | 90.5 | 71.4 | 0.0 | 0.0 |
| Shimla | Theog | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Solan | Nalagarh | 5 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Shimla | Kotgarh | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Solan | Baddi | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total of Graziers/ Grassland | | 59 | 96.6 | 0.0 | 67.8 | 42.4 | 1.7 | 8.5 |
| Grand Total | | 400 | 91.5 | 0.0 | 78.0 | 21.8 | 1.5 | 8.3 |

Source: Livelihood Survey, JICA Study Team (2017)

i. LPG

In most of the village households, LPG was available as reflected in the livelihood survey. However, in most places, the cylinders are used sparingly and used for occasional cooking and making tea. The supply can also be met with scarcity and in some cases, one to two weeks gap is experienced before another cylinder gets delivered. The rapid field survey findings indicated that the consumption of LPG was high in Prini village in Kullu wildlife division, where the village was located on the roadside. It was also observed that the consumption was high in Kaza WL areas in Lahaul division where the LPG cylinder was available at the lowest price amongst the surveyed villages. A slight variation is seen in the prices of the cylinder but between the ranges of 665 – 800 INR. per cylinder. Some of the village women indicated that the consumption of the fuelwood has slightly reduced after started using LPG. The average annual consumption of LPG cylinder was 5.4 cylinders per year according to the livelihood survey.

Table 2.7.19 Consumption of LPG in the Survey Villages

| District | Division | Village | Consumption | Cost |
|----------------|-----------|------------------------------|-------------------------------|----------------------------|
| Shimla | Theog | Sarong | (2,000 - 3,000 INR/ Year HH) | - |
| Shimla | Theog | Barog Panchayat (4 villages) | 0.75 cylinder/ month/HH | 800 INR/ cylinder |
| Kinnaur | Kinnaur | Ribba | 1/3 cylinder per month/ HH | 700INR/ cylinder |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | 0.5 cylinder/ month/ HH | 700 INR/ cylinder |
| Bilaspur | Bilaspur | Malyawar | 0.5 cylinder/ month/ HH | 700INR/ cylinder |
| Chamba | Bhalamour | Kuther | - | 770INR/ cylinder |
| Mandi | Mandi | Sakrog | 1/6 cylinder/ month/ HH | - |
| Mandi | Mandi | Surahan | 1/3 cylinder per month/ HH | 700 INR/ cylinder |
| Kullu | Kullu | Prini | 1 cylinder per month/ HH | - |
| Kullu | Kullu | Kalath-Chiyal | 1-1.5 cylinders per month/ HH | - |
| Lahaul & Spiti | Lahaul | Yournath | 0.5 cylinder per month/ HH | 700 - 830 INR/ cylinder |
| Lahaul & Spiti | Spiti WL | Sagnam | (850 INR/ month/ HH) | |
| Lahaul & Spiti | Spiti WL | Kibber | 1 cylinder per month/ HH | 665 INR/ cylinder |

Source: JICA Study Team (2017) Field Survey Findings.

In Kibber village, Spiti WIL, village women indicated their preference of LPG during summer season as it saves time and easy to use. On the other hand, they need to use fuelwood in winters as it is impossible to warm the house without fuelwood.

ii. Fuelwood

The livelihood survey data on fuelwood consumption showed an average of 103 kg per week per household. The consumption was high in Bilaspur, Chamba WL and Rampur. The graziers/ grassland users from Theog, Kinnaur and Mandi indicated 250 kg per week, 160 kg per week, and 147 kg per week respectively.

The data collected from Bilaspur through rapid field survey, 15 kg/ day was used for cooking. In Tikkal hamlet of Pannaul village in Bilaspur, women indicated that the fuelwood requirement reduced from 10-15 kg to 5-7 kg after they started using LPG. As for the usage of LPG, the users need to pay and thus, the usage was mostly limited to cooking the light food and tea which does not consume much LPG. On the other hand, fuelwood consumption during winter time increases in many folds. The village women indicated that it would increase by 4-5 times more during the winter seasons for warming the house in the eastern side of the surveyed areas. Where the villagers have orchard, the pruned branches and old trees which are replaced with younger ones will also be used as fuelwood. The qualitative accounts of the household energy and fuelwood consumption from the rapid field survey are given in the table below.

Table 2.7.20 Fuelwood Consumption in the Surveyed Villages

| District | Division | Village | Consumption | Cost |
|----------------|----------|-------------------------|--|---|
| Shimla | Theog | Barog GP | 30 kg | Free from the own agriculture field and forest. |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | 5-7 kg/ day (10-15 kg/ day in winter) | Free Forest/ agriculture land |
| Bilaspur | Bilaspur | Malyawar | 15 kg/ day | Free from Forest |
| Kullu | Kullu WL | Prini | 30 kg per day during winter time, the consumption increases by 5-6 times more. | Free from the forest. |
| Lahaul & Spiti | Lahaul | Yournath | 1,000k / year/ HH | 609 INR/ 100kg |
| Lahaul & Spiti | Spiti WL | Kibber | 10 Kg per day in summers and 40 - 50 kg / day in winters | Free from own agriculture land and forest |

Source: JICA Study Team (2017) Field Survey Findings.

In most places, village women said that the food tastes better if cooked with fuelwood and thus, they prefer to use it for cooking. Another reason for them to continue using the fuelwood is that they can get them free of cost from the forests.

iii. Electricity

All the households in the surveyed villages had electricity supply. However, power cuts were experienced in Kinnaur during winter time. The consumption of electricity is high in the villages in Yournath village in Lahaul division (INR 400 – INR 700 per month per household) and Kibber village in Spiti WL division (INR 500 per month per household). In the rest of the villages, the electricity bill was ranging between INR 150 – INR 200 per month per household. Livelihood survey findings also suggested that the electricity was yet to become a main energy source for household energy and 8.3% of the households indicated its consumption. In the winter time, 25 households out of 400 households indicated the usage of electricity as household energy.

iv. Other Source of Energy and Facilities

Kerosene was another household energy used by 18.2% of the households in the territorial divisions and 40.7% of the graziers/ grassland users. Average consumption of the kerosene was 8.5 litre per week and the consumption was high in Pangti, Kinnaur, Lahaul&Spiti divisions.

Solar energy was available in households in Ribba village in Kinnaur division while the livelihood survey reported only a small number of households use it for household energy.

In Sangam village in Spiti WL division, dried animal dung was also commonly used to supplement the household energy. On an average, 35 bags of dried animal dung per household are used as fuel in a year.

None of the villagers met during the rapid field survey were aware of bio briquets and thus, never used them as an alternative source of energy. Traditional chullas/ Tandoor and hamams were widely used in the village households in the surveyed villages. A few informants used smokeless chullas which are available from the local blacksmith at the price of INR 4,000 and Tandoor between INR 2,000 – 3,000.



1) Cooking Stove

Source JICA Study Team (2017)



2) Hamam – heating water

Figure 2.7.1 Cooking Stove and Hamam

2.7.3 Forest Uses

(1) Grazing/ Fodder/ Pasture Management

According to the livelihood survey results, commonly owned livestock amongst the survey households included cow, goat, sheep, and ox. Buffalo was also owned mostly amongst the graziers/grassland users with an average holding of 25.3. Though in small number, 50% of the respondents in Bilaspur division owned 1.4 buffaloes on an average. Cow is owned by 60% of the total survey households with an average holding of 1.5. The number of goats owned by the households varies between 1-150 and graziers could have as many as 150 goats. The sheep is also owned in a heard ranging between 2 – 90. The graziers have 37 sheep on an average. Nearly all the animals are grazed during summer either in the nearby government forest area or in the agriculture field and stall fed during the winter seasons. The average duration of grazing in the forest area including pastures accounted for 7.0 months.

All the villages visited during the rapid field survey have access to grazing land in the government forest area. In the case of Kibbe village in Spiti WL, the villagers have agriculture land where they graze their livestock and collect the agriculture residue to supplement the fodder. In Rispa village in Kinnaur division, the Gram Panchayat land is also used for grazing. As for cattle, in the surveyed villages, 60% to 70% of the fodder requirement is fulfilled from forest and remaining from the agriculture lands/and orchards and purchased feeds. As for sheep and goat, 90% of the requirements are met and the rest is supplemented from the agriculture land and orchard. The information on grazing areas and usage by the villagers is summarised in the table below.

Table 2.7.21 Grazing Area and Pasture

| District | Division | Village | JFMC | Season | Type of Forest | Area | Usage |
|----------------|-----------|-------------------------|------|-----------------|---------------------------------|----------------------|---------------------------------------|
| Shimla | Theog | Barog GP | No | Year round | UPF | 20 ha | Grazing, cutting grasses |
| Kinnaur | Kinnaur | Ribba | No | Jul - Sep | Government Forest | 230 ha | Grazing |
| Kinnaur | Kinnaur | Rispa | No | May - Oct | Gram Panchayat | 200 bigha* (32.1 ha) | Grazing and collecting grass |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | No | Year round | Government Forest | 62.4 ha | Grazing and cutting grass |
| Chamba | Bhalamour | Kuther | No | May - Nov | DPF | 200 ha | Grazing and cutting grass |
| | | | | May - Nov | Agriculture land | 13 ha | Grazing and grass cutting |
| Mandi | Mandi | Sakrog | No | Mar-Nov | Gov Forest Land | - | Grazing and cutting grass (Jul - Aug) |
| Lahaul & Spiti | Lahaul | Yournath | No | May - Oct | Government Forest (Kantachi) | 1 ha | Open grazing |
| | | | | May - Sept | Government Forest (Panglingchi) | 100 bigha* (8ha) | Open grazing |
| Lahaul & Spiti | Lahaul | Othang | No | Jun - Sep | Government Forest | 15ha | Grazing |
| Lahaul & Spiti | Spiti WL | Kibber | No | May - Oct | Village Pasture | 8ha | Grazing |
| | | | | 5 months a year | Agriculture land | 466ha | Grazing and collect residue |

*bigha is a local unit. The conversion rate adopted in this table is 1 bigha = 0.1605ha. but in Spiti, it is 0.08 ha.
Source: JICA Study Team (2017) Field Survey Findings.

Most of the villages surveyed indicated the reduced level of availability of grasses due to the weeds or by the pine needles covering the ground which prevent fodder grasses to grow. Commonly, villagers feed the livestock with the agriculture residue collected from their own agriculture land. Irrespective of the status of JFMCs, the villagers attempted to remove pine needles and weeds though not on a regular basis. The case of Yournath village, Lahaul division indicated the organised attempt. The coping strategies adopted by the villagers include 1) reduce the number of cattle/ livestock kept at home and 2) supplement with the agriculture residue and purchased feed from the market.

Table 2.7.22 Grassland and Pasture Management Activities

| District | Division | Village | JFMC | Issues in the Grassland/ Pasture | Management Activities |
|----------|----------|-------------------------|------|--|---|
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | No | - | Ban on grazing in plantation area |
| Mandi | Mandi | Surahan | Yes | Reduced availability of grass Pine needles cover the grasses and prevent the growth of fodder grass | Once the villagers removed the pine needles. |
| Kullu | Kullu WL | Prini | No | - | They remove invasive species between July - October on an individual basis. |

| District | Division | Village | JFMC | Issues in the Grassland/ Pasture | Management Activities |
|----------------|----------|----------|------|--|--|
| Lahaul & Spiti | Lahaul | Yournath | No | - | JFMC formed under FDA in the year 2007-08 and fencing was done. (Generally, Mahila Mandal takes care of issues like ban on wood cutting.) Forest is opened once a year for cutting of the fodder grass (November). As per the community rule, the offender is charged INR 5,000 per offence of cutting grass/ wood without permission. |
| Lahaul & Spiti | Spiti WL | Sagnam | No | Less availability of fodder grass | Only once a year in November, the forest is open for cutting grasses for fodder. |
| Lahaul & Spiti | Spiti WL | Kibber | No | Less grass availability of fodder grass (after the hydropower project) | Watering |

Source: JICA Study Team (2017) Field Survey Findings.

(2) NTFP

The livelihood survey results indicated 71 households out of 400 households collect various NTFPs. Ghucchi, Dhoop, and Kala Jeera are some of the NTFPs collected. Kala Jeera was collected in Pangi and by the Graziers/ Grassland users in Kinnaur, which adds up to 11 households in total. Small volume of Ghucchi and Dhoop are traded at the high price. In Sarahan range, on an average 70 kgs of Dhoop was sold at the rate of 900 INR. Ghucchi, known for a high value wild mushroom, could fetch INR 4,750 on an average and average sale volume ranges between 0.1 – 5.1 kgs. As for the value addition of the NTFPs, drying and sorting are commonly done but no other value addition was done for NTFPs. Problems identified by the survey households in relation to NTFP harvesting and marketing are below. The market information is commonly obtained by going to the market and mostly obtained by male adults in the family.

Table 2.7.23 Issues Related to NTFP Harvesting, Processing and Marketing Identified by the Survey Households (Livelihood Survey)

| Issues related to Harvesting | Issues related to Processing | Issues related to Marketing |
|---|--|--|
| Availability of NTFP in the forest is reducing. Too far to find the NTFP. Time consuming Permit/ restriction | Do not know how to process Processing tools are not available No man power for processing Permit/ Restriction | Far from the market No buyers will come to the village Low price and low profit Permit/ Restriction |

Source: Livelihood Survey, JICA Study Team (2017)

During the rapid field survey, the study team came to learn that NTFPs are collected in many villages from the forest nearby. Although the villagers did not refer to NTFPs as a source of income, the data suggests that they may be earning some amount of income out of NTFPs in Shimla, Ribba in Kinnaur, a part of Bilaspur, Mandi and Lahaul & Spiti. Pine needles and leaves, though not for sale, are collected by women to be used in the cattle sheds and to make manure.

Table 2.7.24 NTFPs Harvested in the Surveyed Villages

| District | Village | NTFPs | Volume/ Yield | Market/ Home Consumption |
|----------------|-----------------|-------------------------------------|-----------------------|---------------------------|
| Shimla | Sarog | Gucchi | 10 kg | Shimla/ Home Consumption |
| | | Bevri silli | 500 kg | |
| | | Dekochrii (Pasanbhed) | 200 kg | |
| | | Kashmall | 2,000 kg | |
| | | Marmelli | 1,500 kg | |
| | | Neel kanth | 3 kg | |
| | | Chahmer | - | |
| | | Cakadsingi | - | |
| Kinnaur | Ribba | Pine nuts | INR 160,000 - 250,000 | Ri Kongpio |
| | | Gucchi | 5 kg | Delhi |
| | | Jeera | 20 kg | - |
| Kinnaur | Rispa | Kadu | 500 kg | Home consumption |
| | | Nag chatri | 40 kg | |
| | | Pine nut | 2,000 kg | |
| | | Kala jeera | - | |
| | | Gucchi | 20 kg | |
| Bilaspur | Malyawar | Khair | INR 400,000 - 500,000 | - |
| | | Gan prirde | - | Village/ Home consumption |
| | | Herad (Terminaliya chebula) | - | |
| | | Behada (Terminaliya belerica) | - | |
| | | Amla | - | |
| | | Kakad singhi | - | |
| Bilaspur | Panol | Khair | 32 ha | |
| | | Pine resin | 30.4 ha | Bilaspur, Hoshiapur |
| Chamba | Kuther | Gucchi | 15kg @ INR 9500/kg | Village |
| | | Dhoop | 10 kg | |
| Mandi | Sakrog | Barbiris Roots | 2,500 kg | Uttarakhand |
| Kullu | Kalath-Chia yal | Gucchi | 2kg@10k | Home consumption |
| | | Wild mushroom | 50kg@INR 200/ kg | |
| | | Lingri | 500 kg | |
| | | Nag chatri | 200 kg | |
| | | Bukke | 2.5 kg @INR 400/ kg | |
| | | Kanifudu | 2.5 kg@400/ kg | |
| | | Cannabis | - | |
| Kullu WL | Prini | Gucchi | - | Home consumption |
| | | Wild mushroom (Chacchii) | - | |
| | | Wild edible vegetables-jarka,lingri | - | |
| Lahaul & Spiti | Yournayh | Kala jeera | - | Home consumption |
| | | Sindhu jeera | - | |
| Lahaul & Spiti | Kibber | Kala jeera | - | Home consumption |
| | | Gemin | 500 kg | |
| | | ratanjot | - | |
| Lahaul & Spiti | Sagnam | Ratanjot | 800 kg | Kaza |
| | | Salampanja | 400 kg | |
| | | Aliam | 300 kg | |
| | | Koziya | 50 kg | |
| | | Silajeet | - | |
| | | Ephadro | 1,200 kg | |
| | | Lanchu | 500 kg | |
| | | Eurashia | 2,500 kg | |
| | | Mushroom | 5,000 kg | |
| | | Kala jeera | 200 - 300 kg | |
| Lahaul & Spiti | Othang | Bara | 30-50 kg | Home consumption |
| | | Kadu | - | |
| | | Patis | - | |
| | | Panja | - | |
| | | Dhoop | - | |

* The data indicated in the table was collected from the male villagers of various villages.
Source: JICA Study Team (2017) Rapid Field Survey Findings.

(3) Land Holding including Forest and Grassland

The data revealed that only a very small number of households were found to be landless in the surveyed villages and most households had access to land for agriculture, orchard and also grassland/ private forest areas²². The results showed that 73% of the households in the territorial and wildlife divisions and 47% of the graziers/ grassland users have unirrigated agriculture land with an average land holding of 4.0 bigha or 0.32ha. 30% of the total number of survey households have unirrigated orchards with an average land holding size of 4.2 bigha or 0.34 ha. 45% of the households in the territorial and wildlife divisions own grassland/ pasture with an average plot size of 3.9 bigha or 0.31ha whereas only 4 households from Baijnath, Parvati and Kinnaur have 2.5 bigha or 0.2 ha of the same. The similar findings are seen from the rapid field survey as in **Table 2.7.25**.

Table 2.7.25 Land Holding in the Surveyed Villages

| District | Division | Village | Agriculture Land Unit: bigha | Others |
|----------------|-----------|-------------------------|------------------------------|---|
| Kinnaur | Kinnaur | Ribba | 3-4 | Every family has orchard ranging between 4 and 40 bighas. |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | 5 | - |
| Bilaspur | Bilaspur | Malyawar | 8-10 | All families have 1-2 bighas of private forest land. |
| Chamba | Bhalamour | Kuther | 3 | - |
| Mandi | Mandi | Sakrog | 4-6 | - |
| Mandi | Mandi | Surahan | 7 | All families have demarcated grassland of 1 bigha. |
| Kullu | Kullu WL | Prini | 2-3 | - |
| Kullu | Kullu | Kalath-Chiyal | 1.5-2 | - |
| Lahaul & Spiti | Lahaul | Yournath | 7 | - |
| Lahaul & Spiti | Spiti WL | Sagnam | 5 | - |

**bigha is a local unit. The conversion rate adopted in this table is 1 bigha = 0.1605ha. but in Spiti, it is 0.08 ha. Source: JICA Study Team (2017) Field Survey Findings.*

2.7.4 Gender and Community Forest Management

(1) Gender Roles in the Surveyed Villages

A clear gender division of labour was seen in the surveyed villages. Women would look after family and production of food crops for the family whereas men would carry out the heavy work in the farm and work outside of home or village to earn cash income. As reported in the subsequent **section (3)**, the gender gap in labour wages is evident. Most women would stay at home and, when needed, they take part in MGNREGS and other works near home which wages would not be as high as that is earned by men from outside.

²² In Himachal Pradesh, Nautor land, the right to use the wasteland with permission from the competent authorities, is given to those who are landless. Reserved and demarcated protected forests can also be notified as Nautor land.

(2) Daily Routine

Women in most villages wake up between 4-5 o'clock before men wake up and start with the domestic chores like cooking, cleaning house and taking care of livestock (on an average, every household has 1-2 cattles at least.). Once it is finished, women will go out either to the agriculture field or for wage work. As for women, collecting fuelwood, fodder or taking the animals to grazing are the most time-consuming activities. On the other hand, men will wake up 1-2 hours after women start their day. They will go out to the orchard or agriculture field or outside of the village for different types of work after breakfast. Men will get a few hours of free time in the evening after their work but women hardly have free time throughout the day. If women find time, it will be around lunch time (12:00 – 13:00) or dinner time (21:00 – 23:00).

Table 2.7.26 Daily Time Schedule – Case of Malyawar Village, Bilaspur Forest Division

| Male | Time | Female |
|---|-------|---|
| Wake up, do yoga, drink tea, bathing and to fill water. | 5:00 | Wake up and take bath, do yoga and make tea. |
| | 6:00 | Extract milk from their domestic animals. |
| | 7:00 | Preparing breakfast and having it. |
| | 8:00 | To prepare the children for school. |
| Go to fields | 9:00 | Go to the fields with small animals |
| | 10:00 | |
| | 11:00 | |
| | 12:00 | |
| Relax | 13:00 | Relax |
| Fill the fields | 14:00 | To fill water, Bringing wood from the fields, |
| | 15:00 | |
| | 16:00 | |
| | 17:00 | |
| Sometimes help | 18:00 | Extract milk |
| | 19:00 | Preparing food |
| | 20:00 | |
| Having food | 21:00 | Watching TV, listen to music otherwise sleep. |
| | 22:00 | |
| Watching TV | 23:00 | |

Source: JICA Study Team (2017) Field Survey Findings.

With this time use, one of the challenges for the women's group to continue working as a group was that the members do not find time to attend the meeting or to carry out the group based activities. Women also find it difficult to stay out of home more than a day as they will have to take care of their livestock in the evening.

(3) Wages

Wages provide a way to supplement the household income for many survey households. According to the field survey, for both men and women, agriculture, construction and orchard provides income earning opportunities. Such opportunities are mostly available within the village. More number of days men work for wages in comparison to women. The households from Non JFM areas earn more from agriculture and orchards in comparison to JFM areas where construction based wage work provide the major opportunity.

The tendency is that the wages for women are lower than that of men. Further, the time available with women is limited and thus, many women would take up the local opportunities.

Women especially those whose spouses are unable to earn, would participate in MGNREGS which daily wage is around 180 INR per day. In the case of orchard, pruning works could be paid as high as 600 INR per day as it is a technical work. The forestry work is second the lowest wage and this would make it difficult for mobilisation of the labourer since other works could be paying nearly 100 – 150 INR more. The summary of the gender wise wages is given in **Table 2.7.28**. This gender gap in wages draws men to higher paid jobs and women to the less. The younger educated generation, women could also be employed in public or private sectors.

Table 2.7.27 Average Wages in the Surveyed Villages

| | Labourers within the Village (INR) | | Labourers from Other Villages (INR) | | Labourers from Other Countries (INR) | |
|--------------|------------------------------------|--------|-------------------------------------|--------|--------------------------------------|--------|
| | Male | Female | Male | Female | Male | Female |
| Forestry | 204 | 204 | - | - | - | - |
| Construction | 350 | 283 | 430 | 388 | 408 | 344 |
| Orchard | 350 | 288 | 375 | 344 | 380 | 355 |
| Agriculture | 333 | 292 | 350 | 317 | 338 | 313 |
| MGNREGS | 180 | 180 | - | - | - | - |

Source: JICA Study Team (2017) Field Survey Findings.

(4) Ownership and Control of Household Assets

Women in all the surveyed villages did not own land except widows. All the land is registered under their spouses' name. Gold jewellerys were considered to be women's property but required the spouse or in-laws consent when in need of encashment. In Kinnaur, to prevent the fragmentation of the properties, polyandry was practiced in the past. Some women who are in their 50s and above may have a multiple number of spouses. The study team has been informed that a woman could have had 4-5 spouses. However, it is no longer practiced.

The land ownership based on the livelihood survey is given in the table below. Across all the land category, owners are predominantly male or other male members of the family. In the case of female headed households, the head of the household may have the ownership of the land but could also be owned by other male members of the family. Joint ownership of the male headed households and the spouse are yet to become common.

Table 2.7.28 Summary of the Land Ownership

| Land Category | Unit | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Male Member of the Family | Joint Ownership by all family members | Total | |
|---------------|-------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|---|---------------------------------------|-------|-------|
| Cultivable | Irrigated | Counts | 61 | 1 | 10 | 4 | 1 | 1 | 0 | 0 | 78 |
| | | % | 78.2 | 1.3 | 12.8 | 5.1 | 1.3 | 1.3 | 0.0 | 0.0 | 100.0 |
| | Unirrigated | Counts | 219 | 2 | 25 | 14 | 0 | 1 | 1 | 1 | 263 |
| | | % | 83.3 | 0.8 | 9.5 | 5.3 | 0.0 | 0.4 | 0.4 | 0.4 | 100.0 |
| Orchard | Irrigated | Counts | 40 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 44 |
| | | % | 90.9 | 0.0 | 6.8 | 0.0 | 0.0 | 2.3 | 0.0 | 0.0 | 100.0 |
| | Unirrigated | Counts | 86 | 3 | 11 | 3 | 0 | 0 | 0 | 1 | 104 |
| | | % | 82.7 | 2.9 | 10.6 | 2.9 | 0.0 | 0.0 | 0.0 | 1.0 | 100.0 |
| Forest land | Counts | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 14 | |
| | % | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 | |
| Grassland | Counts | 109 | 2 | 20 | 7 | 0 | 3 | 2 | 2 | 145 | |
| | % | 75.2 | 1.4 | 13.8 | 4.8 | 0.0 | 2.1 | 1.4 | 1.4 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

(5) Gender and Forest Resource Uses

In almost all the surveyed villages, women are the primary collector of the fuelwood and fodder from the forest area. Grazing is likewise mostly done by women in the surveyed villages. The study team surveyed the gender roles in NTFP harvesting, processing and marketing. Women are aware of the NTFPs that they collect. The list of NTFPs given in the **Attachment II.2.7.3** was generated through the discussions with men, which may suggest that the men may have more knowledge on NTFPs and the control over the marketable NTFPs while women may not. Further, collection of NTFPs take time and since most women are busy with other works, the collection of NTFPs is for children and older men. However, the livelihoods survey data has not indicated significant gender imbalance in division of tasks in NTFP collection and processing. A case study of Bilaspur is given in the **Attachment II.2.7.3** which supplements the findings from the livelihood survey.

(6) Roles of Men and Women in Forest Management

In the surveyed villages, not much of the forest management activities were undertaken. One of the common activities was firefighting and reporting of the illicit felling to FD. In many places where it is done, it is largely by women as most men are working outside of the village during the day. If men are in the village, they would help. The survey findings also suggested that women are not much aware of JFMC or VFDS whereas Mahila Mandal were well recognised and in some places are engaged in the social forestry and taking charge of watching over the illicit felling. The summary of the gender roles in the forest management based on the field findings is given in **Table 2.7.29**.

Table 2.7.29 Gender Roles in Forest Management

| District | Division | Village | Plantation | | Fire Fighting/ Reporting | | Fencing to prevent outsider's grazing | | Reporting Illicit Felling | |
|---------------|-----------|-------------------------|------------|---|-----------------------------|---|--|---|------------------------------|---|
| | | | M | F | M | F | M | F | M | F |
| Shimla | Theog | Sarong | | | | | | | | |
| Shimla | Theog | Barog GP | | | | | | | | |
| Kinnaur | Kinnaur | Ribba | | | | | | | | |
| Kinnaur | Kinnaur | Rispa | * | | | | | | | |
| Bilaspur | Bilaspur | Pannaul (Hamlet Tikkal) | * | | * | | | | | * |
| Bilaspur | Bilaspur | Malyawar | | | * | * | | | * | * |
| Chamba | Bhalamour | Kuther | | | | | | | | |
| Mandi | Mandi | Sakrog | * | * | * | * | * | * | | |
| Mandi | Mandi | Surahan | | * | | * | | | | |
| Kullu | Kullu | Prini | | * | | | | * | | |
| Kullu | Kullu | Kalath-Chiyal | | * | * | * | * | * | | |
| Lahaul&Spiti | Lahaul | Yourmath | * | * | | | * | * | | |
| Lahaul& Spiti | Lahaul | Othang | | | | | | | | |
| Lahaul& Spiti | Spiti WL | Sagnam | | | | | * | | | |

Source: JICA Study Team (2017) Field Survey Findings.

2.7.5 SHGs and SHG based Livelihood Interventions

To understand the present situations and the status of SHGs organised by different government department and/or donor projects (or collectively called “promotor agencies”) in the project area, a separate study was conducted by the Study Team during the study period. **Table 2.7.30** summarises the brief profiles of the SHGs that the Study Team contacted, interviewed and observed activities. Detailed analysis of individual SHGs surveyed is available in **Attachment II.2.8.1**.

Table 2.7.30 SHGs Visited during the Study in the Target Districts

| No. | Name of Group | District | Block | GP | Promoter Agency | Bank credit | Main activity |
|-----|------------------------|----------|-------------|---------------|-------------------|-------------|------------------------|
| 1 | Pinni (4 SHGs) | Kullu | Kullu | Pinni | Block Dev. Office | N | Saving, inter-loan |
| 2 | Seobag | Kullu | Nagar | Gahar | HPMHWDP | N | Handloom |
| 3 | Kotadhar | Mandi | Sadar | Kotadhar | HPMHWDP | N | Handloom |
| 4 | Neen (8 SHGs) | Shimla | Basantpur | Neen | NRLM | N | Saving, inter-loan |
| 5 | Anganwari Promoted SHG | Shimla | Basantpur | Neen | WCD | N | Saving, inter-loan |
| 6 | Knitting | Kullu | Kullu | Naraish | HPMHWDP | N | Knitting |
| 7 | Piplage | Kullu | Kullu | Bashona | HPMHWDP | N | Handloom |
| 8 | Maa Kali | Kullu | Kullu | Dughilag | NABARD/MKM | Y | Multi-purpose |
| 9 | Bagii | Kullu | Kullu | Dunkhri Gahar | NABARD/MKM | N | Saving, inter-loan |
| 10 | Panchvir | Kullu | Banjar | Tung | NABARD/BTCA | Y | Socks, food-processing |
| 11 | (4 SHGs) | Kullu | Banjar | Manglour | NABARD/BTCA | Y | Pine needle Handicraft |
| 12 | Nav Durga | Mandi | Balh | Chalah | NABARD/MSJVS | Y | Basket/bags |
| 13 | Sholi Mata | Mandi | Mandi Sadar | Bhroun | NABARD/ MSJVS | Y | Knitting/bags |

Source: JICA Study Team (2017)

(1) SHGs starting as a Saving and Credit Group

It was observed that typically a SHG in the project area starts with forming a homogeneous group of 10 to 20 members and initiating regular savings (approx. INR.50 to 100 per month) that are collected and saved in a bank as common fund of the group. The group takes loan from the group fund (internal-loan) with the monthly interest rate of 1-2 % and the repayment period is agreed by the members. After saving and inter-loaning practice for at least 6 months, the promotor agencies evaluate the SHG for its capacity and maturity to proceed to the next step such as bank credit linkages (NABARD SHG-Bank Linages) and income generation programs (MHWSDP). Often NGOs or field level functionaries appointed by the project/department support this task. The SHGs tend to hesitate to take their first loans from the banks owing to lack of confidence in making the repayment or social concerns attached to debts. Nevertheless, the promotor agencies such as the SHG Promoter Institutes (SHPIs) of NABARD are responsible to encourage the groups by imparting better understanding on bank credit utilisation and repayment schedule. Although the purpose of taking loans varies widely e.g., from house construction to buying a knitting machine, the SHGs with bank credits were all engaged in income generating activities (individual or group) to ensure regular loan repayment by each SHG member.

(2) SHGs undertaking IGAs

Table 2.7.31 shows some general characteristics of the SHGs in the project area. All of the observed SHGs engaged in a range of IGAs, as highlighted in **Table 2.7.30**. SHGs receive technical training and often the financial assistance during the preliminary stages of the IGAs. For example, under HPMHWDP, the SHGs were upgraded to the Common Interest Group (CIGs) when they started an IGA after the completion of saving and inter-loaning for 6 months. Some of the CIGs were trained to hone their traditional skills such as handloom and knitting into a professional aptitude, while others were linked to watershed and farmed based IGAs such as vermi-compost making, horticulture, and agriculture produce processing. Nevertheless, many SHGs remain limited to savings and inter-loaning activities like in case of most Anganwadi promoted SHGs graduated to bank linkages only through convergence with other programmes.

Table 2.7.31 Characteristics of SHGs in Project Area

| Items | Description |
|------------------------|---|
| Membership | 10-20 members One may belong to more than 1 SHGs formed by different promotor agencies |
| Age | Around 20 to 60 years |
| Occupation/activities | Agriculture/Horticulture/Livestock/Dairy |
| Criteria of membership | Depends on promoter agency's criteria but mostly the homogeneity is the basic criteria |
| Education | From 5 class to 10 plus 2 (Often the Chairperson and secretary are selected from more educated than others) |
| Saving | Majority INR 100 per month but INR 50 per month especially for new groups |
| Inter-loaning | Amount of loan: INR 5,000, Interest: 1-2% per month |
| Bank credit | Bank loan after 6 months supported by SHPIs of NABARD |
| SHG Activities | Microfinance: Saving and inter-loaning Handicraft: handloom, knitting, craft making, shopping bags, basket, Agriculture: vermi compost, vegetable, dairy, horticulture Forest: pine needles collection, craft making, medicinal herbs, herbal soaps, mushroom, apricot oil from NTFP |
| Income from activities | INR 1,000 - INR 5,000 per member |
| Training | Basic knowledge of record keeping Technical training on IGA |
| Benefit of SHGs | Increased social security by saving regularly and access to loan with low interest rate Additional income, increase in income by group IG activities. Better future provision for children Financial Independence Stepped out of the domestic sphere and became physically more active. |
| Main issues | Marketing of products Work individually and not efficient without coordination among members No provisions for future activities in post project. |

Source: JICA Study Team (2017)

Due to the regional characteristics of Himachal Pradesh, many SHG groups prefer handloom and knitting for their IGAs by upgrading their traditional skills. For these activities, women take advantages of working at home where they have their own machines and can spare time in between the busy household works. Average income of the SHGs undertaking IGA varies from INR 1,000 to INR 5,000. Income also depends on the seasonal market of their produce. Handloom and Knitting groups tend to earn more during winter because of high demands for woollen products in these seasons and more time at their disposal, as agriculture peak season is from June to August. Two case studies of SHGs and lessons learnt are given in **Attachment II.2.8.2**.

(3) High Educational Level as Advantages of Exiting SHGs

One striking feature in the project area is the high education level of the SHG members. While the members above 40 years are found to be less educated (from 5 to 10 class), younger members between 20 and 30 are mostly educated up to 10 plus 2. Therefore, the latter are generally responsible for record keeping, managerial work, and expected to facilitate organisation and management of SHG clusters in later stage. It was observed that some of these educated women play a role of facilitators (or “active women” as explained in **Part I Chapter 6 Section 6.7.5**) to supervise other members.

(4) SHGs Not in Operation

It was also observed that not all SHGs function as envisaged in its discipline. A number of functional SHGs keeps fluctuating while the formation and dissolution of groups continues. One community member in Sundernagar, Mandi explained that her SHG went defunct only two to three months after the formation, due to the lack of understanding on objectives of SHGs. Anganwadi worker tried to remobilise this group but again it failed due to absence of desired coordination among members. Similarly, not all women are driven to participate in SHGs even when they are aware of their benefits. In the existing debate between loan versus grant driven strategy, the inclination to take a grant is often bigger than for an interest-linked loan. MGNAREGA also was commonly cited by village women that is a central government scheme and provides secure income according to the number of days worked. Less penetration of SHGs or microfinance was observed in the area in which people are engaged in more stable economic activities. During PRA and other social surveys in the project area, it was found that the apple producers in Kinnaur were hardly aware of what is a SHG or its benefit.

2.7.6 Microfinance

Situations on the accesses to external financial services were studied through PRA as well as the SHG survey as mentioned in **Part II, Section 2.7.1**. The key findings are summarised as follows.

(1) Bank Account for Saving and Withdrawal

As the state has already declared that it achieved 100% financial inclusion²³, every individuals and groups interacted in the SHG survey have at least one bank account per household whether it is state, regional, commercial or cooperative banks. The main purpose of the use of the bank account is saving and withdrawal from their saving amount. It is particularly so for the men and women under MGNAREGA because their labour charge is paid through their bank accounts. There are also few cases of taking bank loans, crop and life insurance. Nevertheless, the operation of most such bank accounts were observed to be controlled by male members of the

²³ As stated in Section 2.7.2(1), the livelihood survey indicated that 90.8 % of male and 82.8% of female in the survey household had bank account. This implies that at household-basis, 100% financial inclusion is achieved at the state level.

family owing to women's limited capacity in household financial matters and physical access to bank branch/ATMs situated farther from the village.

(2) Low Penetration of Bank Loan

General low penetration of bank loan in the state was also found evident in the study area. Some people felt the screening process to be complicated and thus, exhibited no interest in bank loans, while some others had concerns around their loan repaying capacity. This particular fear was observed to be more pronounced in case of women than men, who were more open to avail credit facilities for business expansion and economic activities such as agriculture and horticulture etc. Further, many women believe themselves ineligible for most financial services linked to bank credits as unlike men they were unaware about the existing microfinance programs such as of NABARD. Women tend to hesitate to openly talk about loans and credits; nevertheless, some of them revealed about the presence of informal money lending setup (mostly by landlords) to meet their credit needs at a whopping interest rate of 10% per month. For this reason, the women involved in SHG activities appreciate their internal loans or bank loans that entail affordable interest rates of 1 to 2 % per month.

(3) Limited Spread of Financial Literacy

As explained earlier, NABRAD and other banks started to undertake financial literacy programs to educate rural and urban population on range of financial products and services offered by the formal banking and financial system. Banks also promote digitalising program (E-shakti) including Internet banking and various other modes of cashless transactions. The impact of these programs has not become clear from the PRA study. Not many people are aware of the advantages of taking loans or insurance service such as PMSBY and PMJJBY explained in 4.3.7. Poor reach of insurance products was more pronounced in case of women than men who were observed to have availed auto and life insurance, further highlighting the gender bias in access to financial services in the state. Thus, concentration of the stated literacy programs in some of the districts may further delay the penetration of the financial services in remote districts of Lahaul & Spiti and Kinnaur.

CHAPTER 3 PROJECT FRAMEWORK

3.1. Project Plan Outline of the Prioritised Project

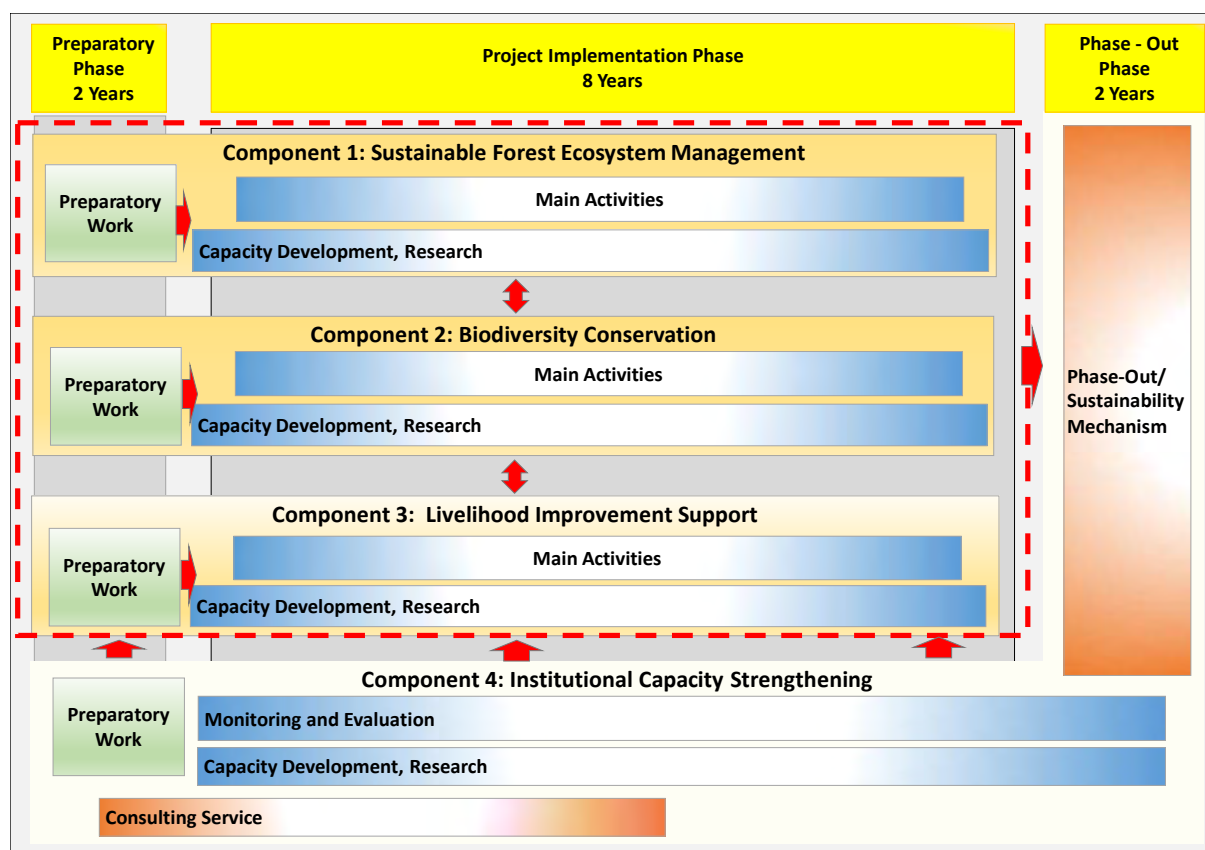
The outline of the Project prioritised by the Study Team is indicated in **Table 3.1.1**. The project outline was formulated based on the review of the DPR, lessons learned from findings and analysis through the study, and a series of discussions between the key officers within HPFD, JICA and the Study Team. In October 2017, JICA has recommended the project components are to be in line with the project outputs as shown in the table below.

Table 3.1.1 Project Plan Outline of the Prioritised Project

| Tentative Outline |
|---|
| <p>Overall Goal: Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh.</p> |
| <p>Project Objective: Ecosystems of forests in the project areas are sustainably managed and enhanced by the project interventions.</p> |
| <p>Project Outputs:</p> <ul style="list-style-type: none"> - Output 1: Sustainable Forest Ecosystem Management - Output 2: Biodiversity Conservation - Output 3: Livelihoods Improvement Support - Output 4: Institutional Capacity Strengthening |
| <p>Duration of the Project:</p> <ul style="list-style-type: none"> - 10 years - The following three phases are considered: Preparatory Phase, Implementation Phase, Phase-out Phase |
| <p>Major Work Quantities: Divisions, ranges, and protected areas have been prioritised through exclusion criteria and prioritisation criteria and described as follows. If required further prioritisation will be conducted. Total Number of Territorial Divisions: 14 divisions Total Number of Territorial Ranges: 49 ranges Total Number of Protected Areas and Wildlife Ranges: 4 protected areas and 2 wildlife ranges No of VFDS to be covered: 400 No of BMC to be covered: 20 (60 sub-committees)</p> |
| <p>Project Components: Component 1: Sustainable Forest Ecosystem Management Component 2: Biodiversity Conservation Component 3: Livelihoods Improvement Support Component 4: Institutional Capacity Strengthening</p> |

Source: Prepared by JICA Study Team (2017) based on discussion with JICA

The Project has four components in correspondence with the project outputs. Each component has the preparatory phase, implementation and phase out phases. Output 1: Sustainable Forest Ecosystem Management, Output 2: Biodiversity Conservation, Output 3: Livelihoods Improvement Support are supported by Output 4: Institutional Capacity Strengthening which component is designed to establish project M&E, institutional capacity enhancement and technical and managerial advisory services extended by the Project Management Consultants (PMC). A framework of project components with flow of the project phases based on the project plan outline is described in **Figure 3.1.1**. Descriptions of the components and methods of implementation of their activities are depicted in **Section 3.7** of this chapter.



Source: JICA Study Team (2017)

Figure 3.1.1 Framework of Project Components and Flow of the Phases

3.2 Major Changes from DPR Made in the Project Framework

In considerations of the review of DPR, lessons learned from findings and analysis through the study, basic sub-component/ structures for the Projects have been restructured.

Considerations made in relation to restructuring of the original components/sub-components/ key activities presented in the DPR are described in **Table 3.2.1**. While revisiting the project objectives, project needs and rationale as well as the feasibility of the proposed activities in DPR were scrutinised. As a result, some components/ sub-components proposed in DPR were re-named and integrated or excluded from the project design.

Table 3.2.1 Restructuring of Project Components in the DPR

| No | Component | Original Consideration by the Study Team | Restructure after JICA Recommendation |
|----|--|---|---|
| 1 | Institutional Capacity Building including Orientation/ Sensitisation & General Preparedness | Re-naming and restructuring this component as "Component 1: Preparatory Work" | Contents of Preparatory Work sorted to respective four outputs/components |
| 2 | Forestry | Re-naming and restructuring this component as "Component 2: Sustainable Forest Management" | Restructured as "Component1: Sustainable Forest Ecosystem Management" |
| 2a | Departmental Mode | | |
| 2b | JFM Mode | The term "JFM" to be changed to "Participatory Forest Management (PFM)", reflecting the PFM rule in HP and also to distinguish from JFM approaches in other states. | |

| No | Component | Original Consideration by the Study Team | Restructure after JICA Recommendation |
|----|-------------------------------------|--|---|
| 3 | Soil & Moisture Conservation | To be included as part of "Component 2: Sustainable Forest Management". If required, parts of activities to be covered also in "Component 3: Biodiversity Conservation", and "Component 4: Community Development and Livelihood Improvement". | To be included as part of "Component 1: Sustainable Forest Ecosystem Management". And if required also to be covered in "Component 2: Biodiversity Conservation", and "Component 3: Livelihoods Improvement Support". |
| 4 | Livelihood Activities | Re-naming and restructuring this component as "Component 4: Community Development and Livelihood Improvement". | Renamed and restructured as "Component 3: Livelihoods Improvement Support". |
| 5 | Wildlife Habitat Improvement | Re-naming and restructuring this component as "Component 3: Biodiversity Conservation". | Renamed and restructured as "Component 2: Biodiversity Conservation". |
| 6 | Environmental Rehabilitation | Some technically feasible erosion and land slide control activities may be considered in respective components only within the forest area, and interventions which require mass scale civil engineering works will not be covered in the Project due to insufficient existing technologies and experiences by HPFD. If deemed necessary and needs are confirmed, spring rejuvenation activities to be considered under community development related component. | Feasible interventions as indicated left may be covered as part of the drainage line treatments (Ex-situ SWC works) which will be activities of "Component 1: Sustainable Forest Ecosystem Management". And if required also to be covered in "Component 2: Biodiversity Conservation". |
| 7 | Research, Studies and Documentation | Re-naming and restructuring this component as "Component 6: Research". | Contents of Research sorted to respective four outputs/components |
| 8 | Strengthening of ICT in HPFD | Re-naming and restructuring this component as "Component 7: Project Management Supporting Activity". | Restructured as part of "Component 4: Institutional Capacity Strengthening". |
| 9 | Monitoring and Evaluation | | |
| 10 | Project Management Unit (PMU) | | |
| 11 | Office building for the Project | | |
| 12 | (Capacity Development) | Not described in DPR but "Component 5: Capacity Development" is newly proposed to consolidate all of capacity development related programmes/ activities in the proposed project as an independent component | Contents of Capacity Development sorted to respective four outputs/components |
| 13 | (Phase-Out) | Not described in DPR but "Component 8: Phase-out/ Sustainability Mechanism" is newly proposed to strengthen the exit strategy and related activities toward the completion of the Project. | Restructured as part of "Component 4: Institutional Capacity Strengthening". |
| 14 | (Consulting Service) | Not described in DPR but agreed between JICA and HPFD. Therefore, "Component 9: Consulting Service" is newly proposed. | Restructured as part of "Component 4: Institutional Capacity Strengthening". |

Source: Prepared by JICA Study Team (2017) based on Discussion with HPFD

3.3 Project Needs and Rationale

3.3.1 Relevance and Linkages with Government Policies and Priorities

The prioritised Project is in conformity with the Himachal Pradesh Forest Sector Policy and Strategy 2005, which determines the state level policies and strategies for the forestry sector. Key features of the Himachal Pradesh Forest Sector Policy and Strategy 2005 and relevance to the prioritised Project are as follows:

- ◆ The state government is committed to bringing more area under forest and tree cover while it pragmatically recognises the **uniqueness of HP as a hill state and considering the uncultivable, barren land, snow covered peaks -which cannot sustain forests.**

- ◆ The existing forest management systems need to be re-examined in light of **significant shift from solely timber production to enhancing the multiple-use of resource that cater for the requirement of the people and biodiversity conservation.**
- ◆ **The rights and concessions in forest areas have to be reviewed in a participatory manner** and significantly the right holders will have the responsibility to identify themselves with protection, development and management of forests to ensure the continuity and sustainability of such rights and concessions.
- ◆ **Forest fires, invasive weeds and stray cattle problems** have become serious threats to forest and forest based resources and thus measures to control them will be taken up on priority.
- ◆ **Linkage of biodiversity conservation to livelihoods, traditional knowledge systems, equitable benefit sharing and recognising the unique role of women** will be the guiding principles
- ◆ The **role of information technology, research and development**, a comprehensive HRD strategy and **robust monitoring and evaluation systems** are the focus areas
- ◆ **The farming systems need to be interfaced with forestry** to ensure long term viability of rural livelihoods of rural communities and sustainable forests
- ◆ A special focus on **medicinal and aromatic plants** as a part of non-wood forest product management would be developed with an emphasis on livelihood security in both public and private lands.

3.3.2 Need to Enhance Forest Quality

Though the HP state has not achieved the target of 35.5% of forest and tree cover, the state has relatively good forest cover. Forest cover of the state has been improved from 14,668 km² in ISFR 2009 to 14,696 km² in ISFR 2015, which accounts for 26.4% of the total geographical area of the state. Out of the total forest cover area described in ISFR 2015, 9,605 km² (which accounts for 65.5% of total forest cover) is estimated as moderately dense and very dense forest and above. The areas of open forest (less than 40% and more than 10% canopy density) and scrub (less than 10% canopy density) could be interpreted as an indication of the degradation. At the state level, the open forest areas and the scrub areas tend to be in somewhat stable status and gradually improving between ISFR 2009 and ISFR 2015 (open forest: 5,061km² to 5,091km², scrub: 327km² to 301km²).

However, forests in the state are under constant threats because of increased biotic pressure, hydropower projects and other development activities. Excessive usage of forest resources is also seen as one of the concerns for adverse impacts to forest areas and their resources.

Not only to mitigate the threats to the forests, but also to enhance carrying capacities of forests for sustained ecosystem services more benefits to people, and for enhanced ecosystem stabilities, further improvement of forest qualities is urgently required in HP state.

The key to the improvement of the forest qualities in HP is how we improve the quality of i)

scrub and open forest areas and bring them under the moderately dense forest, and ii) improve existing moderately dense forests to higher crown density and diversified structure/composition. Also from the carbon sequestration point of view, this would contribute to achieving the Intended Nationally Determined Contributions (INDC) of India submitted to UNFCCC which indicated that the 2.5 to 3 billion tons of carbon sinks to be created through enhancing the forest and tree cover.

3.3.3 Need to Enhance Biodiversity Conservation

The HP state is bestowed with distinctive floral and faunal biodiversity and ecosystems having aesthetic, cultural, commercial and genetic values. The entire state of HP falls into the Himalayan Biodiversity Hotspot which covers from Northern Pakistan to Nepal, Bhutan and north eastern states of India, and having the area close to 750,000 km². It is regarded as a biodiversity hotspot which is a bio-geographic area that has a significant reservoir of biodiversity and subsequently threatened by destruction. Having rich biodiversity and various ecosystems due to its geographical characteristics, the HP state has an importance for wildlife and biodiversity conservation. The total area under the protected area network is 8,358.48 km² which is around 15% of the total forest area of HP. In addition, in HP, there are 27 key biodiversity areas (KBAs), which are regarded as sites that contribute significantly to the global persistence of biodiversity. However, the main issue of the biodiversity in HP is the increasing human interferences into the ecosystems and negative impacts associated with them. Incidences of human-wildlife conflict are prevalent in some parts of the state, especially outside of the protected area, mainly due to the disruption in the habitat of the wildlife caused by the developmental activities and other human interferences. Therefore, the interventions required for biodiversity conservation would need to include the areas both outside and inside the protected areas to address the issues.

3.4 Project Objectives and Approaches

(1) Project Objectives

The forest ecosystems in HP are constantly threatened by the land conversion due to the developmental activities, overgrazing, illicit felling, unsustainable harvesting of NTFPs and etc. The forest users or the “right holders” have used forest and forest resources but not proactively undertaken forest resource management including augmentation of the resource base. The recent climate changes were recognised by local communities through variations in rain fall pattern, which are reflected in the vegetative growth and rejuvenation in the forest areas. Such changes have also had sociological implications. For instance, as the grassland degrades in the forest areas, women spend more time in search of fodder and thus, their workload increases. In such context, the need to address socio ecological issues surrounding forest ecosystems has emerged.

Hence, the Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project in India attempts to achieve the objective of “Ecosystems of forests in the project areas are sustainably managed and enhanced by the project interventions”.

(2) Approaches

Based on the lessons learned from the past and on-going schemes/ projects relevant to the prioritised Project and for the enhanced sustainability of the project impacts, the following key approaches shall be adopted in the Project.

i. Strengthening the Existing Platform for Participatory Forest Management – Village Forest Development Society (VFDS)¹

HP is known as a state where the participatory forest management has been heavily invested in the past by DfID, World Bank, GIZ, KfW and other government schemes. For each of the scheme, community level institutions for participatory and sustainable forest management were established for project implementation. However, the sustainability of such organisations are still questionable. Field findings have not proven that these community level organisations have attained the capacity to further carry out forest management activities on their own. On the other hand, unorganised utilisation of the forest resources by the rights holders have negatively impacted on the resource base and thus, to prevent further trajectory of degradation and reverse the trend, approaching forest management through organised efforts would hold the most relevance. In this context, the project shall capitalise on the HP PFM Regulations 2001 and invest in building the capacity of VFDSs to realise sustainable forest management by the rights holders.

ii. Micro Plan as an Integrated Community Development Plan

One of the lessons learnt from other JICA assisted forestry projects was that, in order to achieve sustainable forest management through PFM mode, socio economic dimension of the forest resource management needs to be integrated in the project interventions as the issues associated with sustainable forest management are multi-faceted which can effectively be addressed through synergising the multi sectoral interventions. This, in other words, the community level plans are to be prepared as a wholistic community development plan which reflect the community’s perspectives. Thus, the Project will adopt an approach to develop the community level plan at the ward level through appropriate participatory planning techniques, in accordance with the PFM Regulations 2001 and as a platform for optimising community development activities in addition to the sustainable management of forest. Furthermore, in the context of HP, it is important to make the community level plan to be developed in response to the needs of the community and further nurture their capacity to decide for their own requirement and the implementation process would require convergence.

¹ VFDS is ward-level institution, determined in the HP PFM Regulations 2001. As a society, VFDS shall be registered under section 3 of the Societies’ Registration Act, 1860. (Act No. 21 of 1860)

iii. Creating Models for Community-Based Biodiversity Conservation

According to the Biodiversity Act 2002, Biodiversity Conservation Committees (BMCs²) are to be established at all GPs for the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats, conservation of landscapes, folk varieties and cultivars, domesticated stocks and breeds of animals and chronicling of knowledge relating to biological diversity.

The Project will adopt ward level institutions as the community level implementation bodies. Protected areas and their surroundings where biodiversity conservation management interventions are more of priorities, BMCs (and its sub-committees) will serve as vehicles to enhance sustainable biodiversity management and conservation. Working with BMC would also contribute to the implementation of the Himachal Pradesh Forest Sector Policy and Strategy 2005 which emphasise linkage of biodiversity conservation to livelihoods, traditional knowledge systems, equitable benefit sharing and recognising the important role of women in forest and biodiversity conservation and management.

In this mode of operation adopted for biodiversity conservation and management, the project intends to create models for enhanced community based biodiversity conservation mechanism by involving the BMCs that can be further adopted in other JICA assisted forestry sector projects.

iv. Gender Mainstreaming

As seen in other states in India, women are closely associated with forest in HP. In the state, collection of fodder grasses and fuelwoods, and grazing generally are the work of women. NTFPs which are sold for income are mostly collected by men or hired labourers and what women collect are mostly in small quantity and mostly for the domestic consumption. In rural communities in the project areas, clearly defined gender division of labour was commonly seen and the gender gap in wages earned from unskilled labour in the private sector is evident. Most women would stay at home and when needed, they take part in works near home which wages would not be as high as what is earned by men from outside. Also, women in many parts of the project areas generally do not own land.

Basing on the above sociological context and HP Forest Sector Policy and Strategy 2005 which recognises women as a key actor in forest and biodiversity management, the Project shall mainstream gender in its institutional arrangement and also all stages of project cycle in order for the Project to reach those who are entitled to the project benefits. The Project shall develop gender mainstreaming strategy and action plan during the preparatory stage. Appropriate gender training shall also be proposed for all levels of project implementation units and stakeholders. The gender monitoring system shall also be institutionalised in the Project.

² BMC is Gram Panchayat level institution determined in the national Biodiversity Act 2002. BMC is one of committees to be established at Gram Panchayat. For the Project ward level sub-committees (BMC sub-committees) are proposed and to be the actual implementation bodies at the ward level.

v. **Livelihood Interventions to Mitigate Seasonal Vulnerability**

Status of livelihoods in HP in the potential project area has improved as seen in the statistical data and much better off in comparison to other states in India. In the prioritised project areas, most of the households have multiple sources of income and are engaged in agriculture and livestock rearing for commercial purposes as well as for domestic consumption. However, the vulnerability of the households still persists especially during the winter time when the employment opportunities reduce especially in the snow bound areas. It is also the time illicit felling occurs as villagers would need to earn for living. In this context, the activities that can be undertaken during winter season and diversification of the sources of income would be relevant to enhance resilience and also to prevent exploitation of forest resources. While implementing livelihood components, convergence or cost sharing mode with the beneficiaries would also be considered. Apart from the seasonal vulnerability, the proposed livelihood interventions shall also keep in mind profitability and sustainability. For this, strategic planning including value chain assessment shall be included during the preparatory phase. Tapping into existing cluster based activities will also be proposed for better accessibility to the market and sustainability. Other small-scale activities to reduce economic vulnerability at household level would also be proposed to be implemented through convergence or cost sharing mode with the beneficiaries.

As for NTFP based interventions, the Project shall make an investment in creating the facilitation unit for marketing while promoting sustainable harvesting technologies, augmentation of forest resources and value addition through extending primary processing which has not been commonly practiced in the prioritised project areas and build its capacity for sustainability.

vi. **Interventions to Mitigate Pressures on Forest Resource – Fuelwood and Fodder**

Under the community development activities, activities that can ease the pressure on forest resources would be included since it also impacts on the women's well-being in many parts of the project areas. In HP, fuelwood consumption during winter increases in many folds in comparison to the non-winter seasons to heat the rooms and boil water. The availability of fodder from forests has been declining and as a result over grazing/ excessive harvesting of the resource which hampered the process of rejuvenation of the vegetation in some parts of the state. Thus, the Project would include activities related to mitigate pressure on forest resource through the activities planned under sustainable forest management component and also under community development & livelihood improvement component. The potential activities would include rotational grazing, fodder plantation/ cultivation, promotion of alternative household energy and fodder/ feed.

3.5 Project Log Frame

The Project Log Frame is attached in the **Table 3.5.1**. The log frame was restructured through discussions with HPFD and JICA. Once the project implementation begins, the document shall be revisited at least during the mid-term review for any modifications. This log frame would also be referred to during the end of the project and ex post evaluation.

Table 3.5.1 Log Frame: Narrative Summary (Version 4)

Last Revised: 15 October 2017

| Strategy | Indicators | Source/ Means of Verification | Assumptions/ Risks |
|---|--|---|---|
| Overall Goal | | | |
| Ecosystem^{*1} services^{*2} from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh. | <ul style="list-style-type: none"> Change in tree/ forest cover density and compositions Improvement in amount of carbon sequestration Change in population and/or distribution of keystone or indicator species | <ul style="list-style-type: none"> GIS & Remote sensing Bio-assessment Surveys Impact assessment and external evaluation FSI reports | <ul style="list-style-type: none"> State government/ HPFD continue to support relevant project/ programme investments Macro economy and law/ order situations of Himachal Pradesh are stable |
| Project Objective/ Purpose | | | |
| Ecosystems of forests in the project areas are sustainably managed and enhanced by the project interventions. | <ul style="list-style-type: none"> Increase in areas having multi-layered / multi-species forest cover Improvement of forest cover density in the project intervention area Improved species diversity over the project areas with reduced biotic interferences (to be further defined) Increase in household income of target communities | <ul style="list-style-type: none"> GIS & Remote sensing Bio-assessment Surveys Impact assessment and external evaluation Reports prepared by the respective levels of implementing agency | <ul style="list-style-type: none"> There are no major catastrophic disasters which adversely impact the project areas. The project is implemented as per the agreed design and processes |
| Outputs: | | | |
| 1. Sustainable Forest Ecosystem Management: Quality of forests as well as its ecosystems in project area are improved. | <ul style="list-style-type: none"> Survival percentage of trees planted by the project Increased multi-layer forest area/ reduced mono culture forest area Reduction in incidences of fire and grazing in forest areas Area of pastures/ grassland improved for quality grass production Reduction in incidences of fire and grazing in forest areas Number of VFDS established/ reactivated Gender segregated number of members to VFDSs Gender segregated number of persons assuming key positions of VFDSs | <ul style="list-style-type: none"> GIS & Remote sensing Bio-assessment Surveys Impact assessment and external evaluation | <ul style="list-style-type: none"> There are no major catastrophic disasters which adversely impact the project areas. The law and order situations are stable |
| 2. Biodiversity Conservation: Biodiversity and wildlife in project areas are managed and conserved. | <ul style="list-style-type: none"> Reduction in incidences and compensation for human-wildlife conflicts Number of BMCs taking part in the Project activities Improvement in connectivity of the protected areas Reduction of incidences of poaching reported to HPFD Gender segregated number of persons assuming key positions of BMCs | <ul style="list-style-type: none"> GIS & Remote sensing Biodiversity-assessment Surveys Impact assessment and external evaluation Department record of human-wildlife conflicts and compensations | <ul style="list-style-type: none"> There are no major catastrophic disasters which adversely impact the project areas. The law and order situations are stable. Baseline surveys are conducted |

| Strategy | Indicators | Source/ Means of Verification | Assumptions/ Risks |
|--|--|--|---|
| 3. Livelihoods Improvement Support: Resilience of targeted communities' livelihoods against impact from degraded ecosystem services is enhanced. | <ul style="list-style-type: none"> Number of Common Interest Group (CIG)/ SHGs, Cluster Organisations successfully generating profits % increase in households using solar energy for domestic purposes % increase in household consumption of LPG cylinder % increase in households practicing stall feeding for animals Time spent by women to collect fuelwood and fodder Number of community assets created using the project fund Number of households benefited from the CD&LI Fund Increase in the area under Tree out of Forest in the project area, including area brought under NTFP, fodder and fuelwood plantation | <ul style="list-style-type: none"> Annual Reports/ MIS Impact assessment and external evaluation | <ul style="list-style-type: none"> There are no major catastrophic disasters which adversely impact the project areas. The law and order situations are stable. Forest dependent communities are well identified and engaged in the project Community members can work on livelihood improvement collectively. Communities continue to work on wild collection of NTFPs and cultivation of NTFPs |
| 4. Institutional Capacity Strengthening: Institutional capacities of PMU and respective implementation units for sustainable ecosystems management are strengthened. | <ul style="list-style-type: none"> Gender segregated number of persons participated in training/ workshop/ exposure visits provides the % of participants. Number of technical guidelines/ manuals developed for dissemination Number of GPs that exercised regulations for sustainably using the forest resources Spatial database of the project areas is established and operationalised. SOP for integration of project GIS system to HPFD is prepared and tested. Number of government orders and notifications issued in relation to the Project | <ul style="list-style-type: none"> Annual Reports/ MIS Impact assessment and external evaluation Satellite images/ data procured for different time-zones IT/ GIS lab operations Project completion reports Monitoring and evaluation reports Relevant orders and notifications | <ul style="list-style-type: none"> There are no major catastrophic disasters which adversely impact the project areas. The law and order situations are stable. The target stakeholders are well identified for trainings ICT remains as priority and focus of HPFD There are no major catastrophic disasters which adversely impact the project areas. |

^{*1} “**ecosystem**”: communities of living and non-living things which affect each other and create an environment. Forest, grassland, and permanent snow area can be one kind of ecosystems that may be found in the project areas or within the State

^{*2} “**ecosystem services**”: Conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfil human life. Includes services and goods such as watershed services, soil stabilization, erosion control, climate regulation, carbon sequestration, biological diversity, recreation/ tourism, cultural values, foods, fodders, grasses, fuelwoods, timbers, NTFPs, etc.

^{*3} “**stakeholders**”: In context of the project, primarily, HPFD and target communities within the project areas, but in a broad sense, include people/ organisations that benefit directly or indirectly from the project areas or services

3.6 Project Components Framework

The restructured components, sub-components and possible key activities discussed among the concerned stakeholders are given in **Table 3.6.1**. The indicative project work quantities are described in **Attachment II.3.6.1**.

Table 3.6.1 Restructured Components/ Sub Components

| Tentative Component | |
|---|--|
| Sub- Component | Possible Key Activities for Further Consideration |
| Component 1: Sustainable Forest Ecosystem Management | |
| 1.1 Preparatory Works for Participatory Forest Management | 1.1.1 Identification and Selection of Interventions Areas 1.1.2 Identification of PFM mode or Departmental mode 1.1.3 Surveying and Mapping of Intervention Areas 1.1.4 Pre-Identification and Selection of Target Communities 1.1.5 Engagement of Ward Level Facilitators 1.1.6 Community Mobilisation 1.1.7 Preparation of Micro Plan (FEMP and CD&LIP) 1.1.8 Annual Planning/ Revisiting of Micro Plan (4th Year) |
| 1.2 Participatory Forest Management (PFM) Mode | 1.2.1 Site Specific Planning and Monitoring 1.2.2 Drainage Line Treatment (ex-situ SWC work) 1.2.3 Improvement/ Densification of Moderately Dense Forest 1.2.4 Afforestation/ Improvement of Open/ Scrub Forest Fuelwood & Fodder Plantation 1.2.5 Improvement of Forest Quality at Key Concerned Forest Areas 1.2.6 Improvement of Pastures/ Grasslands (including in-situ SWC work) 1.2.7 Forest Fire Protection 1.2.8 Forestry Intervention at Outside of Forest Areas |
| 1.3 Training of VFDSs | 1.3.1 Training of VFDSs 1.3.2 Exposure Visits by the Community Institutions 1.3.3 Joint Workshops for Community Level Institutions |
| 1.4 Departmental Mode | 1.4.1 Site Specific Planning and Monitoring 1.4.2 Improvement of Forest Boundary Management at Project Intervention Areas 1.4.3 Improvement of Nurseries 1.4.4 Seedling Production 1.4.5 Non-PFM Drainage Line Treatment (ex-situ SWC work: including treatable surface Erosion Control) 1.4.6 Secondary Silvicultural Operations for Improvement of Existing Forests 1.4.7 Improvement/ Densification of Moderately Dense Forest 1.4.8 Afforestation/ Improvement of Open/ Scrub Forest 1.4.9 Improvement of Forest Quality at Key Concerned Forest Areas 1.4.10 Improvement of Pastures/ Grasslands (including in-situ SWC work) 1.4.11 Forest Fire Management |
| 1.5 Training of Project related staff of HPFD | 1.5.1 TOT for DMU/ FCCU Subject Matter Specialist/ FTU Coordinators for Field Facilitation 1.5.2 Training for Ward Facilitators |
| 1.6 Research | 1.6.1 Monitoring Data Accumulation for Nursing and Planting of Tall Plants 1.6.2 Monitoring Data Accumulation for Effective Pasture Management 1.6.3 Study for Effective SWC and Land Slide Control Measures |
| Component 2: Biodiversity Conservation | |
| 2.1 Scientific Biodiversity Management | 2.1.1 Preparatory Works 2.1.2 Protected area management improvement in core zone or buffer zone 2.1.3 Human-wildlife conflict mitigation/management 2.1.4 Wildlife habitat improvement 2.1.5 Recovery programmes for endangered wildlife |
| 2.2 Training of Project related Staff of HPFD | 2.2.1 TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation 2.2.2 Training for GP Mobilisers and Facilitators |
| 2.3 Research | 2.3.1 Pilot Project on Biodiversity Corridor (Baseline survey for biodiversity corridor) 2.3.2 Basic study for designing Biodiversity Census |
| 2.4 Community Based Biodiversity Management | 2.4.1 Preparatory Works 2.4.2 Community Based Biodiversity Management |
| 2.5 Training of DMUs/FTUs/ BMCs and Sub-committees | 2.5.1 Training of DMUs/FTUs 2.5.2 Training of BMCs and Sub-committees 2.5.3 Exposure Visits by Community Institutions 2.5.4 Joint Workshops for Community Level Institutions (VFDSs/BMCs and |

| Tentative Component | |
|---|---|
| Sub- Component | Possible Key Activities for Further Consideration |
| | Sub-committees) |
| Component 3 Livelihoods Improvement Support | |
| 3.1 Community Development | 3.1.1 Preparation of CD&LIP 3.1.2 Transfer of Funds 3.1.3 Implementation of CD activities 3.1.4 Preparation of Guidelines Manuals and Training Programmes for Community Development 3.1.5 Research: Pilot Project on Hydro Cultural Fodder Production |
| 3.2 NTFP based Livelihood Improvement | 3.2.1 Preparatory Works 3.2.2 NTFP Cluster and Enterprise Development 3.2.3 NTFP Research & Development 3.2.4 NTFP Cultivation 3.2.5 NTFP Market Research and Promotion 3.2.6 Training and Extension |
| 3.3 Non NTFP based Livelihood Improvement | 3.3.1 Preparation of Livelihood Improvement Strategy and Plan 3.3.2 Preparation of CD&LIP 3.3.3 Formation/ Reviving CIGs/ SHGs 3.3.4 Implementation of Household/ Community level livelihood improvement 3.3.5 Promotion of Cluster based Livelihood Activities 3.3.6 Training Programmes for Livelihood Improvement 3.3.7 Capacity Development for CIGs/ SHGs and Cluster Based Organisation |
| Component 4 Institutional Capacity Strengthening | |
| 4.1 Preparatory Works | 4.1.1 Establishment of PMU and Field Level Units 4.1.2 Strengthening of PMU and Field Level Units 4.1.3 Recruitment of the Personnel/ Subject Matter Specialists/ Resource Organisations 4.1.4 Preparation of Gender Action Plan 4.1.5 Environmental and Social Consideration |
| 4.2 Capacity Development | 4.2.1 Implementing Agency 4.2.2 Gender Training 4.2.3 Environmental and Social Consideration |
| 4.3 M&E | 4.3.1 Establishing and operationalising M&E System 4.3.2 Enhancement and Promotion of GIS/ MIS/ ICT 4.3.3 Communication and Publicity |
| 4.4 Research | 4.4.1 Basic Study for Strengthening of ICT at HPFD |
| 4.5 PMC | 4.5.1 Procurement of PMC 4.5.2 Deployment of PMC specialists 4.5.3 Provision of Technical and Managerial Advisory Services 4.5.4 Preparation of Reports |
| 4.6 Phase Out | 4.6.1 Implementing Agency 4.6.1.1 Preparation of Phase-Out/ Sustainability Mechanism Plan 4.6.1.2 Transfer of Assets and Resources 4.6.2 Community Based Organisations 4.6.2.1 Revisiting of FEMP and CD&LIP 4.6.2.2 Phase Out Training 4.6.3 EMP/CBMP Fund |

Source: Prepared by JICA Study Team (2017)

3.7 Project Components

3.7.1 “Component 1: Sustainable Forest Ecosystem Management”

3.7.1.1 “Component 1.1: Preparatory Works for Component 1”

(1) Composition of Activities

The key activities planned for preparatory works for Component 1 are described as follows:

1.1 Preparatory Works

- 1.1.1 Identification and Selection of Interventions Areas
- 1.1.2 Pre-identification of PFM mode or Departmental mode
- 1.1.3 Surveying and Mapping of Intervention Areas

- 1.1.4 Identification and Selection of Target Communities
- 1.1.5 Engagement of Motivators, Ward Level Facilitators
- 1.1.6 Community Mobilisation
- 1.1.7 Preparation of Micro Plan (FEMP and CD&LIP)
- 1.1.8 Annual Planning/ Revisiting of Micro Plan (4th Year)

(2) “Component 1.1.1: Identification and Selection of Interventions Areas”

Identification of project intervention areas and site selection are one of the very first activities during preparatory phase. For identification of potential intervention areas, use of GIS and remote sensing techniques are recommended. The available GIS datasets with HPFD to be used for initial identification of areas/sites (and their respective Gram Panchayats), that satisfies the broad parameters of selection within the prioritised project ranges. The identified areas need to be substantiated with field verification of site situation by respective divisions/ranges. HPFD may also procure the latest forest cover map (FCM) data of ISFR 2017 from FSI, which is likely to be released by the end of year 2017. Other data layers which are not available by either HPFD or the Project to be procured in timely manners. The broad criterion proposed for selection of project sites is listed below:

Table 3.7.1.1 Indicative Broad Criterion of Selection of Project Intervention Areas

| Broad Parameters | Data Type | Criterion | Data Layers |
|--|--|---|--|
| 1.Contiguous Degraded Area | Scrubs + Open Forest <i>(for Forest development)</i> | Altitude below 3,500 meters Contiguous patches having 5 ha or more | FCM & Fragmentation |
| | Grassland | Contiguous patches having 5 ha or more | Veg. Richness & Revenue Records |
| | Dry alpine Pastures and Dry alpine scrubs <i>(for Pastures development)</i> | Altitude above 3,500 meters Contiguous patches having 5 ha or more | Veg. Richness |
| | Soil and water conservation required areas | Numbers and density of gullies and rills | Remote-sensing data Field verifications |
| 2.Contiguous Dense Forest Area and Forest Covers which Require Further Quality Development | Moderately Dense forest Forest, Mono-culture forest stand, invasive species infested area, niche species area | Contiguous patches having 10 ha or more | FCM & Fragmentation Veg. Richness |
| 3.Operational Efficiency | Approachability by road | Within a buffer of 5 km of nearest road and/or buffer of 2 km of habitation | Road Layer, Scrubs + Open Forest, Habitation Locations |
| 4.Population Pressure on Resources | Vicinity to habitation | | |

Source: JICA Study Team (2017)

Identification of potential intervention areas include key concerned forest areas such as forest areas infested with invasive species and/ or monoculture forest stands which conversions to multi-layers/species stands are required. However, selection of such potential areas for the actual interventions shall be confined to areas/ treatments which enable to secure feasibility and sustainability of such interventions.

(3) “Component 1.1.2: Pre-identification of PFM mode or Departmental mode”

The implementation modes of this component is sub-divided into “Participatory Forestry Management (PFM) Mode” and “Departmental Mode”. In line with the other JICA loan forestry projects in India, the emphasis shall be given to the PFM mode for the Project. In principle, the project intervention work quantity for the departmental mode shall be minimised and that of the PFM mode shall be maximised. However, the modes to be adopted for the actual project interventions to be determined flexibly based on the following principles: i) locations of interventions sites required for the project interventions, ii) needs and willingness by surrounding communities of the intervention sites and iii) technical feasibilities for such project interventions. In case, identified potential interventions areas are away from communities but interventions are required by the Project, such interventions shall be conducted in the departmental mode. In principle, the departmental mode works are to be implemented in locations which contribute to the sustainable forest management but not fully practical to be undertaken by the PFM mode due to difficulties in terms of the site locations and technical capacities by PFM institutions.

Detail identification criteria shall be prepared by PMU during the preparatory phase of the Project.

The final identification of the mode shall be determined based on the result survey/ mapping, selection of target communities as well as community mobilisation.

(4) “Component 1.1.3: Surveying and Mapping of Intervention Areas”

For micro level planning and preparation of the forest ecosystem management plan, one of the most important activities is ‘Base map and Resource mapping’ and ‘Treatment area map preparation’ preferably at 1: 5,000 scale or better. These maps shall be prepared at ward level. The base maps would help in understanding the area and assist in better planning as well. During the micro planning the maps may be updated on hard copy maps with more details, if required. All the base maps along with field knowledge, a detailed site-specific treatment would be prepared with detailed locations of the proposed interventions based on site condition and requirement. Later, the treatment map would be updated/ digitised in GIS environment for future usage and M&E purposes. The broad steps for mapping are as follows:

Table 3.7.1.2 Preparation of Maps for Micro Planning

| Phase | Base Maps | Broad Classes | | Options of Mapping |
|--|------------------------------------|---|--|---|
| Preparatory Phase: Before Micro Planning | 1. Land Use/ Land Cover (LULC) map | -Forest -Grassland -Pasture -Agriculture -Orchard | -Lake/pond -Stream -Village/hamlet location -Assets/utilities | -In-house data -Bhuvan Panchayat -Bhuvan/ Google Earth Images |
| | 2. Forest Density Maps | -Forest Density (High Dense, Mod. Dense, Open Forest) | -Forest Regeneration | - Forest Cover Map (FCM) of FSI supplemented by field inputs |
| | 3. Elevation/ Contour Maps | Contours | | -Cartosat (Bhuvan) |
| | 4. GP and Ward boundary | | | |
| During Micro Planning | 5. Treatment Area Map | -Proposed sites for forest plantation and protection with suitable models -Proposed treatment sites for soil and | | -Identification of potential sites for intervention on maps (LULC, FCM, Elevation |

| Phase | Base Maps | Broad Classes | Options of Mapping |
|-------|-----------|--|---|
| | | water conservation measures -Fire Lines | Map) and validation in the field by the field staff and VFDS members. |

Source: JICA Study Team (2017)

The Project and GIS cell of HPFD can prepare and produce ward-specific base maps. However, in consideration of number of maps to be produced and a schedule for map production, preparation of maps can be outsourced to outside agencies. In such case, procurement of outside agencies to be done by a local competitive bidding (LCD). The outside agencies for mapping shall be procured by the end of the first half of year 1 and to be ready for preparation of maps for 1st batch VFDS/sub-committees of BMC.

(5) “Component 1.1.4: Identification and Selection of Target Communities”

i. Identification of clusters of VFDSs in the Target Ranges

In each targeted range, a cluster of wards for intervention shall be identified spatially. Gram Panchayats having 3 or more contiguous wards in need of treatment in the potential area shall be selected as priority. Further to avoid duplication of interventions, the wards coming under the BMCs to be assisted by the Project shall not be considered for the interventions by VFDSs. During the 1st contact, the DMU subject matter specialists/ FTU coordinator along with FTU staff shall confirm the following points listed in the prioritisation criteria in **Table 3.7.1.3** in the field with consultation with the stakeholders including gram pradhan, ward panch, and local representatives such as chair persons of mahila mandal and yuvak mandal. The score shall be confirmed by FTU to proceed further steps in the consensus building. The indicative criteria shall be finalised by PMU during the preparatory phase.

Table 3.7.1.3 Indicative Criteria for Ward Prioritisation – Sustainable Forest Management

| Exclusion Criteria | | | |
|-------------------------|---|--------|---|
| Exclusion Criteria | The households having rights of the intervention areas constitute less than 70% of the total number of households in the ward. The ward does not come under the potential BMCs for project intervention. | | |
| Prioritisation Criteria | | | |
| | Criteria | Score | Description |
| 1 | Total area for treatment | 1-5 | 1-10 ha=1/ 11-20 ha=2/ 21- 30ha=3/ 31-40ha=4/ 41<=5 |
| 2 | Contiguity of treatment areas | 1-3 | 1-2 patches*=3/ 3-4 patches=2/ more than 5 patches=1 |
| 3 | Degraded areas** | 1-5 | 0-20%=1/ 21-40%=2/ 41-60%=3/ 61-80%=4/ 81-100%=5 |
| 4 | Distribution of commercially important NTFP/ MAP species | 1-3 | 1=less than 2 species/ 2= less than 4 species/ 3more than 5 species |
| 5 | Accessibility by the all weather road from the main road | 1 or 2 | No access =1/ Have access=2 |
| 6 | Accessibility by the kaccha road | 1 or 2 | No access =1/ Have access=2 |
| 7 | Time required to reach the community from the range office | 1-3 | More than 3 hours =1/ <2hours =2/ 2>=3 |
| | Maximum Score | 23 | |

* “patch” in this context is a segment of forest area.

** “degraded area” in this context is areas under “scrub” and “open forest” as per the India State of Forest Report (ISFR)

Source: JICA Study Team (2017)

Based on the determined prioritisation criteria, FTU will proceed for the actual ward prioritisation. Once the prioritisation score is confirmed by FTU, DMU subject matter specialists/ FTU coordinator shall visit the potential wards for sensitisation and consensus building through stakeholder consultation. At this stage, the stakeholders to be consulted shall include gram pradhan, all the concerned ward panches, existing community based groups like Mahila Mandal, Yuvak Mandal, SHGs and other representatives of the concerned wards who are identified by the gram pradhan. The consultation shall be held more than once so that the stakeholders would have sufficient opportunities to develop rapport with the project personnel and understanding on the nature of the project interventions and their roles in implementation. During this exercise, maps of the identified intervention areas are to be shared with the stakeholders. The indicative outcome of the stakeholder consultation shall be as follows (Table 3.7.1.4).

Table 3.7.1.4 Points to be Discussed and Expected Outcome of the Stakeholder Consultation

| Points to be discussed/ Information to be shared | Outcome of the discussion |
|--|--|
| <ul style="list-style-type: none"> ➤ Project objectives and approaches to implementation – Some activities ➤ Implementation structure – various implementation units and their roles and responsibilities ➤ Potential intervention areas identified by the project ➤ Wards prioprisation criteria (Table 3.7.1.3) and the score obtained by the Ward | <ul style="list-style-type: none"> ➤ Stakeholders understand and give consent to the objectives and approach of project implementation ➤ Constitution/ reactivation of VFDS ➤ Finalised list of wards where the interventions are to be implemented |

Source: JICA Study Team (2017)

During the consensus building, ward prioritisation criteria and the score obtained by the ward shall be discussed with the stakeholders. Once the consensus is obtained, the process of formation of VFDSs are to be initiated as per the PFM Regulations 2001 or the reactivation process of the existing VFDSs in the respective wards shall be facilitated. In case the consensus is not obtained, other candidate wards according to the score shall be approached. A manual for ward identification and consensus building shall be prepared prior to the selection of wards by PMU.

In principle, the selected wards (VFDSs) shall be divided into three batches, reflecting locations and seedling raising period (less than 1.5, 2 ~2.5 years, and ~3.5 years) of potential major species to be planted by the respective VFDSs. In consideration of overall schedule of required preparatory works, 1st batch VFDSs shall be selected by the first quarter of Year 2 (by June 2019), 2nd batch by the first quarter of Year 3 (by June 2020), and 3rd batch by fourth quarter of year 4 (by January 2021). Tentatively, 75, 175 and 150 VFDSs are assumed to be selected for 1st batch, 2nd batch and 3rd batch. The actual selection of VFDSs and their batches will be conducted by FTU with thorough consultation/confirmation with concerned VFDSs.

(6) “Component 1.1.5: Engagement of Ward Facilitators”

The Project shall engage the capable individuals who could assist community level institutions for efficient and effective community involvement in the project implementation process. For each VFDS, one male and one female ward facilitators shall be engaged to provide assistance in planning, implementation and management of VFDS, and Common Interest Groups (CIGs)/ Self

Help Groups (SHGs) for livelihoods and to facilitate the process of convergence and function as the interface between the project and community. The Ward Facilitators shall work on a part time basis under the close supervision of FTU and be provided with the training programmes upon their engagement. The indicative selection process and honorarium are given in the table below while their TOR is given in **Attachment II.3.7.1.1**.

Table 3.7.1.5 Indicative Terms of Engagement - Ward Facilitators

| Particulars | Ward Facilitator |
|------------------------|---|
| Honorarium | 4,000 Rs/ Month |
| Duration of Engagement | 3 years per batch 4 th year onwards, the VFDS shall take a decision whether to continue their engagement and decide on the amount of honorarium. 4 th year onwards, the honorarium shall be borne by the VFDS. |
| No of persons engaged | 1 male and 1 female for each VFDS |
| Selection | Nomination and selection by the ward sabha |
| Objectives | To assist the day to day functioning of ward level users groups/ SHGs/ common interest groups To coordinate between the project/ FTU/ GP and wards and group members |

Source: JICA Study Team (2017)

(7) “Component 1.1.6: Community Mobilisation”

The indicative process of community mobilisation is given in this section. Prior to the commencement of the community mobilisation, PMU shall finalise the process of community mobilisation.

Once the wards are identified, community mobilisation and formation/ reactivation of VFDSs is to be undertaken by DMU subject matter specialists/ FTU coordinators along with the Ward Facilitators and other concerned local representatives like ward panch. Ward sabha shall be called for this purpose. During the ward sabha, 1)the project purpose, 2)types of interventions, roles of VFDS, and 3)other project implementation units are to be introduced. All the male/ female ward members from the rights holders’ households shall constitute the General House of the VFDS.

Once the ward members have given the consent to take part in the project, a resolution shall be passed and VFDS shall be constituted. Although the PFM Regulations 2001 states that the application of formation of VFDS is to be submitted by the consent of 50% of the ward members, the Study Team recommends more than 70% of the right holders who are the ward members shall give consent to take part in the VFDS.

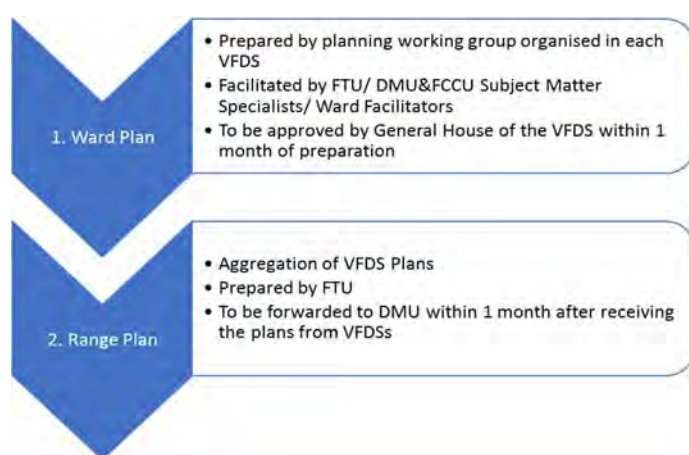
The constitution of the executive committee of VFDS is as per the PFM Regulations 2001. The Regulation takes care of the gender aspects to be ensured in the committee and states that at least 7 members of the executive committee are to be women. Further to ensure women’s active involvement in VFDS, the project may consider to promote: i) either one of the position of president or vice president shall be assumed by a woman on a rotation basis; ii) two out of four elected members shall be elected by women VFDS general house members; and iii) women working group may be organised in case no Mahila Mandal is operational in the locality and its president shall be a member of the executive committee. The Project is also advised to clarify the voting rights of the general house members in its operation manual for VFDSs. The voting right

of general house members shall be given to each member instead of one household one vote. Once the executive committee is composed and member's register is prepared, VFDS shall be registered under the section 3 of the Societies Registration Act, 1860 (Act No. 21 of 1860) as per the PFM Regulation 2001.

(8) "Component 1.1.7: Preparation of Micro Plan (Forest Ecosystem Management Plan and Community Development & Livelihood Improvement Plan)"

i. Overview of Community Level Plans

The Project intends to have a cohesive activity plans between ward and range in order to maximise the impacts of the project interventions instead of broadcasting the project inputs in patches. Micro plan shall consist of two types of sub plans; Forest Ecosystem Management Plan (FEMP) and Community Development and Livelihood Improvement Plans (CD&LIP) which shall be prepared by each VFDS and aggregated by FTU for each range. The VFDS level plan



Source: JICA Study Team (2017)

Figure 3.7.1.1 Aggregation of FEMP and CD&LIP

shall be shared at the ward sabha and subsequently with the Gram Panchayat whereas, the aggregated plan, especially CD&LIP, shall be shared with Community Development Block to facilitate convergence. The facilitation of the planning shall be done by DMU subject matter specialists/ FTU coordinator and Ward Facilitators.

The planning process and templates are to be designed by PMU and a manual shall be prepared PMU prior to the field level exercise.

Process of Preparation of Forest Ecosystems Management Plan and Community Development and Livelihood Improvement Plan

1) Ward Plan

Forest Ecosystems Management Plan (FEMP) and Community Development and Livelihood Improvement Plan (CD&LIP) will be prepared by each VFDS. Both the plans are to be based on the 10 years vision and 5 year Action Plan. The annual plan shall also be prepared each year based on the 5 year Action Plan.



Source: JICA Study Team (2017)

Figure 3.7.1.2 Planning Process at Ward Level

The FEMP and CD&LIP shall be prepared by the equal number of representatives from men and women from General House members of VFDS. Separate discussions shall be held by men and women participants and based on the outputs of the discussions from each group, the plan shall be finalised in plenary. During this exercise, the topics shall not be segregated by gender (i.e. men will discuss forest management while women discuss on livelihood.) as women constitute the majority of the forest users and bear significant responsibilities in managing household economy though the economic value of their contribution might not have been tangible.

In FEMP, activities concerning forest and forest resource management shall be included to address the issues related to the forest and forest areas that are used by the VFDS members. Technical inputs shall be provided by DMU subject matter specialists/ FTU coordinator.

CD&LIP shall contain activities that enhance community well-being and resilience of household economy. When selecting the community development activities, the activities that benefit the entire community; contribute to reduction of the dependency on the forest resources (i.e. fodder or fuelwood related activities) and women's workload shall be given priorities. The selection criteria shall be finalised by PMU prior to the preparation of the plan.

2) Range Plan

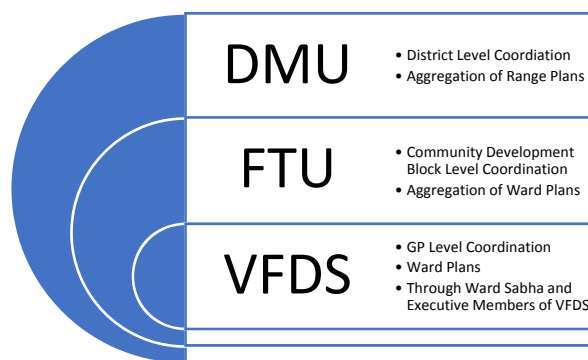
FTU at a Range will receive plans from VFDSs within its jurisdiction and harmonises its contents and reviews for effectiveness. FTU shall confirm the needs and viability of the VFDS plans by site visits and through consultation with VFDSs. The assessment criteria of the plans for financing and process of sanctioning shall be defined by PMU during the preparatory stage. Once the plans are recommended by FTU and approved by DMU, respective VFDSs will receive funds for implementation.

3) Convergence

Convergence shall be an important approach for implementing CD&LIP to cater for the diverse requirements of the community which can rather effectively met by mobilising resource from various on-going government programmes and schemes. To solicit convergence, the multi layer coordination approach shall be adopted by the project. PMU shall coordinate with the state

government through its High Power Committee. At district level, DMU will coordinate with districts. Especially, at the Community Development Block level coordination will be important and FTU shall play a key role in this. Range plan is to be shared with the Community Development Block for the purpose.

At the VFDS level, the CD&LIP can be discussed at Ward Sabha. Through ward panch, the CD&LIP can be shared with Gram Panchayats. VFDS executive committee members, which include the local body representatives, shall also facilitate the process of convergence.



Source: JICA Study Team (2017)

Figure 3.7.1.3 Levels of Coordination for Convergence

(9) “Component 1.1.8: Annual Planning/ Revisiting of Micro Plan (4th Year)”

Under the FEMP and CD&LIP, broad action plan is to be prepared for 5 years based on the 10 years’ vision. Annual planning is to be done between September and December of each year prior to the next financial year. During the exercise, the achievements of the previous year shall be assessed and identify issues and corrective measures to further increase the efficiencies and effectiveness of the project implementation. In the annual planning undertaken during 4th year, a broad action plan shall be prepared for the forth coming 5 years. The process of the 2nd 5 year action plan shall follow the same step as discussed in the above section and facilitated by FTU coordinator and ward facilitators.

3.7.1.2 “Component 1.2: Participatory Forest Management (PFM) Mode”

(1) Composition of Activities

In considerations of the review of the DPR, lessons learned from forest management in HP, and the revised log frame for the Project, key activities for the forest management activities under the PFM mode are described as follows:

2.2 PFM Mode

2.2.1 Site Specific Planning and Monitoring

2.2.2 Drainage Line Treatment (ex-situ SWC work)

2.2.3 Improvement/ Densification of Moderately Dense Forest (Assisted Natural Regeneration: ANR with or without gap planting/ patch sowing)

2.2.4 Afforestation/ Improvement of Open/ Scrub Forest

- Fuelwood & Fodder Plantation
- Development of Species of Special Interest/ Niche
- NTFP, Medicinal Plant and Bamboo Development

- 2.2.5 Improvement of Forest Quality at Key Concerned Forest Areas
 - Rehabilitation of Forest Areas Infested with Invasive Species
 - Conversion of mono-culture forest stands to Multi-species forest stands
- 2.2.6 Improvement of Pastures/ Grasslands (including in-situ SWC work)
 - Dry Alpine Pastures
 - Other Grasslands
 - Establishment of Fallow Pastures/ Grasslands
- 2.2.7 Forest Fire Protection
 - Fire Patrol and Provision of Incentive Measures
 - Pine Need Collection and Utilisation
- 2.2.8 Forestry Intervention at Outside of Forest Areas

The ANR/ plantation/ pasture improvement activities under the PFM mode for the Project tries to give more emphasise on selection of community-demand driven treatments and species in addition to selection based on natural /geographical suitability. In this context, production of fodder, fuelwood and NTFP are considered to be priority interventions.

(2) “Component 1.2.1: Site Specific Planning and Monitoring”

i. Site Specific Planning

The planning including selecting sites, species and treatments for the PFM intervention will be the integral part of the FEMP planning process for the concerned VFDSs. However, in order to achieve more effective and sustainable forest management by PFM institutions, field investigations and planning exercise will be conducted to determine site specific treatments for PFM intervention areas (i.e. ANR/ plantation/ pasture treatment areas and drainage line treatment areas), reflecting demands/needs of concerned PFM institutions and also of the natural /geographical conditions of sites concerned. The field investigations and planning exercise will be conducted by members of PFM institutions with technical guidance and support from range office/FTU staff and relevant resource organisations. The output of the activity will be incorporated in the respective FEMP.

To facilitate the exercise for site specific planning and monitoring, a drone will be procured per range which are covered in the Project. As a part of the procurement of drones, training to operate the drone will be provided to respective FTUs

ii. Site Specific Monitoring

The field investigations and other monitoring exercise of the PFM intervention areas will be conducted by members of PFM institutions with technical guidance and support from range office/FTU staff and relevant resource organisations. The monitoring is scheduled to be conducted 2nd year and 4th years after the planting work which is counted as 1st year.

(3) “Component 1.2.2: Drainage Line Treatment (ex-situ SWC work)”

In principle, the soil moisture conservation (SMC) work or the soil water conservation (SWC) work to be covered in the Project will be confined to soil conservation/ stabilisation and water/moisture conservation as well as water harvesting to improve the soil and water/moisture regimes of in and around forest areas which the project interventions will take place. The drainage line treatment (Ex-situ SWC work) activity will be mainly implemented in upstream drainage lines of project treatment areas. The “in-situ SWC works”, direct SWC interventions within plantation/ ANR/ pasture treatment areas, will be covered as sub-activities under the respective ANR/ plantation/ pasture improvement activities, reflecting the normal practices conducted by HPFD. Also, time for completion of SWC works, especially of in-situ SMC works, must be prior to the planting activities in order to achieve better survival and growth of seedlings to be planted. Details of SWC works are described in **Attachment II.3.7.1.2**.

In case, water harvesting structures are adopted for the project interventions and deemed necessary, a water user association may be created for maintenance of such ponds and SWC structures.

Also by the end of the Project, adopted methodologies, achievements and lessons learnt from the drainage line treatments (both PFM mode and departmental mode) shall be compiled as a “drainage line treatment case examples”.

(4) Overview of the Forestry Operations for PFM Interventions

Forestry related treatments/ operations to be taken up in the Project can be broadly divided into “assisted natural regeneration (ANR)” and “block plantation”. **Table 3.7.1.6** summarises overall descriptions of these two treatments.

Table 3.7.1.6 Overall Description of Forestry Operations in the Project

| Treatment Type | Description |
|-------------------------------------|---|
| Assisted Natural Regeneration (ANR) | <ul style="list-style-type: none"> - Aims to artificially facilitate natural regeneration provided on degraded forests where rootstocks are still available. - Include treatments such as singling coppice shoots, removal of high stumps and climbers and tree planting in blank areas. - Gap plantings and patch sowing to be introduced based on objectives/goals as well as site specific feasibilities. |
| Block Plantation | <ul style="list-style-type: none"> - Aims to produce specific wood/NTFP products and/or maintain vegetal cover for soil and water conservation and other purposes. - Planting of seedlings in blocks at certain density |

Source: JICA Survey Team (2016)

Attachment II.3.7.1.3 provides information on potential trees species as well as NTFP/ medicinal plant species to be adopted in the forestry operations for the Project.

Operations in the PFM treatment areas will put more emphasis on development and utilisation of forest products and soil-water conservation, which are beneficial for members of PFM institutions.

The operations and treatments under the PFM-mode will emphasise on selection of PFM institution/ community demand driven treatments and species in addition to the selection based on natural /geographical suitability. In this context, production of fuel & fodder, NTFP (including medicinal plants and bamboo) production are regarded as priority treatment purposes. If conditions and locations allow production of niche species (**Section II.3.7.1.2 (7)**) will be implemented.

Selection of target species as well as the necessary silvicultural treatments will be decided by the PFM institutions through the site-specific planning with technical guidance and support from range/FTU staff and relevant resource organisations during preparation of FEMP. The approved FEMP will describe species and necessary silvicultural treatments selected and decided by the respective PFM institutions. The work will be conducted by the PFM institutions. On an agreement basis. The required costs for establishment and maintenance of the plantation/ANR will be paid to the respective PFM institutions.

For the operations in the PFM treatment area, basically, the same cost norms and practices with the corresponding operations determined in the HPFFD work will be applied. In addition to activities determined in the “HPFD plantation norms 2017”, additional activities and their costs for PFM treatments will be included in the project interventions based on the necessity. In general, additional cost for seedling transportation, maintenance of in-situ SMC work executed in the PFM areas will be met by the Project.

(5) “Component 1.2.3: Improvement/ Densification of Moderately Dense Forests”

Mainly ANR with gap planting/or patch sowing will be implemented for improvement/ densification of the moderately dense forest areas. In principle, ANR operations covered in this component include in-situ SWC work and maintenance up to 4th year after planting.

Attachment II.3.7.1.4 describes indicative year-wise activities of ANR operations to be planned in the Project. For planning and implementation of ANR operations, the following aspects will be taken in to account.

- Natural regeneration will also be promoted at sites where rootstock is available.
- Planting density, target species and operations will be decided based on-site conditions and desires of the PFM institutions.
- In gaps and open areas, inter-planting of NTFPs (shrub, herbaceous, grass species), fuelwood, fodder (both woody species and grass), and medicinal plants will be adopted based on the preferences of PFM institutions and the site conditions of the concerned sites
- Grass production will be introduced as intercropping not only for fodder production but also to stabilise the forest floor.
- If PFM institutions have bamboo concentrated areas within their PFM areas or have demand for bamboo production, in principle, the same norms and practices for bamboo cultural operation/ plantation by HPFD will be applied.

For cost estimate purpose, the following two models were developed.

- i) ANR without planting
- ii) ANR with gap planting of 200 seedlings/ha (tall plant)

(6) “Component 1.2.4 Afforestation/ Improvement of Open/ Scrub Forests”

Mainly block plantations will be established for afforestation/ improvement of open/ scrub forests, but for open forest areas with higher crown density, ANR with gap planting/or patch sowing will be also implemented. The block planation and ANR operations covered in this component include in-situ SWC work and maintenance up to 4th year after planting.

For the block plantations to be covered in the Project, the following will be the major objectives of the interventions.

- ◆ Fuelwood and Fodder Plantation
- ◆ NTFP, Medicinal Plant and Bamboo Development
- ◆ Special Interest/ Niche Species Development

In the prioritised project divisions, the following species are regarded as species of special interest/ niche species for further production. If conditions and locations allow, the following species will be introduced in the Project interventions.

- ◆ Chilgoza (*Pinus gerardiana*): Kinnaur division
- ◆ Seabuckthorn (*Hippophae rhamnoides*): Lahaul and Kinnaur divisions
- ◆ Juniper (*Juniperus macropoda*): Lahaul, Kaza Wildlife, and Kinnaur divisions
- ◆ Ash (*Fraxinus spp*) Kinnaur division

Attachment II.3.7.1.5 describes i) indicative year-wise activities of block planation operations to be planned in the Project, and ii) species for special interest/ niche species development.

For planning and implementation of block plantation operations, the following aspects will be taken in to account.

- Planting density, target species and operations will be decided based on the site conditions and desires of the PFM institutions.
- If required, planting intensity can be reduced from that of the HPFD Plantation Norm 2017. This will allow more growing spaces for grasses, shrubs and other NTFP species, if desired by the PFM institutions.
- If required, grass production will be also introduced as intercropping not for fodder production but also to stabilise the forest floor.
- If the PFM institutions have demand for bamboo production, in principle, the same norms and practices for bamboo cultural operation/ plantation by HPFD will be applied.

For cost estimate purpose, the following three models were developed.

- i) Fuelwood and Fodder Plantation 1,100 normal plants/ha)
- ii) NTFP/Medicinal Plantations (Tree + Shrubs/ Perennial Herb)
- iii) Tall Plant Block Plantation (500 tall plants/ has)

(7) “Component 1.2.5: Improvement of Forest Quality at Key Concerned Forest Areas”

Both ANR and block plantations will be implemented for improvement of forest quality at key concerned forest areas. Emphasis of this component are as follows.

- ◆ Rehabilitation of Forest Areas Infested with Invasive Species
- ◆ Conversion of mono-culture forest stands to Multi-species forest stands

If locations/ conditions allow and willingness of PFM institutions exist, interventions having the above purposes shall be implemented. The rehabilitation of invasive species (Lantana) infested areas intends to i) eradicate invasive species and then ii) to shade out the area with tree cover to minimise re-invasion of invasive species.

Lantana removal could be taken up wherever it occurs in the selected treatment area for wards which conduct plantation activities. However, since ongoing lantana removal and rehabilitation tend to require continuous inputs/ interventions and not always successful, treatment areas to be restricted to the areas where feasible and the sustainability of the activities can be ensured. Geographically, lantana removal and rehabilitation to be confined in Bilaspur and Mandi district areas. Treatment areas to be specified in FEMP and to be done in small scale/numbers for demonstration purpose. Area selection criteria for the lantana removal and rehabilitation to be determined after the project implementation. Not only eradication works but also trainings associated with the lantana removal and rehabilitation will be conducted in target VFDSs. Major activities proposed for lantana related interventions in the Project are as follows.

- ◆ Pre-trainings (including demonstration) to selected VFDS members for operations of lantana removal, planting of tall plants for shade trees, and tending activities
- ◆ Removal/ tending work
- ◆ Planting/ tending works of tall plants to introduce shade cover.
- ◆ Refresher trainings as well as extension workshops for the adopted methodologies.

For cost estimate purpose, the following three models were developed.

- i) Planting 200 tall plants/ Ha + Rehabilitation 100% of invasive plant areas
- ii) ANR with gap planting of 200 seedlings/ha (tall plant)

(8) “Component 1.2.6: Improvement of Pastures/ Grasslands”

The “dry alpine pasture” and “other grasslands” based on the vegetation and land use type map 2012 (**Part I: Section 4.10.3 and Part II: Section 2.2.2 Table 2.2.2**) are dominant pasture/grasslands in the prioritised project area. Thus, the project interventions for improvement of pastures and grasslands will be covering these type of pastures and grassland.

Although there are existing cost/work norms within HPFD for “Alpine Pasture” and “Low Lying Grazing Lands” under the” Development of Pasture & Grazing Land” schemes, models developed by the Indian Grassland and Fodder Research Institute³ will be adopted for the project interventions to improve biomass productivity and re-sowing of pastures/grasslands.

The following types of treatments will be considered and their descriptions are described in **Attachment II.3.7.1.6**. However, in consideration of available grasslands in the prioritised project ranges, the interventions for “Other Grasslands” will be nominal. In any of treatments, in-situ SWC works (i.e. counter trench, dry stone check dams, gully plugging, water harvesting structures, etc.) which reflect the requirements of concerned sites will be also introduced.

³ IMPROVEMENT OF SUB-ALPINE AND ALPINE HIMALYAN PASTURES (Bimal Misri), Regional Research Centre, Indian Grassland and Fodder Research Institute, HPKV Campus, Palampur-176062, India.

Dry Alpine Pasture:

1. Broadcasting Method (Grass Seeds)
2. Patch/Strip Methods (Grass Tufts or Grass Seeds and Legumes Seeds)

Other Grasslands:

1. Silvipastoral Fodder Development Methods (Fodder Trees, Grass Tufts or Grass Seeds, and Legumes Seeds)
2. Patch/Strip Methods (Grass Tufts or Grass Seeds and Legumes Seeds)

In addition to the above interventions, establishment of fallow pastures/grasslands by fencing for systematic pasture/grassland management will be introduced at vicinities of the above treatment areas.

(9) “Component 1.2.7: Forest Fire Protection”

i. Fire Patrol

PFM institutions shall be responsible for fire patrol in and around their PFM treatment areas and surrounding forest areas, especially during the dry seasons. Fire patrol mainly includes watch and ward, and reporting. The cost for 4 years of fire patrol (starting from the planting) year will be covered by the Project. The fire patrol shall be continued beyond 4th year of intervention by VFDSs with technical guidance from HPFD.

ii. Pine Needle Collection and Utilisation

In chir pine dominated forest areas, pine needles pose a major threat of forest fires as these remain undecomposed for longer durations and leave a thick mat of slush which is a big fire hazard. The following activities are proposed for forest fire control with participation of PFM institutions.

- ◆ Identify sensitive forests to be cleared of needles;
- ◆ Identify and tie up with industry (cement plants uses needles as fuel in boilers) using the needles;
- ◆ Allocate forests sections (as per the capacity) to various PFM institutions;
- ◆ Sensitise PFM institutions about the importance of removal;
- ◆ Provide tools/ equipment (rackers, net for bundling, portable bailing/compressing machines) etc) to PFM institutions.
- ◆ Conduct collection of needles

Geographically, pine needle collection and utilisation to be confined in Bilaspur Mandi, and Shimla district areas.

(10) “Component 1.2.8: Forestry Intervention at Outside of Forest Areas”

In case the PFM institutions (VFDSs, BMC sub-committees) are willing to and there are lands available for plantation establishment outside of forest areas (including private lands), The following types of plantation can be established with the support of the project. Management and tending of intervention areas shall be the responsibilities of the respective PFM institutions or

owners of intervention areas. In principle, the same cost/ work norms as that of forest areas will be applied.

- ◆ Fodder and Fuelwood Plantation
- ◆ NTFP/ Medicinal Plant Planation
- ◆ Bamboo Plantation
- ◆ Rehabilitation of Areas Infested with Invasive Species

3.7.1.3 “Component 1.3: Training for VFDSs”

(1) “Component 1.3.1: Training of VFDSs”

Training programmes for VFDSs would be structured into three subject areas 1) forestry/ biodiversity, 2) planning and implementation, and 3) organisational management. Project overview shall be given at the beginning of the training programme as orientation. Exposure visits within and outside of the state will be planned. Other similar projects assisted by JICA may be visited to learn from their experiences and for networking. As for the peer learning and monitoring purposes, annual and quarterly workshops are also proposed. The outline of the indicative training programmes is given hereunder.

i. Project Orientation and Forestry/ Biodiversity Nexus

The learning objectives include VFDSs to understand 1) the project objectives and their roles in project planning, implementation and M&E; 2) relevance of forest ecosystem and biodiversity management and 3) linkage between livelihoods and forest ecosystems and biodiversity management. The orientation and training shall be given by the DMU subject matter specialists and FTU coordinator and organised at GP level. Subject specific materials can be prepared by PMU to be used during the programmes especially for the forest ecosystems management, SATOYAMA and Human wildlife conflicts.

Table 3.7.1.7 Indicative Topics for Project Orientation and Forest/ Biodiversity Nexus

| No. | Topics | Outline | Duration | Suggested Participants |
|-----|------------------------------|---|----------|--|
| 1 | Project orientation | Project objectives and approaches Forest ecosystem management and livelihood improvement Roles and responsibilities of the stakeholders including VFDS HP PFM Regulation 2001 | 1 day | Executive members of VFDSs/ Gram Pradhan/ Ward Panches/ Ward Facilitators |
| 3 | Forest Ecosystems management | Understanding forest ecosystem management Forest regeneration Forest and water Soil moisture conservation measures Forest Protection from pest, diseases and fire NTFP/ MAP, Fodder, Fuel wood plantations Grazing/ Pasture management Agro-forestry Farm –Forestry SATOYAMA | 1 day | |
| 5 | Human-Wild life Conflict | Changing relationship of human and wildlife Coping mechanism Importance of habitat management and the role of community | 1 day | |

Source: JICA Study Team (2017)

ii. Planning, Implementation and Organisational Management

This capacity building module is common for VFDSs and BMCs. The programme would entail transfer of requisite skills for committees to provide appropriate guidance to community members on project objective and implementation process. Learning from field study highlighted the sustainability operations of forest-based committees as one of the biggest challenges to their survival. Hence, aspects related to operational issues and financial management of VFDSs and BMCs will be emphasised through training sessions and workshops. The training shall be undertaken by DMU subject matter specialists and FTU coordinator. Field manuals are to be developed by PMU prior to the training of the community level institutions and used during the training programmes. Templates to be used for planning and record keeping shall also be attached as part of the field manuals. As these manuals to be used by the community level functionaries, the contents shall be made simple and easy to use. Prior to the finalisation of the manuals, draft materials shall be shared with them and incorporate suggested changes as required.

Table 3.7.1.8 Indicative Topics for Planning, Implementation and Group Management

| No. | Topics | Outline | Manuals to be prepared | Duration | Suggested Participants |
|-----|------------------|--|--------------------------------------|----------|---|
| 1 | Planning | Role of VFDSs and BMCs in Planning Vision Building Procedure and methods of planning Action / annual planning | Field Manual for Planning | 1 day | Executive members of VFDS/ BMC/ Ward Facilitators/ GP Mobilisers (BMC only) |
| 2 | Group Management | Execution, Monitoring and Evaluation Documentation and accounts management Financial record keeping | Field Operation Manual for VFDS/ BMC | 2 days | |
| 3 | Gender | As in Attachment II.3.4.4.1 | | | |
| 4 | Social Audit | Objective of social audit Statutory Audit Responsibilities of VFDS/BMC in social audit Preparation of social audit report | | 1 day | |

Source: JICA Study Team (2017)

(2) “Component 1.3.2: Exposure Visits by the Community Institutions”

Exposure visits will be planned to be undertaken for VFDSs and BMCs jointly. The objective of the exposure visits is to gain from the experiences of the advanced areas or groups with regards to forest and biodiversity management. The participants to the exposure visits shall be recommended by VFDSs/ BMCs and approved by FTU. The visits are proposed for both within and outside of the state. Each batch shall have at least 40% of women participants.

Table 3.7.1.9 Proposed Exposure Visits by Community Institutions

| SN | Place | Purpose | Suggested Participants | Duration |
|----|---|---|--|----------|
| 1 | Good Practices in HP (Within state) | To obtain lessons learned from the existing forest related project | VFDS/ BMC Representatives; community leaders | 3 days |
| 4 | Other JICA forestry project (Outside State) | To learn from the successful model of community based forest institutions and activities Uttarakhand, Tripura and Odisha may be visited. | | 7 days |

Source: JICA Study Team (2017)

(3) “Component 1.3.3: Joint Workshops for Community Level Institutions (VFDSs/ BMCs)”

At a range level quarterly workshops of VFDSs/ BMCs shall be organised for progress reporting and experience sharing. Representatives of all the VFDSs/ BMCs in the range shall attend the workshop. Annual workshop of VFDSs/ BMCs shall be held at division level. Representatives from all the VFDSs/ BMCs including CIGs/ SHGs in the division shall take part in the joint workshop. (The annual workshop can also be used to promote the products produced by CIGs/ SHGs.) This provides an opportunity for the participants to share experiences, issues, and achievement from the project at a division level. Each workshop shall have at least 40% of women participants.

Table 3.7.1.10 Annual and Quarterly Joint Workshops by VFDSs and BMC

| No. | Name | Purpose | Facilitator | Venue | Duration | Participants |
|-----|--------------------------------------|--|--------------------------------------|----------|----------|--|
| 1 | Annual Workshop of VFDSs/ BMCs | <ul style="list-style-type: none"> Sharing best practices, innovations and challenges faced by VFDSs and BMCs. Sustainability and networking of VFDSs/ BMCs Activities done by CIGs/ SHGs Sharing future project plans | DMU/ FCCU Subject Matter Specialists | Division | 2 days | Representatives of VFDS/ BMC/ CIG/ SHG and Ward Facilitators in the division |
| 2 | Quarterly Workshop of VFDSs and BMCs | <ul style="list-style-type: none"> Sharing best practices, innovations and challenges faced by VFDSs/ BMCs. Progress reporting | FTU Coordinators | Range | 1 day | Representatives of VFDSs/ BMCs, Ward Facilitators and community leaders in the range |

Source: JICA Study Team (2017)

3.7.1.4 “Component 1.4: Departmental Mode”

(1) Composition of Activities

In considerations of the review of the DPR, lessons learned from forest management in HP, and the draft log frame for the Project, this departmental mode will be restructured i) more to support and strengthen the implementation of PFM mode activities, and ii) conduct activities which contribute to the sustainable forest management but not fully practically to do by the PFM mode due to difficulties in terms of intervention locations and technical capacities.

Forest management activities under departmental mode are described as follows.

1.4 Departmental Mode

- 1.4.1 Site Specific Planning and Monitoring
- 1.4.2 Improvement of Forest Boundary Management at Project Intervention Areas
- 1.4.3 Improvement of Nurseries
- 1.4.4 Seedling Production
- 1.4.5 Non-PFM Drainage Line Treatment (ex-situ SWC work: including treatable surface Erosion Control)
- 1.4.6 Secondary Silvicultural Operations for Improvement of Existing Forests
 - Thinning
 - Climber Cutting
 - Cleaning
- 1.4.7 Improvement/ Densification of Moderately Dense Forest Assisted Natural Regeneration: ANR with or without gap planting/ patch sowing
- 1.4.8 Afforestation/ Improvement of Open/ Scrub Forest
 - Development of Species of Special Interest/ Niche
- 1.4.9 Improvement of Forest Quality at Key Concerned Forest Areas
 - Conversion of mono-culture forest stands to multi-species forest stands
- 1.4.10 Improvement of Pastures/ Grasslands (including in-situ SWC work)
 - Dry Alpine Pastures
 - Other Grasslands
 - Establishment of Fallow Pastures/ Grasslands
- 1.4.11 Forest Fire Management
 - Forest Line Creation and Maintenance

(2) “Component 1.4.1: Site Specific Planning and Monitoring”

In principle, the same activities for planning and monitoring to be done by the PFM mode (field investigations and planning/ monitoring exercises) to determine site specific treatments as well as monitoring for project intervention areas (ANR/ plantation/ pasture treatment areas and drainage line treatment areas) to be implemented by the departmental mode.

(3) “Component 1.4.2: Improvement of Forest Boundary Management at Project Intervention Areas”

The activities for geo-referencing of forest boundaries and construction/ repair of forest boundary pillars will be aimed mainly to improve boundaries of forest areas (reserved forest, demarcated/ un-demarcated protected forests) and their forest blocks in areas where sites have been selected for interventions of the sustainable forest ecosystem management component under the Project⁴. These activities will be only implemented in forest boundaries surrounding the project intervention areas and requiring improvement in forest boundary management. These activities are aimed for clear demarcation and validation of forest areas, to prevent further encroachment to the forest area. This work will include the following activities.

⁴ The Survey and Demarcation to be conducted during the preparatory work are for PFM area/ treatment area boundaries, whereas the consolidation and demarcation under the non JFM mode are intended for notified forest area boundaries.

1.4.2.1 Survey for Geo-referencing Forest Boundaries

- ◆ Review of existing documents and maps
- ◆ Geo-referencing of revenue village maps and existing forest boundary maps
- ◆ Boundary identification and demarcation survey using GPS
- ◆ Preparation of geo-referenced boundary map based on GPS data (range level)
- ◆ Identification of new boundaries to be installed/ re-installed

1.4.2.2 Installation of Boundary Pillars

- ◆ Fixing and installation of boundary pillars

1.4.2.3 Maintenance of Boundary Pillars

- ◆ Repair and Maintenance of boundary pillars

The boundary pillars to be installed will be boundary pillar (large) and check pillars (small) which specifications/ designs are determined by HPFD. Indicative details of activities for installation and maintenance of boundary pillars are explained in **Attachment II.3.7.1.7**.

(4) “Component 1.4.3: Improvement of Nurseries”

The activity for improvement of permanent nurseries will be aimed to upgrade seedling production capacity in order to provide high-quality seedlings of local/regional species primarily for the project purpose. Due to lack of additional lands available for new nursery construction, renovation/ improvement /extension of existing nurseries to be planned under the Project. The improvement of nurseries will be conducted at the circle level and at the range level.

i. Upgrading to Modern Nurseries

The activity for improvement of permanent nurseries will upgrade existing circle level central permanent nurseries within the Project area into “Modern Nurseries”. Six central permanent nurseries (one per each Circle) are assumed as the target for upgrading under the Project.

The upgrading to the modern nursery aims to achieve the following objectives in addition to the objectives indicated at the above;

- i) demonstration,
- ii) replication and
- iii) production of larger quantity seedlings.

Indicative description of the works for the upgrading is summarised in **Table 3.7.11**. The actual designs, types and quantities of required facilities will be decided in accordance with the site-specific requirements (water availability, access, available space, etc.) and finalised planting stock production capacity/demand of each nursery.

Table 3.7.1.11 Indicative Description of Modern Nurseries to be Upgraded

| Item | Description | | |
|--|--|--|--|
| Increased Production Capacity | 200,000 Seedlings/ year per nursery | | |
| Required Area | - Indicative net production area: 0.7 ha - Other areas : ~ 0.7 ha | | |
| General Usage Facility | <table border="0"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> - Fencing (barbed wire fencing with RCC pillars) - Office cum mali hut - Storage cum lab - Cement concrete road - Pump house with 4m³ over head tank and pump generator house </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> - Bore well - Water pipe line network - Shed for storage purpose (compost heap, potting media storage, scrap material, root-trainers etc) </td> </tr> </table> | <ul style="list-style-type: none"> - Fencing (barbed wire fencing with RCC pillars) - Office cum mali hut - Storage cum lab - Cement concrete road - Pump house with 4m³ over head tank and pump generator house | <ul style="list-style-type: none"> - Bore well - Water pipe line network - Shed for storage purpose (compost heap, potting media storage, scrap material, root-trainers etc) |
| <ul style="list-style-type: none"> - Fencing (barbed wire fencing with RCC pillars) - Office cum mali hut - Storage cum lab - Cement concrete road - Pump house with 4m³ over head tank and pump generator house | <ul style="list-style-type: none"> - Bore well - Water pipe line network - Shed for storage purpose (compost heap, potting media storage, scrap material, root-trainers etc) | | |
| Seedling Production Facility | <table border="0"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> - Nursery beds with inspection path and drain - Agronet shed for nursery beds - Parabolic top poly house - Mist chamber - Drying yard with seed treatment facilities - Root trainers and trainer stands </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> - Hardening yard for root trainer Seedling - Plot for grafting facility and nursery bed - Vermi compost pit - Composting area - Other miscellaneous facilities and equipment </td> </tr> </table> | <ul style="list-style-type: none"> - Nursery beds with inspection path and drain - Agronet shed for nursery beds - Parabolic top poly house - Mist chamber - Drying yard with seed treatment facilities - Root trainers and trainer stands | <ul style="list-style-type: none"> - Hardening yard for root trainer Seedling - Plot for grafting facility and nursery bed - Vermi compost pit - Composting area - Other miscellaneous facilities and equipment |
| <ul style="list-style-type: none"> - Nursery beds with inspection path and drain - Agronet shed for nursery beds - Parabolic top poly house - Mist chamber - Drying yard with seed treatment facilities - Root trainers and trainer stands | <ul style="list-style-type: none"> - Hardening yard for root trainer Seedling - Plot for grafting facility and nursery bed - Vermi compost pit - Composting area - Other miscellaneous facilities and equipment | | |

Source: Compiled by JICA Study Team (2017) based on literature reviews and discussions with concerned HPFD officers.

ii. Improvement of Range Level Nurseries

The improvement of range level nurseries is intended to improve seedling production capacity and quality at the range level. The ranges where the upgrading to modern nursery will be held shall not be included.

Indicative description of the works for the upgrading range level nursery is summarised in **Table 3.7.12**. The actual designs, types and quantities of required facilities will be decided in accordance with the site-specific requirements (water availability, access, available space, etc.) and finalised planting stock production capacity/demand of each nursery.

Table 3.7.1.12 Indicative Description of Range Level Nurseries to be Upgraded

| Item | Description |
|-------------------------------|--|
| Increased Production Capacity | - 40,000 Seedlings/ year per nursery |
| Required Area | - Indicative net production area: 0.2 ha - Other areas : ~ 0.4 ha |
| General Usage Facility | <ul style="list-style-type: none"> - Office cum Storage - Water pipe line network and drainage - Shed for storage purpose (compost heap, potting media storage, scrap material, etc) |
| Seedling Production Facility | <ul style="list-style-type: none"> - Nursery beds with inspection path and drain - Agronet shed for nursery beds - Parabolic top poly house - Mist chamber - Other miscellaneous facilities and equipment |

Source: Compiled by JICA Study Team (2017) based on literature reviews and discussions with concerned HPFD officers.

iii. Maintenance of Upgraded/ Improved Nurseries

To maintain effective seedling production function of the upgraded modern nurseries and range level nurseries, maintenance works for nursery facilities are planned. The maintenance is planned to be conducted five years after the improvement of the nurseries. However, the actual timing as well as the content and the extent of the maintenance will be determined in consideration of the

nursery specific status. In total, 5% of total estimated cost for establishment of nurseries will be allocated for the maintenance activity as a part of the project base (capital) cost.

(5) “Component 1.4.4: Seedling Production”

In HPFD, cost norms for plantation/forestry operations and seedling production operations are compiled separately, since seedling production varies from less than 1 year to nearly 5.5 years depending on the species and types of seedlings (normal plant or tall plant). Tall plants would require bigger poly pots (up to size of 10” x 18”) and longer nursing period in comparison to so called normal plants.

Potential species to be adopted in the Project and their indicative seedling production information for normal plant and tall plants are summarised in **Attachment II.3.7.1.8**.

For the cost estimate, the following types of seedling production were adopted.

- ◆ 1 year raising of normal / chir / broad leaves plants
- ◆ 2 years raising of tall / chir / broad leaves plants
- ◆ 3.5 years raising of tall deodar/ban oak plants

(6) “Component 1.4.5 Non-PFM Drainage Line Treatment (ex-situ SWC work)”

The drainage line treatment under the departmental mode is intended to be implemented mainly in i) upland or downstream forest areas of PFM intervention areas under the Project, and ii) forest areas within the prioritised ranges where other departmental mode interventions to be conducted in vicinity or priorities/necessities for soil water conservation exist. This treatment is intended for improvement of overall water and moisture regimes as well as soil conservation of the concerned watershed/ catchment areas. Major potential Ex-situ SMC works to be considered will be basically the same as that of PFM mode as described in **Attachment II.3.7.1.2**. However, based on the site conditions and specific necessities for the intervention, more durable SMC structures such as concrete check dams which is not always possible to be established by the PFM mode will be taken up in the departmental mode intervention.

(7) “Component 1.4.6 Secondary Silvicultural (Tending) Operations for Improvement of Existing Forests”

Tending operations are aimed to provide and regulate growing spaces available for targeted trees to ensure their development. The following activities are regarded as major tending operations:

- ◆ Thinning/ improvement felling (to be implemented if conditions allow)
- ◆ Climber Cutting
- ◆ Cleaning
- ◆ Pruning

After the ban on green felling in HP, tending operations especially thinning/felling of trees were not conducted in the state. However, since the ban on green felling has been eased with some conditions based on a decision made by the Honourable Supreme Court, existing forests within

project intervention areas and where tending operations are allowed, the tending operations shall be adopted based on the results of the site-specific planning. Indicative descriptions of tending operations are provided in **Attachment II.3.7.1.9**.

Tending operations can be conducted by VFDSs. However, implementation of these activities may not always be feasible since i) sanction procedures to initiate thinning operations may require certain time and efforts and ii) existing forests may already have various use rights and not easy to delineate treatment areas for the tending operations. If VFDSs which prefer to implement the tending operations in the existing forests can resolve the above two issues, the tending operations can be considered under the PFM mode.

(8) “Component 1.4.7 Improvement/ Densification of Moderately Dense Forests”

In principle, the same activities as that of PFM mode is planned for the departmental mode, and to be implemented in sites which require such interventions as the Project but not feasible to be conducted by PFM institutions.

(9) “Component 1.4.8 Afforestation/ Improvement of Open/ Scrub Forests”

In principle, the same activities as that of PFM mode, especially of “Development of Special Interest/ Niche Species”, is planned for the departmental mode, and to be implemented in sites which require such interventions as the Project but not feasible to be conducted by PFM institutions.

The “Development of Special Interest/ Niche Species”, development of ash (*Fraxinus species*) and walnut (*Juglans regia*) will be mainly executed in the departmental mode since these species require longer time span for production and may have technical difficulties to be implemented by PFM institutions.

(10) “Component 1.4.9 Improvement of Forest Quality at Key Concerned Forest Areas”

In principle, the same activities for “the conversion of mono-culture stands to multi-species forest stands” as that of PFM mode is planned for the departmental mode, and to be implemented in sites which require such interventions as the Project but not feasible to be conducted by PFM institutions.

(11) “Component 1.4.10 Improvement of Pastures/ Grasslands”

In principle, the same activities as that of PFM mode is planned for the departmental mode, and to be implemented in sites which require such interventions as the Project but not feasible to be conducted by PFM institutions.

(12) “Component 1.4.11 Forest Fire Management”

Creation and proper and timely maintenance of fire lines can help in prevention of fires and its further spread. In the Project, fire line maintenance will be conducted at forest areas (reserved

forest, demarcated/ un-demarcated protected forests) and their forest blocks in areas where sites have been selected for project interventions. For watch and ward and fire line tracing of PFM treatment (ANR, Plantation) areas, the activity and cost to be covered under respective PFM mode treatments.

i. Creation of Fire Line

Descriptions of the work are shown below.

- For cost estimate purpose, 10 m wide fire line was estimated and to be established
- The fire lines will be constructed between September and December period after monsoon and before snow/dry season.

[September -October]

- Identify area/ strip for creation of fire line.
- Take GPS coordinates
- Delineate strip area (minimum 5m – maximum 10m)

[November-December]

- Remove all bushes, grasses, scrub, saplings in the delineated fire line area.
- Remove trees (if admissible) or de-branch the trees leaving small crown at the top
- First maintenance of the fire lines will be conducted in January and February for the following activities.
 - Remove of all bushes, grass, scrub, saplings from the area.
 - Sweep floor of fire line of all slash, grasses, humus etc

ii. Maintenance of Fire Line

Mainly the maintenance work indicated above as the “first maintenance of the fire lines” will be conducted for three years after the establishment of fire lines.

3.7.1.5 “Component 1.5: Training of Project related Staff of HPFD”

(1) “Component 1.5.0: Preparation of Guidelines and Manuals”

Prior to the implementation of the training programmes for various levels of project staffs and community institutions, project specific guidelines and manuals shall be prepared by PMU so that these materials can be used as textbook during the respective training programmes and as reference materials in due course. For this purpose, the project shall engage (a) subject matter specialist (s) to provide technical inputs. The guidelines and manuals shall be developed to cover different technical requirements of the project including PFM, community planning, implementation and M&E, group management and social auditing and etc. Other general forest management and forestry related trainings to be considered under Component 4.2.1.

(2) “Component 1.5.1: TOT for DMU Subject Matter Specialist and FTU Coordinators for Field Facilitation”

Training programmes on community development and livelihood improvement shall be delivered by DMU subject matter specialists and FTU coordinators. Therefore, the Training of the Trainers

shall be conducted by the project. An indicative TOT programme is outlined in **Table 3.7.1.13**. Follow up training shall also be given as required.

Table 3.7.1.13 Indicative Training for DMU Subject Matter Specialist/ FTU Coordinators for Community Planning and Livelihood Improvement

| No. | Topics | Outline | Trainer/ Partner | Duration |
|-----|---|---|---------------------------------|----------|
| 1 | Project Orientation and Facilitation Skills | Project orientation Forest, Biodiversity and Livelihood Nexus Roles and responsibilities of stakeholders Techniques for facilitation and group discussion Recording the discussions and reporting | PMU/ PMC/ Resource Person | 1 day |
| 2 | Gender | As per Attachment II.3.7.4.1 (b) | | |
| 3 | Preparation of FEMP/ CBMP and CD&LIP | Types and Levels of FEMP/ CBMP and CD&LIP Templates for FEMP/ CBMP and CD&LIP Vision Building Process of Planning – FEMP/ CBMP Process of Planning – CD&LIP - Identification and selection of CD&LI activities Gender consideration to be made during discussion Gender responsive budgeting Process of approval Implementation Framework of Activities Convergence | | 4 days |
| 4 | Organisational Management | Structure of VFDS/ BMCs Roles and Responsibilities of executive members Rules/ By-laws Record Keeping Management of project funds with particular emphasis on the CD&LIP fund Social Audits Statutory Audits | | 2 days |
| 5 | Livelihood Activities | Livelihood activities under HPFEM&LIP Potential activities CIGs/ SHGs Operation of CD&LIP Fund (Grant portion and revolving portion) Bank linkages and IGAs: identification, consultation, promotion Cluster based organisations – Cooperatives Enterprise development Business planning Networking and Convergence | | 3 days |

Source: JICA Study Team (2017)

(3) “Component 1.5.2: Training for Ward Facilitators”

For each VFDS, two facilitators will be engaged to assist the day to day operation of VFDS/ BMC and also functions as an interface between the project and community level institutions of the projects. The facilitators are expected to guide VFDS/ BMC in implementing project interventions as well as to facilitate community actions, meetings, events and training, and other associated activities in the Project. Thus, for their effective functioning, training needs to be provided so that they would have sufficient understanding on the project modalities and skills for facilitation. The training shall be given by the DMU subject matter specialists and FTU

coordinators who have undergone the TOT which is discussed in Component 4. An indicative training programmes for the Ward Facilitators are given in **Table 3.7.1.14**.

Table 3.7.1.14 Proposed Training for Ward Facilitators

| No. | Topics | Outline | Trainer/ Partner | Duration | Participants |
|-----|--|--|---|-----------|-------------------------|
| 1 | Roles and responsibilities of Motivator/ Facilitator | Project Outline Understanding sustainable forest management/ biodiversity conservation Roles and responsibilities of Motivator/ Facilitators Record and bookkeeping | DMU/ FTU | 2 days | 20 persons/ batch |
| 2 | Gender | As per Attachment II.3.7.4.1. (b) | | | |
| 3 | FEMP&LIP | Planning process Role of Motivators/ Facilitators Identifying community development and livelihood activities | DMU/ FTU | 2 days | 20 persons/ batch |
| 4 | Livelihood Interventions for CIGs/ SHGs | SHG, CIG Formation - Purpose, Membership, Process, Rules Savings: motivation, facilitation, hand holding SHG meeting, bookkeeping, Panchsutra and fund management Bank Linkages: Purpose, Procedures, Payment Various livelihood options Business planning Market/ Value chain Cluster based enterprise development | DMU/ FTU/ + SRLM Block Resource Person | 3 days | 20 persons/ batch |

Source: JICA Study Team (2017)

3.7.1.6 “Component 1.6: Research”

(1) “Component 1.6.1: Monitoring Data Accumulation for Nursing /Planting of Tall Plants”

Introduction of tall plants are adopted in HP for better survival and growth of planted seedlings. In the Project, tall plants will be used for some treatments and species. Taking this opportunity, a study to accumulate monitoring data for nursing/planting/tending of tall plants will be conducted in the Project. Based on the accumulated monitoring data, the following outputs are expected from the study for further effective forestry operations by tall plants.

- ◆ Realistic work norms (for materials and labours) for nursery operations, planting/ tending operations
- ◆ Growth Performance Records at nursery and after planting

The actual implementation activities for nursing, planting, protection of tall plants in the Project can be the target for the monitoring but overall conduct of the data compilation, analysis and output preparation shall be outsourced to concerned subject matter specialists or organisations. The preliminary TOR of the study is given in the **Attachment II.3.7.1.10**

(2) “Component 1.6.2: Monitoring Data Accumulation for Effective Pasture Management”

Similar to the Component 1.6.1, a study to accumulate monitoring data for nursing/planting/tending of dry alpine pasture improvement will be conducted in the Project. Based on the accumulated monitoring data, the following outputs are expected from the study.

- ◆ Realistic work norms (for materials and labours) for nursery operations, planting/ tending operations
- ◆ Growth Performance/ Biomass Records after planting/sowing

The activities like nursing, planting/sowing and protection of pastures undertaken in the Project shall be monitored but overall data compilation, analysis and output preparation may be outsourced to concerned subject matter specialists or organisations. The preliminary TOR of the study is given in the **Attachment II.3.7.1.11**

(3) “Component 1.6.3: Study for Effective SWC and Land Slide Control Measures”

Although large-scale land slide control will not be covered as an intervention by the Project, occurrence of land slides/slips especially along road side is prevalent in HP. In order to contribute to tackle such issues, research activities to identify effective SWC and land slide/slip control measures will be implemented in the Project. Through information/data collection and analysis from secondary data and field investigation, the following outputs will be prepared:

- ◆ Technical Guidelines for Hazardous area identification/ Hazard map preparation
- ◆ Technical Guidelines for Field survey at the landslide/slip areas
- ◆ Technical Guidelines for planning and designing of SWC and landslide/slip control measures
- ◆ Technical Guidelines for overall surveying, planning and designing

The activities are planned to be outsourced to qualified civil engineers or an organisation having expertise in land slide/slip control. The preliminary TOR of the study is given in the **Attachment II.3.7.1.12**.

3.7.2 “Component 2: Biodiversity Conservation”

Based on the preliminary assessment of the status of biodiversity in the prioritised project areas, the main issue to be addressed under this component is the human interference into ecosystem. Rich biodiversity of the Himalayan ecosystem has provided essential livelihood resources to people living in and around the area. As the population grew, their requirements for fodder and fuelwood increased. Demand for the precious medicinal plants and NTFPs are sought by the buyers in and outside the country. The way the natural resources are utilised or harvested were unsustainable and thus, hampered natural regeneration. Furthermore, due to the changes in the wildlife habitats inside the forest, wildlife such as monkeys and himalayan black bears started entering into human contacts and sometimes caused damages. Snow leopards, the state animal of HP, is also under threats of poaching.

Under the biodiversity conservation component, two sub-components are proposed. One is the scientific biodiversity management mostly to be undertaken by HPFD and targeting the protected areas and their surroundings in the project areas. The other is the community-based biodiversity conservation adopting SATOYAMA concept as a model, which provides a framework to achieve sustainable livelihoods and natural resource management in a holistic manner.

(1) Implementation Unit

i. Scientific Biodiversity Management

Scientific biodiversity management shall be undertaken by the departmental mode. Since the sub-component includes the activities at both inside and outside of protected areas, both territorial divisions and wildlife divisions are expected to take responsibilities and demands close collaborations between these divisions.

Management plans are site-specific and prepared for respective protected areas, thus wildlife division is considered appropriate to plan and implement activities in protected areas at the field level. To secure smooth linkage between the state/Project and the field level, territorial forest divisions and wildlife divisions, shall be responsible for effective activity implementation outside of the protected areas.

ii. Community Based Biodiversity Conservation

In HP, BMC is to be organised primarily at Gram Panchayat level with facilitation of the Himachal Pradesh State Biodiversity Board (HPSBB). Since conservation and sustainable management of biodiversity needs to involve multiple stakeholders and to target beyond the protected areas and notified forest areas, BMC at GP level will be effective in implementing the biodiversity related interventions and thus considered as a community level implementation unit of the Project. For the Project, ward level sub-committees are to be constituted under the project BMCs and would work as the actual implementation units of the BMCs. However, in certain ranges and locations, if there are specific needs and necessities, VFDSs can also take part in the community based biodiversity conservation.

3.7.2.1 “Component 2.1: Scientific Biodiversity Management”

(1) Composition of Activities

Details on effective activities and locations for interventions of scientific biodiversity management are to be identified and finalised during the surveys to be conducted during the preparatory phase of the Project. The following are the potential activities for the Project.

- i) Protected Area Management Improvement
- ii) Human-Wildlife Conflict Mitigation/Management
- iii) Wildlife Habitat Improvement
- iv) Recovery Programmes for Endangered Wildlife

The potential activities are summarised in **Table 3.7.2.1** and their descriptions are provided here under.

Table 3.7.2.1 Brief Description of the Potential Activities under Scientific Biodiversity Management

| Category | Proposed Activity | Executing Body | Methodology |
|--|--|--|--|
| i) Protected Area Management Improvement | To be finalised during the preparatory surveys to be conducted during the preparatory phase of the Project. The following are tentative activity: - Introduction of rotational grazing reserve to prevent overgrazing and to encourage recovery of fragile vegetation | Wildlife divisions and scientific institutes, in cooperation with local communities | For tentative activity: - Discussion on the concept and its implementation with local communities - Baseline information collection on the status of vegetation and grazing - Designing of implementation, areas and rule setting - Fencing the area for implementation - Training of the staff for monitoring - Education to local communities |
| ii) Human-Wildlife Conflict Mitigation/ Management | - To be identified during the preparatory surveys to be conducted during the preparatory phase of the Project. | Territorial forest divisions and scientific institutes, in cooperation with local communities | - Baseline information collection on the status of human wildlife conflicts in HP - Selection of targets and extent of human-wildlife conflict mitigation/management to be covered in the Project. - Exposure visit and development of the conflict management system in HP - Implementation, monitoring and evaluation of the management system in HP |
| | - Establishment of rapid response teams | Territorial forest divisions | - Procurement of equipment and goods for the rapid response team which responds to human-wildlife incidences. - Setting up special units for the conflict management in several territorial forest divisions |
| iii) Wildlife Habitat Improvement | To be finalised during the preparatory surveys to be conducted during the preparatory phase of the Project. The following are tentative activities: - Plantation of native and diverse floral species including herbs, shrubs and trees, to enrich habitat for wildlife and biodiversity, both in and outside protected areas - Provision of water drinking place for wildlife | Territorial forest divisions and wildlife divisions of HPFD and scientific institutes, in cooperation with local communities | For tentative activity: - Baseline information collection using existing PBR, biodiversity census, and other flora survey to select native species for plantation and other wildlife habitat improvement activities - Selection of the areas for plantation - Development of guidelines and area-specific plans for the enrichment - Training for the staff and local communities how to sow seeds, to avoid overgrazing by livestock, and to record and monitor the status - Survey to find appropriate location to develop water drinking place for wildlife - Construction of water ponds or other structures to serve as water drinking place for wildlife |
| iv) Recovery Programmes for Endangered Wildlife | To be finalised during the preparatory surveys to be conducted during the preparatory phase of the Project. The following are tentative activities: | | |
| | - Conservation breeding for western tragopan, cheer pheasant and monal | Wildlife divisions, veterinary department and scientific institutes | For tentative activity: - Baseline information collection on current status of conservation breeding efforts and activities - Improvement of existing captive breeding facilities - Training of the staff, with full-time deployment of expertise specifically trained for conservation breeding - Development of reintroduction programme |
| | - In-situ conservation of critically endangered wildlife | Wildlife divisions and scientific institutes | For tentative activity: - Baseline information collection on current status of critically endangered species in HP, including utilisation of PBR and biodiversity census - Selection of the target species and development of in-situ conservation plan - Implementation, monitoring and evaluation of the conservation plan |

| Category | Proposed Activity | Executing Body | Methodology |
|----------|---|---|--|
| | - Awareness raising among local communities, including rehabilitation of education facilities | Wildlife divisions of HPFD and scientific institutes, in cooperation with local communities | For tentative activity: - Baseline information collection on current status of educational facilities in the Project area - Development of conservation education strategy and plan, including development of education programmes/ tools/ materials, rehabilitation of education facilities and training of the staff - Procurement of equipment for education activities, including outreach programmes |

Source: JICA Study Team (2017)

(2) “Component 2.1.1: Preparatory Works”

Similar to the preparatory works required for the Component 1, area identification/selection and relevant survey/ planning will be conducted to determine details of the above-listed activities for the scientific biodiversity management component.

In principle, details of activities under the Component 2.1 to be identified and finalised during the preparatory surveys to be conducted during the preparatory phase of the Project.

(3) “Component 2.1.2: Protected Area Management Improvement”

Tentatively four protected areas are prioritised as protected areas to be targeted in the Project (Bandi Wildlife Sanctuary/ WLS, Kais WLS, Manali WLS, and Khokhan WLS). Out of four protected areas three of them, namely Bandi WLS, Kais WLS, and Manali WLS are also regarded as the key biodiversity areas in HP. In principle, interventions are to be carried out inside or surrounding areas of these protected areas.

Details on targets, activities, and locations for sub-programmes under the Component 2.1.2 to be identified and finalised during the preparatory surveys to be conducted during the preparatory phase of the Project.

However potential activity for the component 2.1.2 has been identified during the study and indicative descriptions of the identified activities are presented hereunder.

Introduction of Rotational Grazing Reserve to Prevent Overgrazing by Livestock and to Encourage Recovery of Fragile Vegetation

1) Background

Some protected areas suffer from overgrazing, which has a significant impact upon the landscape on a long-term basis. Fragile vegetation needs to be protected while traditional rights of local communities are to be respected.

2) Objective/Goal

Protection of vegetation while allowing livestock grazing as exercise of traditional rights of local communities

3) Activities

A concept of rotational grazing reserves will be introduced. Rotational grazing reserves protect an area intact (i.e. 10ha), for a certain grace period to promote rejuvenation of the

natural vegetation. When an area is closed for protection, another neighbouring area is opened for grazing where the vegetation status is carefully monitored to avoid overgrazing. Closure and opening of an area will be done on a rotational basis with neighbouring areas. The length of grace period depends upon the type of vegetation and its natural conditions, which requires scientific vegetation/ grazing baseline information collection, and discussions among HPFD, local communities and research institutes to agree with the length of the period and changes in land use patterns, and setting of rules for concerned operations.

Baseline information collection on the status of vegetation and grazing is essential prior to the planning, designing and implementation of the rotational grazing reserves as well as for scientific basis for rule setting and baseline data for monitoring and evaluation purposes. Collaboration with scientific institutes and local communities is essential for the baseline information collection.

Once design of the rotational system is agreed among all of the concerned stakeholders (HPFD, local communities, and other relevant organisations), the actual implementation is to be conducted. Fence construction is needed to prevent livestock from entering and grazing the reserve area. The construction should consider variation of seasonal weather conditions, low cost of maintenance, regular closure and opening of the area with an interval of 2-3 years, and appropriate design to match the concept and regulations of protected areas. Periodical monitoring of the area should be conducted for purposes of watch & ward of the closed areas and scientific data collection. Thus, training of the staff is important in its effective implementation. Frequent communication with local communities is also required to keep them informed of the status of vegetation and grazing based on the monitoring results to create a supportive environment towards rotational grazing.

(4) “Component 2.1.3: Human-Wildlife Conflict Mitigation/Management”

Activities to be considered under this component is broadly divided as follows

- ◆ Species/ area specific human-wildlife conflict mitigation/management
- ◆ Establishment of rapid response teams.

Details on targets, activities, and locations for “Species/ area specific human-wildlife conflict mitigation/management” to be identified and finalised during the preparatory surveys to be conducted during the preparatory phase of the Project. In consideration of the current status of human-wildlife conflicts, the following species shall be considered as priorities;

- Black bears
- Leopards
- Monkeys
- Wild boars.

Human – leopard conflict mitigation/ management has been identified as one of the potential activities to be considered under this component and indicative descriptions of the identified activities are presented hereunder for reference purpose.

The project activity “establishment of rapid response team” is planned to procure relevant equipment and goods of which enable rapid response teams to tackle human-wildlife conflicts at the conflict scenes and to improve prevention/protection measures. In principle, the equipment for the rapid response team for human wildlife conflicts will be procured at each territorial division under the Project, where human-wildlife conflicts are prevalent. The division level rapid response team will enhance the capacity of the existing rapid response teams for forest offences/human-wildlife conflict which were established at forest circle level by Notification No. FFE-B-F(9)-2/2016 dated August 24, 2016.

The composition of the team (especially of human resources) shall be determined based on the requirements and necessities of respective division.

Human – Leopard Conflict Mitigation/ Management

1) Background

Leopards are attacking local communities’ livestock and damaging their livelihoods. Addressing this issue is expected to meet the needs of the communities as well as conservation needs. Human-leopard conflict management guidelines were already developed by the Ministry of Environment and Forests in 2011, and it has been implemented in many other states with achievements. Similar conflict situations are existing in HP, thus, focusing on human-leopard conflict can be one of the priorities for the project intervention by applying the guidelines and experiences in other states.

2) Objective/Goal

Capacity building of HPFD and local communities to mitigate/manage conflicts with leopards

3) Activities

The statistics on the number of cases and compensation amount of human-leopard conflict is available, however the details of respective attacks are unclear, such as the number of leopards in the scene, the number and species of victim animals, how these animals are attacked and timing of attacks, evidence collection to identify the individual leopards, etc. There may be many cases unreported due to its less significant damage as well. The baseline data to address the conflict seems insufficient and necessary data for the conflict management should be collected.

“Guidelines for Human-Leopard Conflict Management”⁵, was published by MoEF in 2011 to provide a framework for the conflict management nationwide, based upon the consultations with a wide range of stakeholders and scientists and experiences in some States such as Jammu and Kashmir. Effective application of this guideline would require exposure visit of the key stakeholders to the States with rich experience in the conflict management, which is expected to contribute to the development of the conflict management system fine-tuned to the situation in HP.

⁵ Guidelines for Human-Leopard Conflict Management; Ministry of Environment and Forests (2011)

Basic framework for the conflict management system would follow that of the guideline, and the core would be setting up of special units for the conflict management. The special unit would consist of a senior officer, a qualified veterinarian, and a minimum of five trained support staff, to manage conflict situations. The project divisions with severe conflicts should be selected as the first batch to deploy the special units.

(5) "Component 2.1.4: Wildlife Habitat Improvement"

Details on targets, activities, and locations for sub-programmes under the Component 2.1.4 to be identified and finalised during the preparatory surveys to be conducted during the preparatory phase of the Project.

Potential activities identified during the study are i) Plantation of native and diverse floral species including herbs, shrubs and trees, to enrich habitats for wildlife and biodiversity, both in and outside protected areas, and ii) Provision of water drinking place for wildlife. Indicative descriptions of the identified activities are presented hereunder.

Plantation of native and diverse floral species to enrich habitats for wildlife and biodiversity

1) Background

Degradation in wildlife habitat is considered as one of the causes of wildlife encroachment onto human settlements. Maintaining their habitat in good condition is therefore expected not only to help minimise crop raiding by wildlife, but also to enrich biodiversity in the area. Enrichment of biodiversity, however, does not necessarily mean provision of natural food resources to wildlife. If natural food resources improves far away from the livelihood area of local communities, wildlife would not come to the human settlements in search of food and human-wildlife conflicts may decrease for a short period. On the other hand, nutritional condition of wildlife will be improved and their population will increase, which may amplify the conflicts with people. Provision of natural food resources is therefore a temporary makeshift measure to mitigate conflict and will not be actively taken up in the Project.

Wildlife habitat improvement is hereafter defined as recovery of damaged wildlife habitat and support for in-situ conservation programmes such as for endangered pheasants, vultures, snow leopards, etc., and not necessarily target food provision to wildlife.

2) Objective/Goal

Recovery of damaged wildlife habitat, both in and outside protected areas, by planting native species of the area to enrich biodiversity, and enhanced support for in-situ conservation programmes

3) Activities

Current status of the habitat, including the vegetation situation and degree of degradation, should be evaluated as a baseline. Expected animal species also need to be considered in the selection of native species for plantation, as some species require certain plant species in their habitat. For example, white rumped vulture is one of the animal species under ongoing

in-situ conservation programme, which breeds in chir pine⁶. Habitat requirements for monal are wide spread, ranging from forested areas of oak, rhododendron, blue pine and fir to alpine meadows intersected by clumps of fir and rhododendron⁷. Western tragopan is generally known to be habitat specific pheasant showing strong correlation with inter-related physical factors⁸, and the deodar fir and spruce forests with thick understorey of ringal bamboo is their typical habitat³.

Selection of native species for plantation therefore requires combination of baseline information on degraded vegetation with native plant species and study on the habitat characteristics of expected animal species in the area. **Table 3.7.2.2** summarises animal-habitat associations for characteristic animals of the state.

Table 3.7.2.2 Animal-Habitat Associations of Characteristic Animals in HP

| Characteristic species | Habitat type | Source |
|------------------------|--|-------------|
| White rumped vulture | - Breeding in the branched tall old trees of chir pine (<i>Pinus roxburgii</i>) | ① |
| Himalayan monal | - Widely ranging from forested areas of oak, rhododendron, blue pine and fir to alpine meadows intersected by clumps of fir and rhododendron - Summers on steep rocky and grass-covered slopes; winters in broadleaved and coniferous forest | ② ③ |
| Western tragopan | - The deodar fir and spruce forests with thick understorey of ringal bamboo is their typical habitat. - Showing strong correlation with inter-related physical factors | ② ④ |
| Koklass pheasant | - Prefers dense undergrowth in fir spruce forest, and it also occurs in oak deodar areas | ② |
| Cheer pheasant | - Its altitudinal distribution range is 1600-2500 m mainly on steep, south facing grassy slope with chir pine tree or scrub vegetation - Extremely wary and skulking. Steep hillsides with shrubs and stunted trees and wooded ravines or with some shrubs and grass cover - Conservation breeding site is located in the open hilly moderate slope mainly covered with grass and occasional scrubs like <i>Berberis aristata</i> , <i>Principia</i> and few seedlings to pole stage deodar which can be retained as such in the enclosure to provide natural hides to the birds | ② ③ ⑤ |
| Kalij pheasant | - Occurs in pure ban oak forests as well as mixed forests of deodar, blue pine and kharsu oak especially on northern aspect. It is found in thick undergrowth of jungle ravines but also frequents cultivation around villages - All forest types with dense undergrowth | ② ③ |
| Himalayan musk deer | - Subalpine oak and rhododendron forests (3000-4300 m); medium- to high-elevation coniferous forest; thick bamboo forests below alpine zone (2600-3000 m) | ⑥ |
| Asiatic ibex | - Steep crags above the treeline in the Himalayas up to 5500 m. in the Himalayas, frequents 3400-4400 m while in the trans-Himalayas frequents 4000-4725 m. Grazes on alpine pastures and wet meadows but always close to rocky precipitous terrain. Occasionally enters forests. In the trans-Himalayas frequents dry grassland steppe. | ⑥ |
| Blue sheep | - Mountainous regions above the treeline, open grassy or boulder-strewn ground and high cliffs. They use areas with crags and cliffs but largely as retreats from danger. When foraging they are found in alpine | ⑥ |

⁶ <http://hpforest.nic.in/files/Efforts%20on%20Vulture%20Conservation%20in%20Kangra%20District.pdf>

⁷ Pheasants of Himachal Pradesh; HP Forest Department, 2003

⁸ Conservation Breeding of Western Tragopan in Himachal Pradesh; Wildlife Institute of India, 2014

| Characteristic species | Habitat type | Source |
|------------------------|--|--------|
| | meadows. | |
| Himalayan tahr | - Temperate and subalpine forested precipitous terrain with grass cover and slopes with oak and bamboo forests. In the Greater Himalayas, found on southern forested slopes (1550-5300 m, although they prefer higher altitudes between 2000-4400 m). | ⑥ |
| Himalayan brown goral | - Steep but grassy mountain slopes (more than 30 degrees) with low tree cover and moderate shrubs interspersed with cliffs. Avoids shrub growth above its shoulder height. Uses forest cover, open gullies, cliffs and rocky areas for escape (400-4000 m). | ⑥ |
| Himalayan serow | - Thickly forested gorges, broadleaved valleys, and subalpine scrub with dense cover and boulder-strewn hills (300-3000 m). | ⑥ |
| Common leopard | - Deciduous and evergreen forests, scrub jungle, open country, and fringes of human habitation. Leopard have colonised erstwhile human habitation (such as sugar-cane fields) and are using them as habitat to breed and feed. Such leopards are therefore no longer to be considered as strays from the jungle. | ⑥ |
| Snow leopard | - Alpine as well as subalpine steppe, grassland, and scrub above the treeline. It favours lightly forested and steep terrain with rocky, broken country (1800-5800 m). Prefers areas with proximity to cliffs. | ⑥ |
| Tibetan grey wolf | - Inhabits cold desert of the trans-Himalayas. It has a wide tolerance level of habitat with different precipitation | ⑥ |
| Asiatic black bear | - Prefers heavily forested broadleaved and coniferous forests. It uses orchards, agricultural fields and human habitation to move between forest patches. More commonly from 1500-3500 m in the Himalayas. | ⑥ |
| Himalayan brown bear | - It is not a primarily a forest animal and inhabits alpine scrub and meadows above the treeline, although it is occasionally found in subalpine forests. | ⑥ |
| Yellow-throated marten | - Forests ranging from coniferous to broadleaved in hilly terrain (160-2500 m). Not found above the treeline. | ⑥ |
| <i>Rhesus macaque</i> | - This species is possibly the most diverse habitat user of all monkeys in India and is known to inhabit eight distinct habitats, i.e., temple surrounds, urban, rural, village-cum-pond, pond sides, roadsides, canal sides and forests. | ⑥ |
| Himalayan langur | - Subtropical to temperate broadleaved, coniferous and montane forest, and scrub (1500-3000 m). | ⑥ |

Sources: ① *Vulture Conservation in Kangra (HP) 2004-15*, HPFD, ② *Pheasants of Himachal Pradesh*, HPFD, 2003, ③ *Birds of the Indian Subcontinent*, Oxford University Press, 2011, ④ *Conservation Breeding of Western Tragopan in Himachal Pradesh*; Wildlife Institute of India, 2014, ⑤ *Management Plan of Chail Wildlife Sanctuary (2011-12 to 2020-21)*, HPFD, ⑥ *Indian Mammals A Field Guide*, Hachette India, 2014

With careful examination of these subjects, native species for plantation shall be selected, including herbs, shrubs and trees.

The areas for plantation should also be selected both in and outside protected areas, depending on the situation. Some portions of protected areas have been damaged through overgrazing, and planting native species with careful scientific consideration would accelerate the recovery of the vegetation. Planting native species outside protected areas would function not only as development of buffer zone between protected areas and human settlements, but also enrich biodiversity of the area that would raise the potential to improve local communities' livelihood such as medicinal plants collection and access and benefit sharing (ABS).

Species and scales for plantation would differ from place to place, and area-specific plans for the plantation would be required. To assist the planning at division level, guideline development for

the planning will be envisaged. The guideline would provide technical standard and administrative guidance; the former includes species selection, area selection, plantation and management after plantation, and the latter for institutionalising the activities, role sharing among territorial forest divisions, wildlife divisions, scientific institutes and local communities, etc. A draft to be prepared by PMU and subject matter specialists/ outsourced organisations during the preparatory.

Training for the staff and local communities would be required, such as how to sow seeds of different species, how to avoid overgrazing by livestock, and how to record and monitor the status.

Provision of water drinking place for wildlife

1) Background

Provision of water drinking place for wildlife is regarded as a part of wildlife habitat improvement. Provision of water to wildlife will give them another habitat option to spend their time. Many species of wildlife are expected to gather at the water drinking place one after another, which will also assist monitoring of wildlife.

2) Objective/Goal

Improvement of wildlife habitats through increasing water drinking places particularly inside protected areas and transitional zones which require such improvements.

3) Activities

Provision of water drinking place for wildlife is a part of habitat improvement, and survey to find appropriate location to develop such place is crucial. Cooperation between engineer and ecologists is required in location finding. Many animals are expected to gather around the place, and surroundings of the place will be trampled to damage soils and vegetation severely. Thus, location finding needs to make sure that the development will not threaten endangered plant species, and will not lead to irreversible damage to the ground such as landslide. Minimum scale and large numbers of intervention to nature would be recommended, rather than big scale and a few numbers of intervention. The former would provide diverse alternative habitat options, while the latter would lead to destruction of the area comparatively easily by large numbers of animals.

Once the location of intervention area is identified, probably within a year or two, development works for water drinking place for wildlife will start. The suggested works include construction of water ponds, check dams or other required structure.

(6) “Component 2.1.5: Recovery Programmes for Endangered Wildlife”

Details on targets, activities, and locations for sub-programmes under the Component 2.1.5 to be identified and finalised during the preparatory surveys to be conducted during the preparatory phase of the Project.

Tentative potential sub-programmes identified during the study are i) conservation breeding for western tragopan, cheer pheasant, and monal, ii) in-situ conservation of critically endangered

wildlife, and iii) awareness raising among local communities including rehabilitation of education facilities. Indicative descriptions of the identified sub-programmes are presented hereunder.

Conservation Breeding for Western Tragopan, Cheer Pheasant and Monal

1) Background

Conservation breeding for endangered pheasants have already been taking place for western tragopan in Sarahan, cheer pheasant at Chail WLS, and monal in Manali. Among the threatened pheasant species in the state, breeding efforts have been confirmed for these three species only, which justifies the Project to further support recovery of these species.

2) Objective/Goal

Improvement of the conservation breeding facilities and enhancement of the capacities for conservation breeding and consequent reintroduction to nature

3) Activities

These facilities play a significant role in conservation of endangered species in HP, however the condition of the facility needs improvement. The assessment of existing status of the breeding related interventions shall be undertaken during the preparatory phase of the project for needs assessment. Some facilities might have already been upgraded to accommodate the breeding couples, however more facilities may need improvement not only for breeding but also for display purposes. Facility improvement includes enrichment in the cage to provide better living environment for the animals, and potential expansion of the area to accommodate more breeding and display facilities.

Training of the staff is also needed, particularly deployment of trained experts is essential to scientifically support the efforts. Conservation breeding requires several experts such as veterinary service, captive breeding, species-specific caretaking, and sound captive animal management. Trained experts with appropriate background should lead the team, and the support staff need to have basic knowledge of these subjects.

The overall goal of conservation breeding is subsequent reintroduction of the species into nature. Reintroduction takes time and it is not clear if it is possible during the project period. However, the development of reintroduction programme is important and necessary for conservation breeding as it gives wider perspective to the breeding programme and dictates what activities are required as a preparation for reintroduction during the breeding programme. Exposure and exchange training in Japan (oriental white stork in Hyogo) and in India (other endangered bird species) could be an option for the staff training to widen and deepen the knowledge and skills in conservation breeding and reintroduction project.

In-situ Conservation of Critically Endangered Wildlife

1) Background

In-situ conservation for critically endangered wildlife has also been taking place for some species, such as snow leopards and vultures. HPSBB has prepared a new list of the threatened animal species of HP (**Attachment II.2.4.2**. 16 animal species are in the new list,

and snow leopard and four other species of vultures are included. Priorities in conservation efforts are yet to be determined.

2) Objective/Goal

Development of in-situ conservation plan for critically endangered animal species and improvement in the conservation efforts in the field

3) Activities

Considering the Project area and the endangered animal species in it, further understanding of current status of these species and discussion among the stakeholders is required to determine the priorities and target species. Including the utilisation of PBR and biodiversity census, baseline information collection should be conducted for this purpose.

Based upon the outcome of the baseline information collection, the target species should be selected and its in-situ conservation plan should be developed. The plan shall illustrate a list of activities, schedules, areas, executing bodies of respective activities, methodologies, estimates of budgets and human resources required, monitoring process and responsibility, etc. The plan should be examined on a scientific basis, after which the plan shall be put into practice. Monitoring and evaluation should also follow the process.

Awareness Raising among Local Communities including Rehabilitation of Education Facilities

1) Background

Awareness raising among the local communities is an indirect approach to recovery programmes for endangered wildlife but very critical in ensuring the sustainability of the conservation efforts through public support. Local communities' understanding and support from the society would however create a favourable environment for conservation and recovery of endangered wildlife, which can be a powerful assistance for implementation at the field level.

Education activities have been taking place in a form of wildlife week and nature camps, and educational facilities are often visited during such occasions. Sarahan Pheasantry for example is not usually open to the public to secure the environment for breeding, however many school children visit the facility during wildlife week as an educational facility. Some education activities could be conducted as a part of other programmes such as human-leopard conflict management, and such education activities are not easily surfaced nor summarised as education activities.

2) Objective/Goal

Achievement of local communities' active support for biodiversity conservation and enhancement of HPFD's education capacity.

3) Activities

Information on education activities and facilities needs to be collected and summarised, so as to understand the frequency and contents of communication on wildlife and biodiversity to and within local communities and to explore the possibilities of strengthening education activities. Baseline information collection would be the first step to collect such information

on current status of education activities and facilities in the Project area. The outcome would be studied and examined, based on which conservation education strategy and plan would be developed. The strategy would include programme development for diverse themes, development of education materials and facilities, and training needs of the staff. The education plan would include contents of education programmes elaborated to cater for respective situations, education material development for respective programmes, and schedule planning. Himalayan Bird Park in Shimla for example can be a good education facility but the structure, stuffed animals of characteristic in HP and their explanation boards are outdated. It would be worth consideration if the Park could be renovated and enriched in future to be more attractive and to have a stronger educational impact on the public. Procurement of equipment and mobility, such as vehicle, projector and screen, and other hands-on materials for education, would be required, particularly for outreach programme.

3.7.2.2 “Component 2.2: Training of Project related Staff of HPFD”

Training programmes and exposure visits in relation to the scientific biodiversity management shall be conducted by the Project for officers/staff at division and range levels who will be directly involved to the project interventions. An indicative TOT programme is outlined in **Table 3.7.2.3**.

Table 3.7.2.3 Indicative Training for Divisional/ Range Staffs for Scientific Biodiversity Management

| Category | Outline | Training Targets | Duration |
|---|--|---|-------------|
| Vegetation Monitoring | <ul style="list-style-type: none"> - Vegetation survey (species composition, biomass, etc.) - Judgement to prevent overgrazing by observing the vegetation status - Maintenance of fences - Communication with livestock keepers to obey rules, to collect information, etc. | Staff at wildlife divisions | 4 days |
| Human-leopard Conflict Mitigation/ Management | <ul style="list-style-type: none"> - Exposure visit to advanced areas | Staff at forest divisions | 3 days |
| Planting Native Plant species | <ul style="list-style-type: none"> - Lectures and exercises on how to sow seeds, how to avoid overgrazing by livestock, and how to record and monitor the status | Staff at forest division, local communities | 2 days |
| Conservation Breeding | <ul style="list-style-type: none"> - Exposure visit to advanced areas - Captive animal management such as enrichment in enclosures, monitoring of health conditions, etc. - Care for breeding, such as support for artificial breeding and natural breeding, species-specific treatment, etc. | Staff at wildlife divisions | 3 days each |
| Awareness Raising | <ul style="list-style-type: none"> - Development of education materials and programmes, such as information panels, hands-on materials and conservation games | Staff at wildlife divisions | 3 days |

Source: JICA Study Team (2017)

3.7.2.3 “Component 2.3: Research”

(1) “Component 2.3.1: Pilot Project on Biodiversity Corridor (Baseline Survey for Biodiversity Corridor)”

HP being in the heart of Himalayan Ecosystem, it would be important to adopt proactive biodiversity conservation measures such as biodiversity corridor which enables effective bridging and networking between the independently located protected areas and sanctuaries. This would encourage an integrated planning of the biodiversity management that includes land outside of notified forest or protected areas. However, as of now, no baseline data is available to evaluate the current status of biodiversity in and outside protected areas and to design an effective network of protected areas with potential corridor designation. Thus, there is a necessity for a pilot project on establishment and management of the biodiversity corridor.

At the initial stage of the pilot project, an outsourced agency shall coordinate and collaborate with HPSBB and HPFD, and prepare biodiversity inventory of the selected areas. HPSBB has PBR data and database that will provide vital data. Some data of PBR are confidential but usage of such data by the outsourced agency are essential and proper coordination shall be made between HPSBB and HPFD. The outsourced agency will analyse the data with GIS for identification of the potential areas for corridor. Based on the areas identified, the outsourced agency shall discuss with PMU to carry out initial selection of the area. Once the areas are selected, a field team shall visit the areas and organise the multi stakeholder platform, including BMCs, to discuss and confirm about the participation to the pilot project. The outsourced agency shall prepare recommendations of protected area network with potential biodiversity corridors. The preliminary TOR of the pilot project is provided in the **Attachment II.3.7.2.1**.

(2) “Component 2.3.2: Basic Study for designing Biodiversity Assessment”

As indicated in **Part I Section 6.4** of this report, biodiversity data in HP are insufficient and the updated status of biodiversity is not fully available. Availability of detail chronological data, such as species gradual disappearance and ecological degradation are also limited, which makes it difficult to understand the dynamics and its ecological meaning of the biodiversity, and to monitor the natural environment on a long-term basis. Comprehensive biodiversity assessment and baseline surveys are required in HP.

An outsourced agency shall conduct literature/web survey on existing long-term biodiversity assessments for review and to develop a basic concept/methods of applicable long-term biodiversity assessment for HP. Another example is “Monitoring Site 1000” by Biodiversity Centre of Japan. Some more approaches/methodologies of existing long-term biodiversity assessments shall be explored and analysed for further study.

Then after, field trial assessment and elaboration of developed basic concept/methods shall be conducted by the outsourced agency. Tentatively, 50 sites shall be selected for trial assessment, and the process shall be carefully monitored and analysed for further elaboration. Based on these

activities final version concept/methods for the biodiversity assessment in HP shall be proposed. **Attachment II.3.7.2.2** depicts the preliminary TOR of the assessment.

3.7.2.4 “Component 2.4: Community Based Biodiversity Management”

(1) Introduction

The community based biodiversity conservation sub-component shall adopt the SATOYAMA framework as a way to achieve holistic biodiversity conservation. There are five elements that need to be taken into consideration while developing the activities: 1) resource use within the carrying capacity and resilience of the environment; 2) cyclic use of natural resources; 3) recognition of the value and importance of local traditions and cultures; 4) multi-stakeholder participation and collaboration; and 5) contribution to socio-economies. The indicative proposed activities under the sub-component are described in **Table 3.7.2.4**, and these activities shall be implemented as a package for respective BMCs.

Table 3.7.2.4 Description of Key Activities under Community Based Biodiversity Conservation Sub-Component

| Category | Proposed Activity | Executing Body | Methodology | SATOYAMA Elements Considered |
|--|--|---|---|--|
| i) Preparation for the Community Based Biodiversity Management Plan (CBMP) | - Preparation and implementation of the CBMP | SBB, territorial/ wildlife forest divisions of HPFD and local communities | <ul style="list-style-type: none"> - Selection of BMCs with PBR completed to support CBMP preparation, and consensus building for CBMP development - Capacity building of BMCs, including exposure trips to other advanced areas - Training of the field staff and BMC members to facilitate the participatory planning process - Implementation, monitoring and evaluation of CBMP | <ul style="list-style-type: none"> - 3) - 4) - 5) |
| ii) SATOYAMA based Biodiversity Conservation Activities | - Promotion of sustainable use and management of natural resources | Territorial/ wildlife forest divisions of HPFD, SBB and local communities | <ul style="list-style-type: none"> - Capacity building of local communities through BMC/Common Interest Groups under BMC - Promotion of sustainable use and management of pasture/grassland - Promotion of sustainable harvesting and primary processing techniques of NTFP, including lantana/pine needle bricket making - Training of SBB and concerned BMCs on Access and Benefit Sharing (ABS) - Promotion of ecotourism | <ul style="list-style-type: none"> - 1) - 2) - 3) - 5) |
| | - Registration of Biodiversity Heritage Sites (BHS) | Ditto | <ul style="list-style-type: none"> - Baseline information collection on sacred groves, sacred wetlands, traditional crop areas and other potential sites for the BHS designation - Examination of potential sites for BHS designation and suggestion of BHS to the State Government - Support for BMCs to develop management plans of BHSs | <ul style="list-style-type: none"> - 3) - 4) - 5) |
| | - Eco Tourism | Ditto | <ul style="list-style-type: none"> - Site selection survey, consultations and feasible study, - GP level Implementation Plan - Infrastructure assessment and development - Selection and implementation of investment activities related tourism | <ul style="list-style-type: none"> - 1) - 3) - 4) - 5) |

| Category | Proposed Activity | Executing Body | Methodology | SATOYAMA Elements Considered |
|----------------|--|---|--|--|
| iii) Eco Clubs | - Establishment of Eco Clubs at secondary schools | Territorial forest divisions of HPFD, SBB, education department and other relevant institutions | <ul style="list-style-type: none"> - Outreach to secondary schools to facilitate establishment of eco clubs and supervision of the clubs at the initial stage - Technical support to facilitate the unique and interesting activities of respective eco clubs characterising the area - Organisation of the State-wide competition to exchange activity experiences among the clubs, and to award the most interesting/active clubs | <ul style="list-style-type: none"> - 4) - 5) |
| | - Expansion of Eco Clubs at higher education level, and extension of activities at lower levels of schools | Territorial forest divisions of HPFD, SBB, education department and other relevant institutions | <ul style="list-style-type: none"> - Technical support to expand eco club activities to higher education levels such as colleges and universities by assisting graduates of the clubs at secondary schools - Outreach to primary schools and nursery schools to discuss the potential for eco clubs to have some opportunities to talk about / exhibit/ field visit for conservation issues - Technical support for eco clubs for education occasions at primary and/or nursery schools | <ul style="list-style-type: none"> - 4) - 5) |

Source: JICA Study Team (2017)

The Project will discuss with the selected BMCs to build consensus for the community based biodiversity management plan (CBMP) development. BMCs that agree to develop CBMP will be the target for the Project support. Capacity building will be required for the selected BMCs to prepare CBMP, and training of BMC members would be undertaken. BMC members will explore the varieties of activities for biodiversity conservation in their respective areas. Such activities shall respond to the locally specific biodiversity conservation needs. Once CBMPs are prepared, respective BMC will implement it in respective areas. PMU will monitor and evaluate its implementation and share the information with HPSBB.

(2) “Component 2.4.1: Preparatory Works”

i. “Component 2.4.1.0: Preparation of Guidelines and Manuals”

The project specific guidelines and manuals are important tools to communicate the knowledge and skills required to implement and manage project activities. Thus, the relevant materials are to be prepared during the preparatory works. The community based biodiversity management component involves community based institutions, namely BMC and its sub committees, and also CIGs/ SHGs for implementation of activities. Thus, topics to be covered may include biodiversity – livelihood nexus, community level planning and implementation of biodiversity management activities and community development/ livelihood activities. The works shall be done as part of “Component 1.5.0: Preparation of Guidelines and Manuals” under the Participatory Forest Management.

ii. “Component 2.4.1.1: Identification of Potential Intervention Areas”

Similar approach and methodologies, as indicated in **Section 3.7.1.1 (2)**, will be adopted for identification and selection of potential intervention areas. Protected area information (location, size, etc.) and biodiversity richness related information shall be further overlaid for the identification of community based biodiversity management potential intervention areas.

iii. “Component 2.4.1.2: Identification of BMCs”

Once the potential intervention areas are identified spatially, GPs where the Biodiversity Management Committee (BMC) has been established and People’s Biodiversity Register (PBR) is prepared will be identified and prioritised. The indicative prioritisation criteria for GPs for community based biodiversity conservation are given in **Table 3.7.2.5**. BMCs which are in the process for formulation or preparation of PBR may also be considered as potential BMCs for the Project. In such case, the Project in partnership with HPSBB will facilitate establishment/ preparation of BMC and preparation of PBR.

The process of consensus building shall follow as depicted in **Section 3.7.1.1 (5)**. The consensus to take part in the project shall be established at Gram Sabha and a resolution shall be passed. The indicative criteria for selection BMCs are given in the **Table 3.7.2.5**. In the case of BMC, initial contacts shall be established by FTU with GPs and BMCs. Further, one GP mobiliser and ward level facilitators for sub-committees to be constituted at the selected wards shall also be engaged for BMCs.

Table 3.7.2.5 Indicative Criteria for Selection of BMCs

| | Criteria | Score | Description |
|-------------------------|--|-----------------|---|
| Exclusion Criteria | BMC has not been established in GP and PBR has not been prepared. | To be excluded. | - |
| Prioritisation Criteria | | | |
| 1 | Degraded areas | 1-5 | 0-20%=1/ 21-40%=2/ 41-60%=3/ 61-80%=4/ 81-100%=5 |
| 2 | Presence of Sacred Grove | 1 or 2 | 1=No/ 2= Yes |
| 3 | Eco tourism activities are recognised as an important economic activity in the GP. | 1 or 2 | 1=No/ 2= Yes |
| 4 | Incidences of human wildlife conflict by the number of cases reported to the HPFD | 1-3 | 1=not severe/ 2=mid/ 3=severe |
| 5 | No of Households in the potential wards | 1-5 | 1-20=1/ 21-40=2/ 41-60=3/ 61-80=4/ 81<=5 |
| 6 | Distribution of commercially important NTFP/ MAP species | 1-3 | 1=less than 2 species/ 2= less than 4 species/ 3more than 5 species |
| 7 | Accessibility by the all weather road from the main road | 1 or 2 | No access =1/ Have access=2 |
| 8 | Accessibility by the kaccha road | 1 or 2 | No access =1/ Have access=2 |
| 9 | Time required to reach the community from the range office | 1-3 | More than 3 hours =1/ <2hours =2/ 2>=3 |
| | Maximum Score | 27 | |

Source: JICA Study Team (2017)

Once the consensus is built at the GP level, the wards where the project interventions will be implemented shall be identified. FTU along with BMC members and other GP representatives shall jointly approach the potential wards for community mobilisation. The indicative process of community mobilisation is given in **Section 3.7.1.1 (7)**.

In principle, the selected BMC shall be divided into two batches, reflecting locations and numbers of BMCs existing in the project targeted ranges. In consideration of overall schedule of required preparatory works, 1st batch BMCs shall be selected by the first quarter of Year 2 (by June 2019), and 2nd batch by the first quarter of Year 3 (by June 2020). Tentatively, 10 BMCs to be selected for each batch. From each BMC, three ward level sub-committees are assumed to be selected, thus a total of 60 BMC sub-committees (30 per batch) are targeted in the Project. The actual selection of BMCs (subcommittees) and their batches will be conducted by FTU with thorough consultation/confirmation with concerned BMCs.

iv. “Component 2.4.1.3: Survey and Mapping”

Similar approach and methodologies as indicated in **Section 3.7.1.1 (4)**, will be adopted for survey and demarcation of identification of intervention areas. For BMC, intervention areas shall be selected by a cluster approach reflecting locations of ward-level sub-committees in a single GP.

v. “Component 2.4.1.4: Engagement of GP Mobiliser and Ward Facilitator”

GP Mobiliser shall be engaged to assist the day to day operation of BMCs and ward facilitators for the sub-committee. Indicative terms of engagement is given in **Table 3.7.2.6**.

Table 3.7.2.6 Indicative Terms of Engagement of GP Mobiliser and Ward Facilitator

| Particulars | GP Mobiliser | Ward Facilitator |
|------------------------|---|---|
| Honorarium | 5,000 Rs/ Month | 4,000 Rs/ Month |
| Duration of Engagement | 2 years per batch 4 th year onwards, the VFDS shall take a decision whether to continue their engagement and decide on the amount of honorarium. 4 th year onwards, the honorarium shall be borne by the VFDS. | |
| No of persons engaged | 1 person per BMC | 1 male and 1 female for each sub-committee |
| Selection | Nomination and selection by the gram sabha | Nomination and selection by the ward sabha |
| Objectives | To assist the day to day operation of BMC To coordinate between the project/ FTU/ GP/ BMC sub committees, wards and group members | To assist the day to day functioning of ward level users groups/ SHGs/ common interest groups To coordinate between the project/ FTU/ GP and wards and group members |

Source: JICA Study Team (2017)

vi. “Component 2.4.1.5: Training of GP Mobiliser and Ward Facilitator”

GP Mobiliser and ward facilitators engaged for BMC areas shall be trained as in the **Table 3.7.1.14 in Section 3.7.1.5 (3)** along with the ward facilitators engaged for VFDS.

vii. “Component 2.4.1.6: Community Mobilisation”

Once the GP mobilisers and ward facilitators are trained, community mobilisation shall take place by FTU, GP mobilisers and ward facilitators at the identified ward level.

The ward level consensus building shall be done with ward sabha. A resolution shall be passed for taking part in the project implementation and BMC sub-committee shall be organised as the grassroots level planning and implementation unit of the project.

viii. “Component 2.4.1.7: Preparation of Community Biodiversity Management Plan”

Community Based Biodiversity Management Plans (CBMP) will be prepared by the participating BMCs. The planning process is as depicted in **section 3.7.1.1. (8)**. The planning process shall be facilitated by DMU subject matter specialists and FTU coordinator along with GP mobiliser and Ward facilitators. The planning manual and formats shall be developed by PMU to facilitate effective community based biodiversity management.

The plan will comprise of the perspective plan for 10 years and micro plan of 5 years. Annual implementation plan will also be prepared for implementation. During micro planning (preparation of CBMP), zoning of the Gram Panchayat by different land use and identification of the threats to biodiversity should be undertaken at the initial stage. This would provide the basis for preparation of activities to be planned in the CBMP.

As of October 2017, HPSBB recognised 120 PBRs that have been prepared in the state. CBMP will be developed on the basis of PBR, and BMCs that have already prepared PBRs will be selected in priority.

ix. “Component 2.4.1.8: Annual Planning/ Revisiting Micro Plan (4th Year)”

Under the CBMP and CD&LIP, broad action plan is prepared for 5 years based on the 10 years vision. CBM and CD&LIP shall be prepared at the BMC sub-committee at the ward level with facilitation by DMU subject matter specialists/ FTU coordinator, GP mobiliser and Ward facilitators. The planning process shall follow the process depicted in the **Section 3.7.1.1 (9)**. The sub-committee level plans shall be aggregated by each BMC and forwarded to FTU where the range level aggregated plan is to be prepared. The aggregated range plan shall further forwarded to DMU for approval.

To facilitate the convergence and to maintain cohesion with the state biodiversity management structure, the aggregated plan of sub-committees at BMC level shall be shared with GP, range plan with Community Development Block and also with the Block level BMC, and DMU level plans shall be shared with the district BMC and the concerned district offices.

The annual planning is to be done between September and December prior to the next financial year as in the FEM&LIP planning process. During the exercise, the achievements of the previous year shall be assessed and identify issues and corrective measures to further increase the efficiencies and effectiveness of the project implementation. In the annual planning undertaken

during 4th year, a broad action plan shall be prepared for the coming 5 years. The process of the 2nd 5 year action plan shall follow the same step as discussed in the **Section 3.7.1.1 (9)**.

(2) “Component 2.4.2: Community Based Biodiversity Management”

The activities to be undertaken in this sub component shall be carried out through BMC and its sub committees. A broad framework for this sub component is given below.

i. “Component 2.4.2.1: SATOYAMA based Biodiversity Conservation Activities”

Various activities will be identified in CBMPs and these will be implemented as community based biodiversity conservation activities. Some of these activities would overlap with those in the Component 1 and the Component 3, as such interventions are cross-cutting in nature. In this section, activities concerning biodiversity conservation will be focused and described.

Community based biodiversity conservation activities in this project adopt the SATOYAMA concept, which underpins “Promotion of sustainable use and management of natural resources” and “Designation of Biodiversity Heritage Sites (BHS)”.

Promotion of Sustainable Use and Management of Natural Resources

1) Background

Possible sustainable use of natural resources by BMC would include pasture/grassland management, lantana/pine needle bricket making, and promotion of sustainable harvesting and primary processing techniques of NTFP. Local communities have been utilising natural resources sustainably, and some local traditions and regulations partly contributed to it. In the recent population growth and increasing human pressure, however, just following local traditions and regulations would not secure sustainability in natural resource use.

The key elements of SATOYAMA concept in “Promotion of sustainable use and management of natural resources” are 1) resource use within the carrying capacity and resilience of the environment and 2) cyclic use of natural resources.

2) Objective/Goal

Enhanced capacity of local communities to sustainably use and manage natural resources, including possible exercise of Access and Benefit Sharing (ABS) and ecotourism operation.

3) Activities

BMC and its sub-committees (as well as common interest groups to be established under the sub-committees) are expected to be the conscious users of the natural resources and responsible for monitoring whether the non members of BMC are complying with the State Biodiversity Act. Thus, the capacity building activities would include training of BMC members and common interest groups on monitoring of natural resources, rule setting to avoid overuse, active consumption and usage of exotic/invasive species, sustainable harvesting and production of NTFPs, etc.

ABS is the right of local communities on their natural resources and traditional knowledge, and it has a potential for them to have their share as economic benefit if some industries/companies

utilise these resources for the products. BMC and PBR would constitute the basis for ABS, and linkages with industries/companies is vital to exercise the ABS right. Negotiations and consultations would be required in this exercise, and involvement of HPSBB would help concerned BMCs as an official backup. However, both HPSBB and BMCs are considered not very much familiarised to this kind of consultations, and training on exercise of ABS right to HPSBB and concerned BMCs would be required. Appropriate use of ABS would help local communities to become self-sustainable to some extent, and training and technical advices by experts such as lawyers and NGOs specialised in this field are required to make it possible.

Furthermore, HP being a tourist state, eco tourism may hold relevant in certain pockets of the project areas, which would contribute not only to the local livelihoods but to conservation and sustainable management of ecosystems.

Registration of Biodiversity Heritage Sites (BHSs)

1) Background

BHSs are rich biodiversity areas and are important components of local ecosystems being conserved and managed by the communities. Based on Biological Diversity Act 2002, BHS can be notified by the state government, however no BHS has been declared in HP yet. SBB has identified some 15 potential sites for future recognition as BHS, and designation of BHS is expected to encourage local communities' motivation for biodiversity conservation.

Designation of BHS entails elements of SATOYAMA concept such as “3) recognition of the value and importance of local traditions and culture”, “4) multi stakeholder participation and collaboration”, and “5) contribution to socio economics”.

2) Objective/Goal

Designation of BHSs, and enhanced capacity of BMCs to develop the management plan

3) Activities

Potential BHSs includes sacred groves, sacred wetlands and traditional crop areas, and baseline information collection should be done to list up such areas, and PBR is expected to provide useful information on these sites. HPSBB will examine details of such potential sites, including field surveys with expertise such as ecologists and botanists. HPSBB will then select some sites to suggest to the State Government for BHS designation and further notification if approved.

BHSs are expected to be managed by BMCs the following the management plan, and development of the management plan should be considered once the site is nominated as potential BHS. Support for BMCs will be needed to develop management plans in a form of training, development of manuals and guidelines, and technical advices from expertise, for example.

Eco-Tourism

The eco-tourism activities may be considered in some communities under the Project if there are needs, necessities, and potentials for the eco-tourism. The indicative activities of the eco-tourism for the Project are described in **Attachment II.3.7.2.3**.

ii. “Component 2.4.2.2: Eco Clubs”

1) Background

Educating youth would also be considered as an important aspects of community based biodiversity conservation. HPSBB has been working on awareness raising by maximising the opportunities such as International Biodiversity Day celebrated on 22nd May every year, and eco clubs at secondary schools are one of the collaborating partners for such activities. Reinforcing the activities of eco clubs is expected to support awareness raising among the youth.

Eco clubs have been organised by the initiative of State Council for Science, Technology and Environment in collaboration with MoEF & CC under the National Green Corps Initiative. Thus, the Project will be working mainly with these existing clubs. The project intervention shall also include the teacher training for the improved sustainability of eco clubs.

2) Objective/Goal

Strengthened, more active and increased numbers of eco clubs to reach expanded targets for awareness raising.

3) Activities

Eco clubs can be supported or organised at secondary schools where the students will be given opportunities to learn about biodiversity in HP and its conservation. This can be facilitated by the resource organisations engaged by the Project. With further technical support by the resource organisations and others, eco clubs shall investigate uniqueness and characteristics from biodiversity point of view in their area, which is expected for not only eco club members but also their friends and teachers to pay more attention to biodiversity in their surroundings. Organising a State-wide competition on eco club activities is worth consideration, through which eco club members are motivated and have opportunities to exchange activity experiences. The number of schools to be targeted shall be determined during the preparatory phase of the Project.

Some of the eco club members are expected to proceed to higher education such as colleges and universities after graduation. These members are precious resources to prevail concept of biodiversity conservation, and establishment of eco clubs at universities and colleges can be facilitated by supporting these members. Technical support by the resource organisation would help the establishment. On the other hand, eco club activities can be expanded to primary schools and nursery schools, to which eco club members at secondary schools and/or universities/colleges visit and provide lectures/exhibits/field visits to educate school children in a friendly manner with plain language, or even through plays. Technical support by the resource organisations would help these activities to a great extent and motivate eco club members.

Through these activities, eco club activities are expected to raise awareness of biodiversity conservation, particularly at youth and future generations.

3.7.2.5 “Component 2.5: Training of DMUs/ FTUs/BMCs and Sub-committee”

(1) “Component 2.5.1: Training of DMUs/ FTUs”

The training programmes for BMCs and sub-committees are to be delivered by DMU subject matter specialists and FTU coordinator who shall be trained under TOT. The TOT programme is outlined in **Section 3.7.1.5 (2)**.

(2) “Component “2.5.2 Training of BMCs and sub-committees”

Outline of the training programmes for BMC and sub-committees is given below.

i. Project Orientation and Forestry/ Biodiversity Nexus

The training programmes for the BMCs and sub-committees are outline below. The learning objectives include BMCs/ sub-committees to understand the project objectives and their roles in project planning, implementation and M&E; importance of forest ecosystem and biodiversity management and linkage between livelihoods and forest ecosystems and biodiversity management. The orientation and training shall be given by the DMU subject matter specialist and FTU coordinator and organised for each BMC. Subject specific materials can be prepared by PMU to be used during the programmes especially for the biodiversity especially on SATOYAMA, ABS, forest ecosystems management and man wildlife conflicts.

Table 3.7.2.7 Indicative Topics for Project Orientation and Forest/ Biodiversity Nexus

| | Topics | Outline | Duration | Suggested Participants |
|---|------------------------------|---|----------|---|
| 1 | Project orientation | Project objectives and approaches Forest ecosystem management/ biodiversity and livelihood improvement Roles and responsibilities of the stakeholders and VFDS/ sub-committees Biodiversity Act HP PFM Regulations 2002 | 1 day | BMC and sub committee executive members, ward panch, Gram Pradhan, GP |
| 2 | Biodiversity | Understanding biodiversity management ABS PBR and its value Changing relationship of human and wildlife Coping mechanism Importance of habitat management and the role of community SATOYAMA | 1 day | Mobilisers/ Ward Facilitators and other community leaders |
| 3 | Forest Ecosystems management | Understanding forest ecosystem management Forest regeneration Forest and water Soil moisture conservation measures Forest Protection from pest, diseases and fire NTPF/ MAP, Fodder, Fuel wood plantations Grazing/ Pasture management Agro-forestry Farm -Forestry | 1 day | |

Source: JICA Study Team (2017)

ii. Planning, Implementation and Group Management

The outline of the training programme is given in **Table 3.7.1.8**. This is a common Module with VFDS.

(3) “Component 2.5.3: Exposure Visits by the Community Institutions”

Exposure visits for BMC shall be jointly organised with VFDS exposure visits. The indicative outline is given in **Table 3.7.1.9**.

(4) “Component 2.5.4: Joint Workshops for Community Level Institutions (VFDSs/ BMCs and sub-committees)”

The joint workshops of VFDSs/ BMCs and sub-committees shall be organised once a year for sharing of experiences, issues, and achievement from the project both at division level. Indicative outline is given in **Table 3.7.1.10**.

3.7.3 “Component 3: Livelihood Improvement Support”

The objectives of “Component 3: Livelihood Improvement Support” is to reduce the pressure on the forest resources through 1) effective and sustainable NTFP harvesting and marketing interventions; 2) promoting alternative sources of energy and means of livelihoods to enhance the household level resilience against the resource scarcity and 3) augmenting the resource base and building capacity of the community towards sustainable forest resource management. Three sub components are proposed under Component 3 including 1) community development, 2) NTFP based livelihoods and 3) Non – NTFP based livelihoods. Each of the sub components is comprised of preparatory phase and implementation.

During implementation of the component, FTU of the project implementation unit would play an important role in community mobilisation, community based planning, facilitating convergence and capacity building. Day to day handholding would also be provided by the FTU coordinator along with the ward facilitators and GP mobilisers who would act as interface between the community and project. DMU subject matter specialist on livelihood would guide FTU coordinator to effectively extend handholding services to the community. At the community level, Common Interest Groups (CIGs) would be organised which may also function as a mutual help group through internal savings and lending to mitigate the financial vulnerability which may arise at household levels. In case SHGs are preferred by the community or already existing in the community, SHGs shall also be assisted keeping in view of linkage with SRLM in due course.

3.7.3.1 “Component 3.1: Community Development”

(1) “Component 3.1.1: Preparation of CD&LIP – CD Plan”

The preparatory works of the component involves preparation of CD&LIP and shall be facilitated by the FTU coordinator, ward facilitators and GP mobiliser. CD&LIP is to be prepared by a VFDS/ BMC sub-committee and, in the process, community development and livelihood related

issues are to be identified and activities to address such issues shall be planned. The planning process shall be undertaken along with the preparation of FEMP/ CBMP and comprised of 10 years vision statement and 5 years action plan. As discussed in **Section 3.7.1.1 (8)**, CD&LIP shall also be discussed at and approved by the General House of VFDS or ward sabha and gram shaba in the case of BMC before forwarding it to FTU. FTU shall compile the range plan and forward it to DMU for further sanction and transfer of the funds. The annual plan shall be prepared on the basis of the 5 year plan. Similar to FEMP/ CBMP, the formats to be used for planning of CD&LIP shall be developed by PMU prior to the field level execution. The gender budget is to be prepared and 40% of the total amount of the CD&LIP shall be spent for the activities that would address women's needs or used by women and women's group.

The activities to be funded by the project under the Community Development shall be identified by adopting the following criteria.

- ◆ Addresses common issues in the community
- ◆ Reduces the pressure on the forest resources (especially fuelwood/ fodder)
- ◆ Improves wellbeing of the community members especially women

As the plan shall be prepared for each ward, it shall reviewed and obtain the approval of the General House of VFDS or ward/ gram sabha in the case of BMC before forwarding it to FTU.

(2) "Component 3.1.2: Transfer of Funds - CD&LIP Fund"

In the CD&LIP Plan, the activities that could benefit the VFDS/ BMC members as a whole (i.e. creation, maintenance, renovation of the community assets, livelihood activities, facilitation funds needed to access social services and etc.) shall be included. According to the CD&LIP, the project shall release the funds for implementation of CD&LIP. The amount of 475,000 INR for each VFDS and BMC sub-committee shall be allocated as Community Development Fund, which is a one-time grant during the project duration and shall be used for Community Development Activities. VFDS/ BMC may also decide to use a part of the fund as a revolving fund which shall be made available for the members of VFDS/ BMC. As for livelihood improvement activities, 140,000 INR shall be budgeted for each CIG/ SHG as Livelihood Improvement Fund which shall be used as a revolving fund. The operational modality is outlined under **Component 3.3.4**. Both the funds shall be kept in VFDS/ BMC CD&LIP account and managed by VFDS/ BMC as per the operation manual prepared by PMU. The interest rate for the revolving fund shall be decided by PMU depending on the rates levied by other similar financial schemes. The application (CIGs/ SHGs/ Individuals) for the CD&LIP Revolving Fund shall be submitted to VFDS/ BMC. Upon approval of executive committee of VFDS/ BMC, the fund shall be transferred to the bank account of the applicant. The operation manual of the CD&LIP Fund shall be developed by PMU/ PMC during the preparatory phase of the project along with the loan application formant.

(3) “Component 3.1.3: Implementation of CD activities”

The implementation of CD activities shall be facilitated and assisted by DMU subject matter specialists and FTU coordinator. The execution of the activities is to be done by the VFDS/ BMC. A working group for CD activities may be organised in each VFDS/ BMC if deemed necessary. The potential activities proposed under community development are given in **Table 3.7.3.1**.

Table 3.7.3.1 Potential Activities under Community Development

| Type | Activities | Unit of Implementation |
|--------------------|---|----------------------------|
| Alternative Energy | Pine needle/ biomass briquettes production Production and distribution of energy efficient chullahs Solar room/ water heating system and water pump | VFDS/ BMC Sub-committee |
| Fodder/ Feed | Fodder tree/ grass cultivation ⁹ Silage making Fodder bank Production of compound feed | |

Source: JICA Study Team (2017)

Other drudgery reduction measures can also be considered through convergence especially on the agriculture. CSK Himachal Pradesh Agriculture University also works on various drudgery reduction techniques/ tools for household chore, farm related activities, fodder collection etc. In case, individual households are interested in adopting some of the promoted interventions, VFDS general house members and BMC sub-committee members can access CD&LIP revolving fund to adopt project promoted technologies or devices.

Once the works are completed, FTU coordinator along with VFDS/ BMC shall carry out the site verification and keep an inventory of the assets and other interventions.

(4) “Component 3.1.4 Preparation of Guidelines/ Manuals, Training Programmes for Community Development”

i. “Component 3.1.4.1: Preparation of Guidelines/ Manuals for Community Development and Livelihood Improvement”

PMU shall prepare a manual for community development to be used by DMUs, FTUs, VFDSs/ BMCs and BMC sub committees. The manual shall contain 1) objectives of CD&LIP, 2) planning process/ methods of CD&LIP and data collection methods, 3) convergence, 4) funding arrangement and etc. PMU shall finalise the planning process and funding mechanism prior to developing the guidelines and manuals. Clarity is required while defining the fund transfer mechanism from the project to the community institutions and modus operandi of the CD&LIP fund. PMC specialists may provide inputs to PMU in designing the documents. The preparation of guidelines/ manuals is to be undertaken under “Component 1.5.0: Preparation of Guidelines and Manuals” under “Component 1: Sustainable Forest Management” as in **section 3.7.1.5 (1)** and used during the training programmes planned under Component 1: Sustainable Forest Ecosystem Management and Component 2: Sustainable Biodiversity Conservation.

⁹ Agriculture Department has schemes for fodder production. This may be considered for convergence.

Table 3.7.3.2 Indicative Outline of the Guidelines and Manuals and Training Programmes for Community Development

| Trainee Category | Contents of Guideline/ Manual | Type of Guidelines/ Manual | Remarks |
|--|--|--|--|
| DMU/ FTU officers | Objectives of the Community Development in HPFEM&LIP Role of DMU/FTU Convergence Planning Process and Tools Selection criteria of activities Formats to be used for CD&LIP Fund flow and management Transparency Board Social Audit Statutory Audit Gender budgeting | Guideline for Community Development | <ul style="list-style-type: none"> • A broad outline of the planning process and key aspects of CD&LIP shall be described in the guideline. • Role of DMU/ FTU in convergence shall be highlighted. |
| DMU subject matter specialist/ FTU coordinator | Objectives of the Community Development in HPFEM&LIP Role of FTU and FTU staff in Planning of CD&LIP Facilitation skills Selection criteria of activities Planning Process and Tools Selection criteria of activities Implementation of Activities Formats to be used for CD&LIP Fund Flow and management Record Keeping Transparency Board Social Audit Statutory Audit Gender budgeting | Trainer's Manual for Community Development | <ul style="list-style-type: none"> • To be designed as a trainer's manual as DMU subject matter specialists/ FTU coordinators are visualised to train the VFDS/ BMC and sub-committee members in preparation of HPFEM &LIP. • Facilitation skills need to be included in the manual along with other details. Especially gender sensitive approach to facilitating discussions to be highlighted. • Planning process, fund management, transparency board, social audit and gender budgeting are to be elaborated. • The contents shall contain details of each topic so that the DMU subject matter specialists /FTU coordinators can deliver the training programmes in the field. |
| VFDS/ BMC | Objectives of the Community Development in HPFEM&LIP Role of DMU, FTU and VFDS/ BMC in Planning of CD&LIP Selection criteria of activities Planning Process and Tools Implementation Process of activities Selection criteria of activities Formats to be used for CD&LIP Fund Flow and management Record Keeping Transparency Board Social Audit Statutory Audit Gender budgeting | Field Manual for Community Development | <ul style="list-style-type: none"> • The emphasis is to be given to the objectives of community development interventions and selection criteria of activities. • The manual shall be written in simple languages but with sufficient details to help the community level institutions to plan and implement activities. • The transparency is also another key area to be given importance. How to carry out social audit and prepare transparency board shall be elaborated. • Importance of adopting gender budgeting should also be explained. • The language of the choice of the community members shall be adopted in preparation of the manual. |

Source: JICA Study Team (2017)

(5) “Component 3.1.5: Research (Pilot Project on Hydro Cultural Fodder Production)”

As a way to mitigate the pressure of the grazing land and grassland, the project may invest in identifying suitable technologies for fodder production. Hydro culture of fodder may be tried out under the research component on a pilot basis. If the unit can work in the project areas, it may ease the work pressure on women who primarily collect fodder. Although many villagers do purchase dry fodder and/ or feed, this could also provide them an alternative. This may also provide a business opportunity for project assisted SHGs or CIGs to produce and sell green fodder to the local residents.

As a pilot project, the hydro fodder production unit may be installed in a few locations. The usability and cost effectiveness shall be assessed in comparison to the labour and consumption of green fodder prior to the introduction of the fodder production unit. Any modification in the production unit could also be done during the pilot stage. The pilot sites can be established at a different geo-climatic zone and having a need to resolve green fodder shortage. The guidance can be outsourced to institutions like ICAR, Universities and other institutions with proven records of research activities in the relevant area. The preliminary TOR of the outsourced agency is given in the **Attachment II.3.7.3.1**. The procurement of the outsourced agency and necessary equipment shall be done through national competitive bid. If hydro culture fodder production is proved to be viable, it can be promoted under the Project on cost sharing basis to CIG/ SHGs. In this case, the technical guidance for the CIG/ SHGs can be done through the groups/ individuals who took part in the pilot project and financial resources can be solicited from financial institutions or loan from the Community Development Fund or Livelihood Improvement Fund (revolving fund) which is managed by the VFDS/ BMC. Also, extension activities to promote the hydro culture fodder production within the project areas may be initiated if the result of the pilot project proved to be effective.



Source: Naik, P.K. et. Al. “Low Cost Devices for Hydroponics Fodder Production”. *Indian Dairy Man* (Oct, 2013). (https://www.researchgate.net/profile/Mathala_Gupta/publication/258241382_Low_cost_devices_for_Hydroponics_fodder_production/links/0deec5278d63312baf000000/Low-cost-devices-for-Hydroponics-fodder-production.pdf accessed on 30 Sep 2017)

Figure 3.7.3.1 Hydroponic Fodder Production Unit in ICAR Complex for Goa, Old Goa

3.7.3.2 “Component 3.2: NTFP based Livelihood Improvement”

(1) Introduction

The activities proposed under NTFP based livelihood improvement will be mostly concentrated in 11 clusters out of 16 clusters identified in 6 prioritised project districts. In addition to this SHGs/CIGs may also decide to take up small income generation activities using NTFPs. The key objectives of NTFP based livelihood improvement are given below:

1) To enhance the livelihood opportunities as well as the income of the project participants from NTFP including medicinal plants through

- a) Production enhancement in the forest areas, PFM areas, village commons and private land,
- b) Organisation/institutionalisation of right holders and growers for *in-situ* & *ex-situ* conservation, regulation of sustainable extraction, aggregation, certification and sale of NTFPs,
- c) Upgradation of existing value chain and supply chain in collaboration with different government and private agencies and improvements in business development services (BDS), enterprise development and market access,
- d) Creation of enabling policy environment by simplifying procedures and regulations for cultivation, value addition, certification etc., and
- e) Introduction of alternative mechanism to incentivise sustainable forest and pasture management including non-destructive harvesting of different forest products.

2) To facilitate *in-situ* and *ex-situ* conservation of medicinal plants involving different stakeholders.

(2) Clusters to be Promoted for NTFP based Livelihood

NTFP based livelihood interventions will be implemented in 11 clusters and in each cluster all activities will be undertaken for resource development, conservation, sustainable harvesting, post-harvest management with good manufacturing practices (GMP), collective marketing etc. The details of the clusters have been in **Table 3.7.3.3**.

Table 3.7.3.3 Suggested Clusters for NTFP Enterprise Development

| District | Forest Division | Clusters | Species to be Promoted for Cultivation (Non-forestland) | Species to be Promoted for Plantation in the forestland (JFM and Departmental Modes) | Other Interventions |
|----------------|-----------------|--------------|---|---|--|
| Lahaul & Spiti | Lahaul | 1. Keylong | Kuth, Atis/Patis, Puskarmool, Bankakdi, Kadu | Seabuckthorn, Kuth, Atis/Patis, Puskarmool, Bankakdi, Artemisia, Kadu etc. | 1. Formation and strengthening of Cluster Level Jadi-Buti Society/ producer group in each cluster. |
| Kinnaur | Kinnaur | 2. Nichar | Bankakri, Kadu, Muskala, Chora, Atis/Patis, Ratanjot etc. | Kuth, Bankakri, Kadu, Ratanjot, Seabuckthorn, Muskala, Atis/Patis, Pasanhed, Rakhal, Neoza, Wild Apricot etc. | 2. NTFP assessment and preparation of conservation and resource development plan. 3. Widespread campaign in the cluster for conservation, sustainable harvesting, cultivation of medicinal plants, post-harvest management etc. |
| Shimla | Kotgarh | 3. Kumarsain | Atis/ Patis, Muskala, Chora, Jatamansi | Chora, Kadu, Kuth, Muskala, Nagchhatri, Pasanhed, Tilpuspi, Kakrisingi, Wild Anar etc. | |

| District | Forest Division | Clusters | Species to be Promoted for Cultivation (Non-forestland) | Species to be Promoted for Plantation in the forestland (JFM and Departmental Modes) | Other Interventions |
|----------|-----------------|-----------------|--|---|---|
| | Rohru | 4. Rohru | Atis/ Patis, Chora, Muskbala, Van Haldi, Chora | Atis, Bankakri, Kadu, Kuth, Muskbala, Van Haldi, Van Ajwain, , Banafsa, Jangli Lahsun, Salam Misri, Wild Anar etc. | <p>4. Promotion of cultivation of NTFPs including medicinal plants - community land, private land, orchards etc. Necessary technical support and extension services to be provided by the Project/ Society. Revolving fund will be provided to the society/ producer group to help farmers cultivate NTFPs including medicinal plants.</p> <p>5. Promotion of cultivation of NTFPs in JFM areas.</p> <p>6. Capacity building of right holders for cultivation as well as sustainable harvesting of NTFPs including medicinal plants from the wild.</p> <p>7. Setting up of storage cum processing centre for collection, processing and storage of medicinal plants harvested from the wild as well as farms.</p> <p>8. Linkage with Research Institutes and other organisations for supply of quality planting materials.</p> <p>9. Linkage with Pharmaceuticals and other processing units for supply of raw materials/ medicinal plants.</p> <p>10. In case of Bilaspur efforts will be made to organise the producers (owners of pine tree) for collective harvesting of resin and supply to the resin processing industries in Hoshiarpur area, Rosin & Turpentine Factory, Bilaspur and others.</p> |
| Kullu | Kullu | 5. Solang-Kothi | Atis/ Patis, Bankakri, Kadu, Kuth, Jatamansi, Revandchini etc. | Atis/ Patis, Bankakri, Kadu, Kuth, Chora, Rakhali, Muskbala, Ban Lahsun, Tilpuspi, Banafsa, Kakrasingi, Wild Anar etc. | |
| | Parvati | 6. Kasol | Atis/ Patis, Bankakri, Kadu, Kuth, Jatamansi, Revandchini etc. | Atis/ Patis, Bankakri, Kadu, Kuth, Chora, Rakhali, Muskbala, Ban Lahsun, Bach, Tilpuspi, Banafsa, Kakrasingi, Wild Anar etc. | |
| | Banjar | 7. Tirthan | Atis/ Patis, Bankakri, Kadu, Kuth | Atis/ Patis, Bankakri, Kadu, Kuth, Chora, Rakhali, Muskbala, Ratanjot, Nagchhatri, Ban Lahsun, Bach, Tilpuspi, Banafsa, Kakrasingi etc. | |
| | Ani | 8. Arsoo | Kadu, Chora, Nagchhatri, Ban Haldi, Revandchini | Kadu, Kuth, Chora, Nagchhatri, Ban Haldi, Atis | |
| | Ani | 9. Nither | Kadu, Chora, Nagchhatri, Ban Haldi | Kadu, Kuth, Chora, Nagchhatri, Ban Haldi, Atis | |
| Mandi | Nachan | 10. Chachiyot | Atis/ Patis, Bankakri, Chora, Muskbala, Chirayata etc. | Atis/ Patis, Bankakri, Chora, Rakhali, , Muskbala, Berberis, Chirayata, Walnut, Apricot, Tejpatta, Khanor, Kaphal etc. | |
| Bilaspur | Bilaspur | 11. Namhol | Mulethi, Brahmi, Mandukparni, Khair etc. | Mulethi, Brahmi, Mandukparni, Khair, Myrabolans etc. | |

Source: JICA Study Team, 2017

(3) “Component 3.2.1: Preparatory Works”

i. Establishment of a Jadi-Buti Cell in PMU

A Jadi-Buti Cell will be set up in PMU during first year of the Project to coordinate activities on NTFPs including medicinal plants. The key functions of the Jadi-Buti Cell are given below (refer **Figure 3.7.3.2**):

- ◆ Create a brand for the medicinal plants produces in Himachal Pradesh and take up necessary actions for brand promotion at state, national and international level.
- ◆ Work on value chain development of key high altitude medicinal plants.
- ◆ Undertake advocacy for changes in the policies, legal and operative framework for value chain development of medicinal plants.
- ◆ Play a facilitating role in procurement and trade of medicinal plants in the state and ensure consistent supply to the pharmaceuticals and other industries.
- ◆ Carry out market research on a regular basis and establish market information system.
- ◆ Work with other stakeholders to promote conservation, resource development and sustainable management of medicinal plants with a focus on high altitude medicinal plants.
- ◆ Carry out widespread campaign for plantation/ cultivation of high altitude medicinal plants in order to make Himachal Pradesh an assured source of supply of important medicinal plants/ products to the pharmaceutical industries in the country.
- ◆ Collaborate with research institutes for developing agro-techniques for selected high altitude medicinal plants and sustainable harvesting protocols for selected medicinal plants, and popularisation of agro-techniques and sustainable harvesting protocols.
- ◆ Facilitate institutional development of producer organisation through training, capacity building and access to business development services.

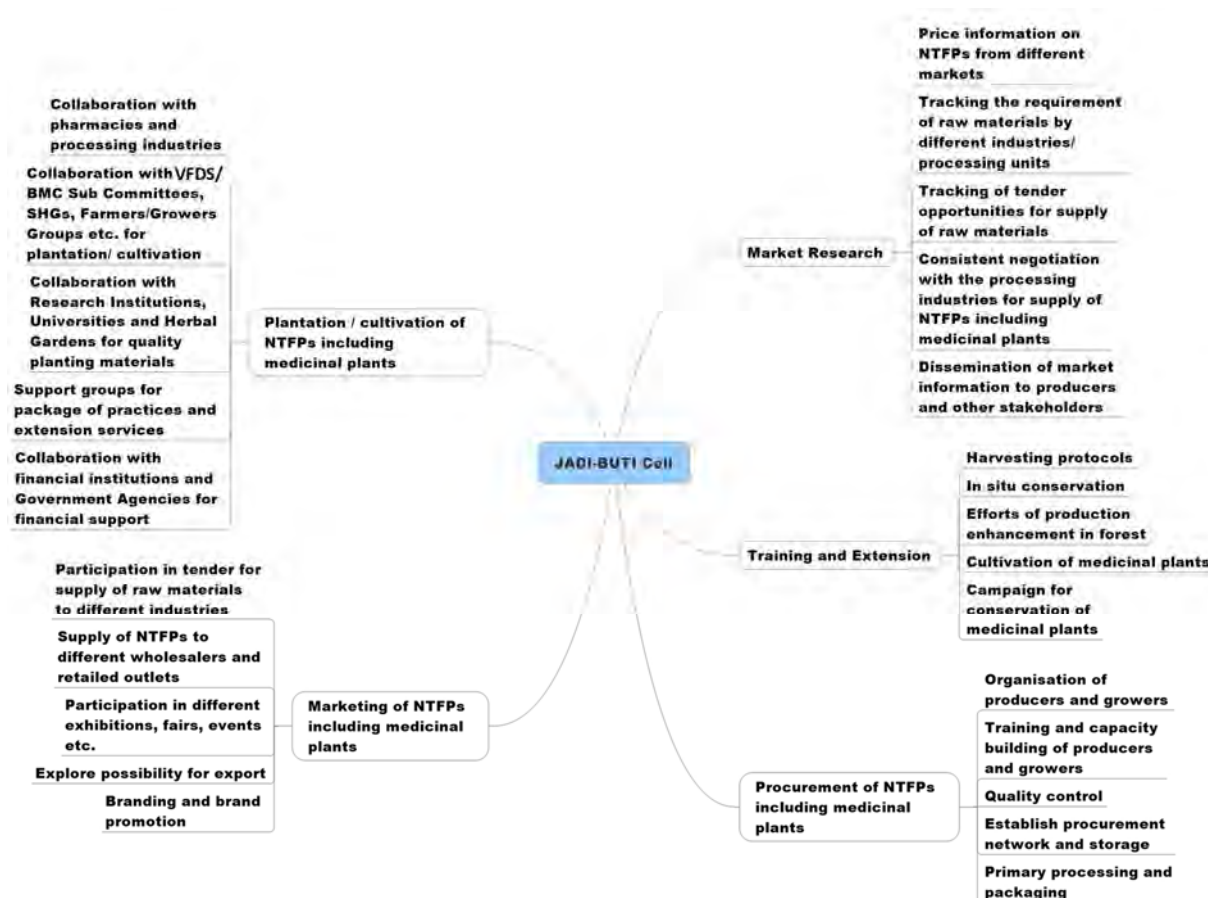
PMU will engage professionals from the market on contractual basis to implement NTFP related activities. The professional will include a Director, one Manager - Marketing, one Manager – Enterprise Development, and two Executives including one MIS Associate. The PMU will hire services of different experts as and when necessary to execute the activities.

Table 3.7.3.4 Human Resources to be deployed with Jadi-Buti Cell

| Position | Nos. | Basic qualification | Duties and responsibilities |
|----------|------|---|---|
| Director | 1 | Management Professional with 10 years of experience in Value Chain Development of NTFP/ medicinal plants especially in Himalayan Region and substantial experience in leading a team and managing an institution. | <ol style="list-style-type: none"> 1. Overall management of the Jadi-Buti Cell to achieve the stated goals and objectives, and to develop and establish business models for NTFP management and value chain development. 2. Prepare strategic plans, annual action plans, and budgets and present them to the PMU for approval. 3. Efficient and effective management of human resources and funds for implementation of the NTFP related activities. 4. Build linkages with different stakeholders for fund raising, collaborations, implementation of planned activities, image building etc. 5. Overall responsibility for carry out research and development activities on NTFPs including medicinal plants in collaboration with research |

| Position | Nos. | Basic qualification | Duties and responsibilities |
|-----------------------------------|------|---|--|
| | | | <p>institutes and universities.</p> <p>6. Timely guidance and assistance to Cluster Level Societies/ producer groups for NTFP Enterprise Development.</p> <p>7. Work with the Team and Cluster Societies/ producer groups to establish a brand for the NTFPs including medicinal plants from Himachal Pradesh.</p> |
| Manager – Marketing | 1 | Management Professional with 5 years of experience in marketing of NTFP/ medicinal plants especially in Himalayan region and a good understanding of regional and national NTFP market. | <p>1. Overall responsibility for market research, market promotion and marketing of NTFPs including medicinal plants.</p> <p>2. Prepare procurement and marketing plan and accordingly work with other Team Members and Custer Societies/ Producer groups for procurement and marketing of NTFPs including medicinal plants.</p> <p>3. Develop database on market and disseminate market information to different stakeholders including the producers.</p> <p>4. Negotiate with industries, exporters, traders for marketing of NTFPs including medicinal plants and facilitate signing of MoUs with different buyers and industries.</p> <p>5. Take up necessary action for participation in bid processes for supply of raw materials to different pharmaceuticals and other industries.</p> <p>6. Work with the Director for brand development, registration and promotion.</p> <p>7. Organise events – herbal fairs, exhibitions, buyers-sellers meets etc. and help producers to participate in different events in the state and outside.</p> |
| Manager – Enterprise Development | 1 | Management Professional with 5 years of experience in setting up of NTFP enterprises at community level and good understanding of in-situ and ex-situ conservation of NTFP/ medicinal plants. | <p>1. Overall responsibility of establishment of Cluster Level Societies/ producer groups and their efficient and effective functioning for NTFP enterprise development.</p> <p>2. Help cluster Societies/ producer groups to prepare their plan for cultivation, collection from the wild, value addition and marketing and for implementation of the plan.</p> <p>3. Organise necessary capacity building programmes for the cluster Societies/ producer groups, CRPs and link them to different resource organisation for accessing inputs and extension services.</p> <p>4. Work with the leaders and staff of the cluster Societies/ producer groups for cultivation of NTFPs and necessary support to the producers/ growers.</p> <p>5. Help societies/ producer groups to efficiently use the revolving fund for cultivation as well as for procurement of NTFPs.</p> <p>6. Explore possibilities for convergence with other programmes, projects etc.</p> |
| Accounts-Administration Executive | 1 | Professionals with 3 years of experience in accounting, book keeping and office management in a semi-government or private organisation. | <p>1. Work under the guidance of Director for finance management and office management.</p> <p>2. Maintain books of accounts and help the Manager in preparation of reports.</p> |
| MIS Associate | 1 | IT professionals with 3 years of experience in MIS, documentation, data processing and report production. | <p>1. Work under the guidance of Director for MIS.</p> <p>2. Create and maintain database on market, cultivation and other project interventions.</p> <p>3. Assist the Manager in website creation and maintenance.</p> <p>4. Assist in data processing and preparation of report.</p> |
| Driver | 1 | | |

Source: JICA Study Team (2017)



Source: JICA Study Team (2017)

Figure 3.7.3.2 Activities of Jadi-Buti Cell in PMU

The Jadi-Buti Cell will be responsible for formation and strengthening of Cluster Level Him Jadi-Buti Cooperative Societies/ Producer groups and it will help the cluster level societies/ producer groups in cultivation, sustainable harvesting from the wild as well as from farm, and post-harvest management of NTFPs and medicinal plants. The Jadi-Buti Cell will prepare its annual plan and submit it to the PMU for approval. The PMU will closely monitor the activities of the cell and provide necessary feedback. The Cell will submit progress report to PMU on monthly basis.

The capacity of the Jadi-Buti Cell shall be built to see if it can be converted to a society and to be independent from the Project / HPFD towards the end of the project. The relevance of the cell shall be revisited during the mid-term review and appropriate modality shall be discussed.

ii. Finalisation of NTFP Clusters

11 clusters have been proposed for NTFP Enterprise Development and each cluster will be further reviewed during the preparatory phase to find out the exact geography and villages to be covered in the cluster. The size of the cluster will be determined based on a) availability of NTFP including medicinal plants in the wild, b) availability of forest area for NTFP plantation, c) availability of non-forest area for NTFP plantation/ cultivation, and d) willingness of the local

communities and VFDS to work on NTFP resource development, cultivation, value addition and marketing. Availability of forestland and non-forest land will be a key determining factor for formation of a cluster. Efforts will be made to include more geographical area in one cluster in order to secure around 20 ha of forestland for plantation and enrichment, and around 10 ha non-forest area for NTFP cultivation. One NTFP cluster may include 10-20 VFDSs. The non-forest area may include private land, community wasteland, orchards. Preference will be given to areas having more opportunities for NTFP plantations in forestland.

iii. NTFP Assessment

The after finalisation of the clusters, the Project will assess the availability of different NTFPs in these clusters with the help of Research Institutions such as HFRI, IHBT, YS Parmar University of Horticulture and Forestry, and other Universities. The PMU will request for proposals from these institutions and a committee will be constituted at the PMU level with representatives from Forest Department (Research Wing etc.) and Experts from other Institutions/ Individuals to review the proposals and commission the task to the eligible institutions. A TOR for carrying out the assessment has been provided in **Attachment II.3.7.3.2**. Based on the assessment, a plan will be developed for each cluster for Conservation, Resource Development and Sustainable Management of NTFPs. This will include strategies, methods and interventions for *in situ* conservation, plantation/ enrichment in the forest areas and JFM area, cultivation of medicinal plants on the non-forest land, sustainable harvesting of different NTFPs and strategies for post-harvest management. For each cluster, about 5 NTFPs/ medicinal plants will be prioritised for resource development, value addition and marketing. This plan will guide VFDSs in preparation of micro level plans especially for NTFP interventions.

(4) “Component 3.2.2 NTFP Cluster and Enterprise Development”

The following key activities are considered for this component under the Project.

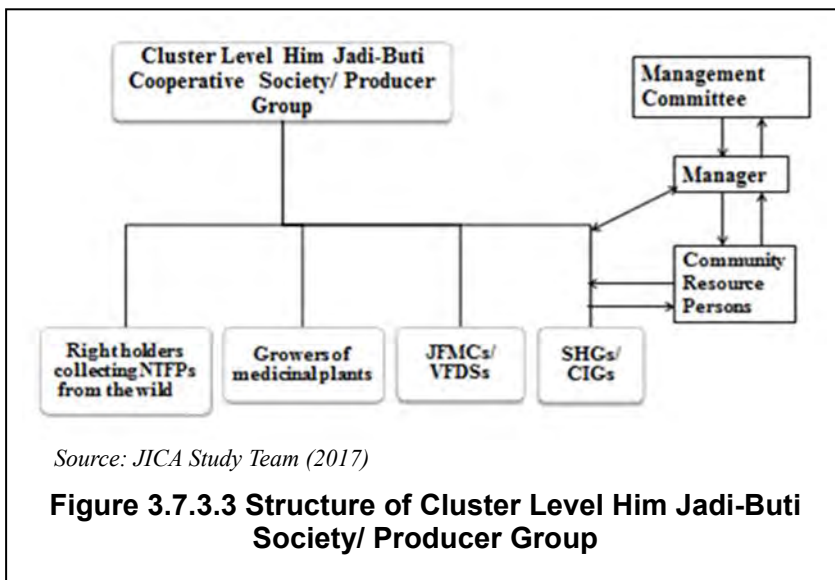
- i. Establishment of Cluster Level Him Jadi-Buti Cooperative Society/ Producer Group
- ii. NTFP Enterprise Development

Indicative descriptions are provided hereunder.

i. Establishment of Cluster Level Him Jadi-Buti Cooperative Society/ Producer Group
NTFP enterprise development will be executed in 11 clusters, and in each cluster, there will be a Cluster Level Him Jadi-Buti Cooperative Society or Producer Group depending on the decisions of the local communities. If communities are willing, then the society will be registered under Cooperative Society Act, otherwise it will operate as a producer group. The rights holders, growers of medicinal plants, SHGs, Common Interest Groups (CIGs), VFDSs will be the members of the society/ producer group.

A widespread campaign will be launched in the project cluster to sensitise communities and other stakeholders on the issues and challenges in conservation, resource development, and sustainable management of NTFPs and also on the importance of medicinal plants harvested from the region. Multiple activities will be undertaken in the cluster to mobilise the communities for sustainable management of NTFPs and medicinal plants. Thereafter, the formation of cooperative society/producer group will be initiated. Several rounds of meetings/ consultations will be organised in the target villages and also at the cluster level to develop the institutional architecture and necessary documentations for formation and registration of the cooperative society or producer group. Necessary support will be provided by the Project for campaign, community mobilisation and registration of the societies. Efforts will also be made to identify growers of medicinal plants and help them to form SHGs or CIGs, and these SHGs/ CIGs will become the members of the Cooperative Society/ producer group.

The Cluster Society/ producer group, on the basis of the Conservation, Resource Development and Sustainable NTFP Management Plan (to be prepared as part of NTFP Assessment), will prepare its detailed activity plan – areas to be brought under cultivation of medicinal plants, NTFPs to be collected from the wild, training of right holders and growers, value addition, marketing etc. The Jadi-Buti Cell will guide the cluster Society/ producer group in preparation of the plan.



The project will provide financial support to the Cluster Society/ producer group based on its annual activity plan and budget. The Jadi-Buti Cell will review the activity plan and budget and recommend it to the PMU for release of funds to the Cluster Society/ producer group. Monitoring of work of Cluster Society/ producer group will be done by both the Jadi-Buti Cell on behalf of PMU.

The Jadi-Buti Cell/ PMU will take adequate measures for training and capacity building of newly formed institutions on resource assessment, conservation, sustainable harvesting, post-harvest management, monitoring, cultivation of medicinal plants, primary processing, marketing etc. The Project will develop a rating system to assess progress of institutional development and accordingly linkages of these Cluster Societies/ producer groups will be built with different opportunities in the market. The Jadi-Buti Cell will make efforts to develop the Cluster Societies/

producer groups and some of the growers' organisations – SHGs/ CIGs as model centres for learning and sharing.

The Jadi-Buti Cell in consultation with the PMU, PMC and DMUs will devise a mechanism to assess the performance of Cluster Societies/ producer groups and provide them prizes/cash incentives. The assessment will start from the third year of establishment of Cluster Societies/ producer groups. The assessment will be based on a) area under cultivation, b) volume of NTFPs including medicinal plants procured from the wild and other sources, c) management of the Cluster Society/ producer group including record keeping, d) implementation of activities as per the activity plan etc. There may be three prizes i.e. First with a cash incentive of INR 200,000; Second – INR 100,000 and Third with a cash incentive of INR 50,000. Similar mechanisms will be developed for performance assessment of SHGs and CIGs and every year (from the fifth year of the Project) 12 SHGs/CIGs (2 from each district) will be identified and a cash incentive of INR 25,000 will be provided to each SHG/CIG.

In addition, wherever the producer groups and VFDSs are adopting sustainable harvesting of NTFPs from the forest and the community is actively involved in conservation of forest, efforts will be made by the Project for linking these groups to different development programmes. The Jadi-Buti Cell along with the Cluster Societies/ producer groups will explore possibilities of sourcing some funds from different schemes of the Government to support the communities for enhancement of quantity and quality of available of fodder and for production of compound feed using the local agriculture and forest products. Similar efforts will be made for introduction of bio-based, solar operated equipment for cooking, water and space heating, and introduction of suitable livelihoods activities for lean/winter season.

It is expected that the Cluster Societies/ Producer Groups would function independently after 5 years of inputs from the Project. These Societies/ Producer Groups will continue to interact among themselves to evolve mechanisms for federation building at the district as well as state level. They may have interactions with other Societies and Producer Groups functioning in different parts of the state to explore possibilities of formation of a society/ federation/ association at the state level to promote NTFP based livelihood.

ii. NTFP Enterprise Development

NTFP Enterprise Development will be carried out in 16 nos. of clusters through the Cluster Societies/ producer groups. The details of establishment of Cluster societies have been provided in the previous **Section (3.7.3.2. (4))**. NTFP assessment and conservation & resource development plan will form the basis for NTFP enterprise development. The key activities for NTFP Enterprise development are presented below:

- 1) Awareness building among the communities for conservation and resource development of NTFP – The Jadi-Buti Cell will help DMU and the Cluster Societies/ producer groups to design and execute communication and mass awareness campaigns involving different stakeholders for conservation, wild collection, cultivation, harvesting and post-harvesting, and overall sustainable management of NTFPs and medicinal plants. Campaign/ communication

materials such as visuals, audio-visuals etc. will be prepared and provided to the Cluster Societies/ Producer groups. Inputs for the campaign materials will be taken from Indigenous Technical Knowledge (ITK) as well as contemporary research on the subject. There will be repeated meetings, sensitisation camps, workshops and cultural activities in the target villages of the cluster to create awareness and further to bring more and more community members to participate in the conservation and resource development of NTFP. Cultural groups from the clusters will be identified and trained by professionals to perform cultural shows with specifically designed script on NTFP conservation and resource development. These groups will conduct shows in the project area for sensitising the right holders, farmers, orchardists etc. for *in-situ* and *ex-situ* conservation of NTFPs. Through this campaign efforts will be made to sensitise local communities, PRIs, educational institutions and students, and trading communities on the conservation, regeneration and sustainable management of NTFPs. Efforts will also be made for use of print and electronic media, and social media for building mass awareness.

- 2) Identification of suitable land for plantation/ cultivation of NTFPs including medicinal plants – the Cluster Society/ producer group with the help of DMU, VFDS, SHGs and CIGs will identify the land for cultivation of NTFPs including medicinal plants. Forest areas to be planted under NTFP will be determined through community level planning at the VFDS level. The local communities and Gram Panchayats will be sensitised to identify wasteland for cultivation of medicinal plants. The orchardists will be motivated for intercropping of selected medicinal plants in their orchards. About 10 ha area will be identified for cultivation of medicinal plants in a cluster. About 20 ha forestland will be identified for plantation and NTFP improvement. Details of plantation and cultivation have been given in **Section 3.7.3.2 (8)**.
- 3) Certification of production areas and produces – The Jadi-Buti Cell with the help of Cluster Societies/ producer groups will take necessary steps for organic certification of the area under cultivation of medicinal plants. Efforts will also be made for certification of NTFP/ medicinal plants collected from the forest/wild. The project will bear the cost of certification for 3 years and thereafter the Cluster Societies/ producer groups have to arrange the cost for certification. Certification will be undertaken under the National Programme for Organic Production (NPOP) of the Government of India.
- 4) Sustainable harvesting and post-harvest management – The Cluster Societies/ producer groups will be responsible for guiding the right holders and growers for sustainable harvesting of medicinal plants from the wild as well as from the farms. Protocols for sustainable harvesting of NTFPs including medicinal plants will be widely circulated among the target population and training programmes will be organised at the village level. Each VFDS will monitor the process during the harvesting season and take necessary correctional measures. Each Cluster Society/ producer group will be supported for setting up of a godown/storage space, processing shed/ dry yard, basic processing equipment such as pressure cleaning, drying, packaging, storage etc. The Cluster Society/ producer group will be responsible for

maintenance and management of the infrastructure. The Manager and CRPs will be responsible for procurement of NTFPs including medicinal plants from the cluster and for the post-harvest management. A procurement plan will be prepared in advance (well before the beginning of harvesting season) by the Manager and CRPs in consultation with the leaders and members of the Cluster Society/ producer group. A revolving fund will also be provided to the Cluster Society/ producer group for procurement and marketing of NTFPs including medicinal plants.

In case of Bilaspur, possibilities will be explored for organising the land owners of Chir Pine trees as producer groups and harvesting and sale will be collectively done through the Cluster Society/ producer group. There are 13 nos. of resin processing industries in Hoshiarpur area with an annual demand of 15,000 MT and there is Rosin & Turpentine Factory in Bilaspur managed by the HP Forest Development Corporation. The Cluster Society/ producer group may sale their produce to the above mentioned processing industries.

In Kinnaur, the Cluster Society/ producer group will explore for collective procurement and marketing of Neoza.

Procurement and marketing – The Cluster Societies/ producer groups will work closely with the Jadi-Buti Cell for procurement and marketing of NTFPs including medicinal plants. Each Cluster Society/ producer group will prepare a procurement plan for procurement and value addition of NTFPs including medicinal plants from their area of operation. The plan will be prepared based on a) Production estimate from the farmers, who are into cultivation of NTFPs including Medicinal Plants, b) Projection of volume to be collected from the wild, c) Review of productions (farms and wild) in previous years, d) Consultations with VFDSs, SHGs/CIGs, Farmers Groups, local traders etc. on the production estimation, collection and procurement mechanisms, value addition, storage etc. The plan will provide details of items and volume to be procured, place/ villages from which procurement will be done, local agency/ agents to be engaged for procurement, procedures for checking the authenticity and quality of product, mechanisms for storage and transportation of the produce, monitoring mechanism etc. Each Cluster Society/ producer group will be provided INR 1 million by the Project as revolving fund for procurement of NTFPs including medicinal plants. The Cluster Society/ producer group will undertake necessary primary value addition such as cleaning, drying, sorting and packaging of NTFPs including medicinal plants and store them properly. Marketing will be undertaken by the Jadi-Buti Cell. The Cluster Society/ producer group will also explore possibilities of direct marketing of NTFPs including medicinal plants collected by the members. Details of procurement and marketing have been mentioned in **Section 3.7.3.2 (9)**.

(5) “Component 3.2.3: NTFP Research and Development”

The following key activities are considered for this component under the Project.

- i. Development of agro-techniques of NTFPs including Medicinal Plants
- ii. Impact assessment of 4-year extraction cycle of NTFPs
- iii. NTFP assessment – Follow up assessment in target clusters

Indicative descriptions are provided hereunder.

i. Development of Agro-techniques of NTFPs including Medicinal Plants

The Jadi-Buti Cell in consultation with HFRI, IHBT, CSK HP Agriculture University, NMPB and other resource institutions will draw up a list of priority areas for research and development, and a list of NTFP including medicinal plants to be studied further for developing agro-techniques and sustainable harvesting protocols.

Based on the current assessment, agro-techniques in the context of Himachal Pradesh need to be developed for a) Nagehatri (*Trillium govianum*), b) Salampanja (*Dactylorhiza hatageria*), c) Salam Misri (*Polygonatum spp.*), d) Talispatra (*Abies spectabilis*), e) Tilpuspi (*Digitalis lanata*), f) Ratanjot (*Arnebia spp.*), g) Dhoop (*Jurinea macrocephala*) and h) Pasanbhed (*Bergenia ligulata*) etc. Some possibilities may be explored for cultivation of Guchhi (*Morchella esculenta*), Jangli Lahsun, Jangli Piaz (*Urgenia indica*). The Jadi-Buti Cell will engage the research institution of the state for development and deployment of protocols/ package of practices for cultivation of different NTFPs including medicinal plants and also for modification of existing agro-techniques as per the field findings. A TOR has been provided in the **Attachment II.3.7.3.3.**

ii. Impact Assessment of 4-year Extraction Cycle of NTFPs

Availability of NTFPs including medicinal plants has declined significantly despite the fact that the Forest Department adopts a 4-year extraction cycle and PMU may take up studies on the effectiveness and impact of 4-year extraction cycle in collaboration with research institutions in selected Forest Ranges (One Range from each Bio-geographic region – total 4 nos. of Ranges) and recommend appropriate extraction cycles for different NTFPs. A TOR has been provided in **Attachment II.3.7.3.4.**

iii. NTFP Assessment: Follow-up Assessment in Target Clusters

During the preparatory phase of the project NTFP assessment will be carried out in 16 clusters, which will set a baseline for project interventions on conservation and resource development of NTFPs including medicinal plants. Another assessment will be conducted in 50 per cent of these clusters (8 nos. of clusters) after 5 years of project interventions to assess the impact as per the TOR provided in **Attachment II.3.7.3.5.**

(6) Component 3.2.4: NTFP Plantation and Cultivation

i. NTFP Improvement in Forest Areas

NTFP improvements in forest areas will be covered under Project Component – Sustainable Forest Ecosystem Management. In each NTFP cluster, around 20 ha of forest area will be covered under NTFP improvement. More areas will be covered under NTFP improvement, if available. For the areas coming under 16 nos. of clusters, Conservation, Resource development and Sustainable NTFP Management Plan will guide the resource development/ plantation activities, which will be further elaborated in FEMP as micro plans to be prepared for each VFDS.

For areas outside the NTFP Clusters, efforts will be made to assess the production and potentiality of different NTFPs including medicinal plants in the target area (Forest areas to be allotted to the VFDS for protection, regeneration and management and forest areas used by the right holders for collection of NTFPs) during community level planning. Efforts will be made to involve researchers/ students from Universities/Research Institutes in resource assessment and community level planning. This will help in inventorisation of NTFPs (density, frequency and abundance of species in sample plots), preparation of stock map, identification of threats in conservation and regeneration, and developing possible interventions for conservation and sustainable harvesting of NTFPs including medicinal plants. During community level planning the native species with high commercial as well as ecological importance will be identified in consultation with the local communities, research institutes, local pharmacies and Ayurvedic practitioners. These species will be planted in the treatment areas of VFDS.

For each VFDS, around 2 - 5 ha area, depending on the availability, will be earmarked for NTFP improvement. The species will be selected based on the site and micro-climatic condition. The VFDS will be fully responsible for protection and maintenance of the plantation. Adequate budgetary provisions will be made for irrigation/ watering and other maintenance requirements of the plantations.

Production of quality planting materials of high altitude medicinal plants in volumes is a challenge for NTFP improvement. Multiple strategies will be adopted to get the quality seeds, rhizomes, root cuttings etc. The research Institutes and other resource organisations such as IHBT, HFRI, YS Parmar University of Forestry and Horticulture, CSK HP Agriculture University, Herbal Gardens of Department of Ayurveda, Pharmaceuticals having their own nurseries etc. will be requested to provide quality planting materials. There are nurseries managed by cooperatives and private enterprises. The services of these nurseries may also be used for procurement of quality planting materials. Efforts will be made to raise some planting materials in the existing nurseries of the Forest Department located in high altitude areas. During the project period efforts will be made to establish seed banks and community nurseries at selected places for production of quality planting stock of different NTFPs including medicinal plants and conservation of germplasms so that after the project period they will continue to produce planting materials.

ii. NTFP Improvement in Non-forest Areas

For cultivation of NTFPs including medicinal plants in the non-forest areas the Cluster Society/ Producer group with the help of VFDS, SHGs and CIGs will identify the land for cultivation. The local communities and Gram Panchayats will be sensitised to identify wasteland for cultivation of medicinal plants. The orchardists will be motivated for intercropping of selected medicinal plants in their orchards. About 10 ha area will be identified for cultivation of NTFPs including medicinal plants in a cluster. More areas will be covered under cultivation, if available. If at least 10 ha per cluster is brought under cultivation then a total of 160 ha will be cultivated in all 16 clusters. During preparation of conservation and resource development plan as well as FEMP as micro plan, the species of cultivation will be finalised. The Cluster Society/ producer group along with the Jadi-Buti Cell will prepare the plan for cultivation and requirement of inputs – planting materials, manures, extension services, maintenance of farms/ sites etc. Planting materials will be arranged from the nurseries of HFRI, IHBT, YS Parmar University, Forest Department and other certified nurseries. In each cluster a revolving fund for cultivation will be provided to the Cluster Society/ producer group, which will be lent to the farmers, growers groups, SHGs/CIGs for undertaking cultivation of NTFPs including medicinal plants. The Cluster Society/ producer group will be responsible for management of the revolving fund and the Management Committee of the Cluster Society/ producer group will screen the applications of farmers/growers, and SHGs/CIGs and accordingly take decisions for release of revolving fund. Initially it will be provided as an interest free loan and subsequently (after 3 years) a nominal interest will be charged to meet the transaction cost. The rate of interest will be decided by the Cluster Society/ producer group in consultation with the Jadi-Buti Cell/ PMU.

The Jadi-Buti Cell and Custer Societies/ producer groups will ensure timely supply of inputs to the growers and extension services. The Community Resource Persons (CRPs) will be trained by the research institutes/ universities as Extension Workers and in case of issues, the services of Experts from the Institutes/ Universities will be hired for trouble shooting. In case of requirement of additional finance requirement, efforts will be made to link the Cluster Societies/ producer groups and growers to financial institutions and other schemes of the Government. The Jadi-Buti Cell/ PMU with the help of DMUs will make all efforts for convergence with other programmes, schemes and projects. Efforts will also be made to access financial support from the National Medicinal Plants Board. The Jadi-Buti Cell will prepare a project proposal based on the proposals of the Custer Societies/ Producer groups and submit it to the NMPB through the State Medicinal Plants Board. A tentative list of species to be cultivated has been provided in **Table 3.7.3.5**.

Table 3.7.3.5 Tentative List of NTFPs including Medicinal Plants to be Cultivated in Non-forestland

| Sl. | NTFP/ Medicinal Plant | Scientific name | Altitudinal range (Metre) | Demand - Amritsar Market | Overall Demand in Market (MT) | Average production per ha (MT) | Area to be cultivated under the project (ha) | Cultivation cost /ha (INR) |
|-----|-----------------------------|--|---------------------------------|--------------------------------|---|---|---|----------------------------------|
| 1 | Atis | <i>Aconitum heterophyllum</i> | 3,000-3,700 | 110-150 | 200-500 | 0.3 | 20 | 161,051 |
| 2 | Bach | <i>Acorus calamus</i> | | 140-150 | 500-1,000 | 3 | 5 | 91,506 |
| 3 | Bankakri | <i>Podophyllum hexandrum</i> | 2,300-4,000 | 70-100 | NA | 3.5 | 10 | 146,410 |
| 4 | Chirayata | <i>Swertia chirayita/ spp.</i> | 1,500-2,600 | 140-150 | 500-1,000 | 1.2 | 10 | 120,788 |
| 5 | Chora | <i>Angelica glauca</i> | 2,000-3,800 | | NA | 2.2 | 10 | 120,000 |
| 6 | Jatamansi | <i>Nardostachys jatamansi</i> | 3,000-4,000 | 140-150 | 200-500 | 1.25 | 5 | 296,480 |
| 7 | Kapurkachri | <i>hedychium spicatum</i> | 1,000-2,000 | | NA | 11 | 5 | 58,564 |
| 8 | Kuth | <i>Saussurea costus/ lappa</i> | 2,600 -4,000 | 100-120 | NA | 3 | 10 | 128,109 |
| 9 | Kutki/ Kadu | <i>Picrorhiza kurrooa/ Gentiana kurroo</i> | 3,000-4,500 | 40-50 | 200-500 | 1 | 10 | 164,711 |
| 10 | Pasanbhed | <i>Bergenia liguata</i> | 1,600-3,200 | | 200-500 | 4 | 5 | 100,185 |
| 11 | Puskarmool | <i>Inula racemose</i> | 2,500-3,700 | 1,400-1,500 | NA | 8 | 10 | 55,343 |
| 12 | Revandehini | <i>Rheum emodi/ austral</i> | 3,000-4,200 | 700-800 | 500-1,000 | 6.5 | 10 | 296,480 |
| 13 | Seabuckthorn | <i>Hippophae rhamnoides</i> | 2,600-3,500 | NA | NA | 12 | 20 | 73,205 |
| 14 | Tagar | <i>Valeriana wallachi/ jatamansi</i> | 2,000-3,500 | 50-75 | 100-200 | 2.5 | 10 | 87,846 |
| 15 | Brahmi | <i>Bacopa monnieri</i> | 350-1,800 | 400-500 | 700-800 | 1 | 10 | 40,000 |
| 16 | Mandukparni | <i>Centella asiatica</i> | 350-1,800 | | NA | 1 | 5 | 40,000 |
| 17 | Mulethi | <i>Glycyrrhiza glabra</i> | Up to 700 | | | 6 | 5 | 125,000 |

Source: JICA Study Team (2017)

Note: NMPB norms have been followed for the cost of cultivation.

(7) “Component 3.2.5: Market Research and Promotion”

The primary responsibility of market research and promotion will rest with the Jadi-Buti Cell.

The Cluster Societies/ producer groups will also carry out market assessment in their area of operations. The Jadi-Buti Cell will undertake periodical market survey to assess the demand of different products in the market and opportunities for marketing (A TOR has been provided in **Attachment II.3.7.3.6**). The Jadi-Buti Cell will be in constant touch with a wide range of stakeholders – pharmacies, exporters, processing industries, herbal markets/ yards, traders etc. to understand the trends and dynamics of the market. Market prices will be

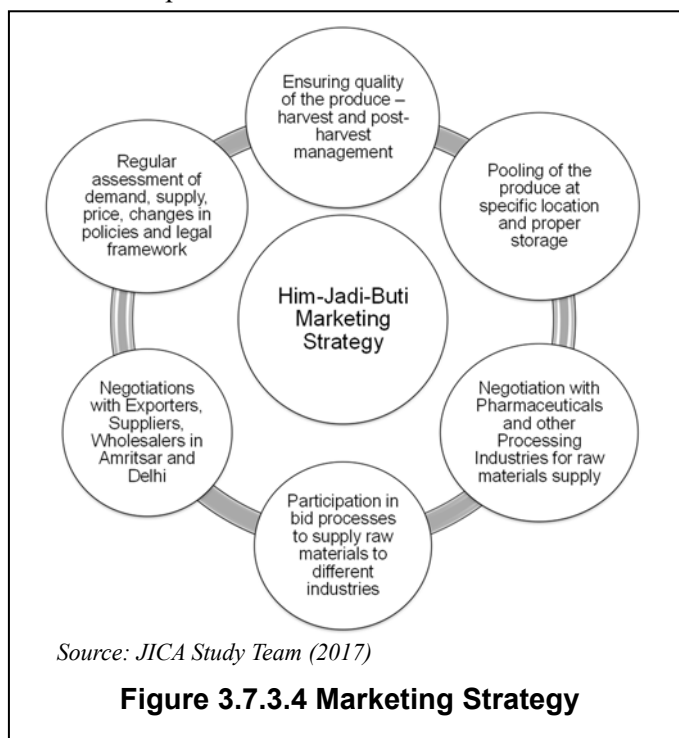


Figure 3.7.3.4 Marketing Strategy

constantly monitored from sources like NMPB, and markets – Majith Mandi-Amritsar, Khari Baoli-Delhi, Haridwar, Ramnagar-Uttarakhand, Neemuch-Madhya Pradesh, APMC-Navi Mumbai, Kolkata etc. The market related information will be passed on to the Custer Societies/ Producer groups for further dissemination. The market survey will be undertaken directly by the staff of the Jadi-Buti Cell. The services of specialised agencies will also be hired for market survey, when needed. The Jadi-Buti Cell will make all efforts to develop a database and a dynamic MIS on different products, their value chain, technical information, successful interventions, information about industries and markets. This database will also include information on collectors, growers, area under cultivation and wild collection areas (with geo-tag) of NTFPs, cultivation techniques, certification levels etc.

The Jadi-Buti Cell and PMU in consultation with different stakeholders will decide a brand name for the NTFPs including medicinal plants from Himachal Pradesh and develop a strategy for brand registration and promotion. Communication materials will be prepared for popularisation of the brand and a series of events will be organised in the state as well as in Delhi, Amritsar etc. for brand promotion. The producers will be registered with Jadi-Buti Cell/ PMU for using the brand.

The Jadi-Buti Cell will be playing a facilitating role for necessary registrations and certifications of Cluster Societies/ producer groups for quality standardisation. The Jadi-Buti Cell will help these organisations to adhere to standards and build their linkages with nationally accredited laboratories, and certification agencies.

The Jadi-Buti Cell will coordinate with different buyers and users of medicinal plants and help the Cluster Societies/ producer groups in marketing of their produces. The Cell will explore the possibility of using both online and off-line mechanisms for linking the producers with processing industries and pharmaceuticals. Social media and audio-visual media will be used to capture success stories and to reach out to the corporates and international buyers.

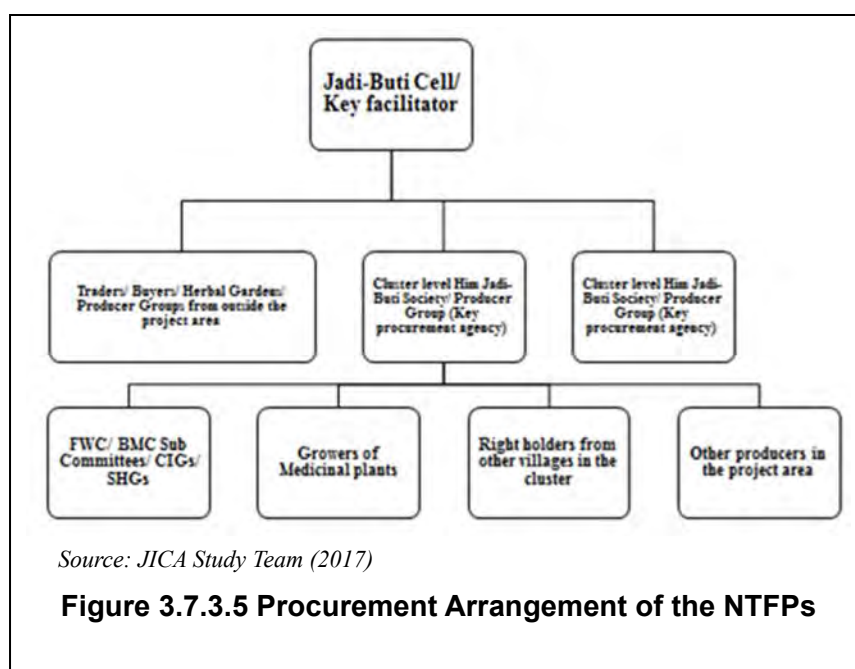
The Jadi-Buti Cell will organise events such as herbal fairs, exhibitions etc. and also participate in the events organised by others at the state and national level. Herbal Fair may be organised to promote trade of herbal products and help promote herbal tourism through Public-Private Partnership. The Jadi-Buti Cell will also explore the possibilities of using the online platform for sale of NTFPs including medicinal plants.

The Jadi-Buti Cell will play an active facilitating role in procurement and marketing of NTFP/ medicinal plants along with the Cluster Societies/ producer groups. Every year the Jadi-Buti Cell will prepare a procurement plan based on the following:

- a) Rapid assessment of the market scenario,
- b) Demands from processing industries and other buyers,
- c) Projection/ Estimation of production of NTFPs including medicinal plants at the cluster level,
- d) Consultations with the Cluster Societies/ producer groups and key buyers, and
- e) Review of production and procurement in the past/ previous years.

The procurement plan will provide information on a) products to be procured, b) volume of procurement, c) mechanisms of procurement, d) purchase price of different NTFPs including medicinal plants, e)

f) funds required for procurement, primary processing, storage and transportation, f) storage facilities to be hired or arranged, g) packaging materials to be organised, h) marketing strategies and arrangements, i) anticipated challenges and strategies to address them, j) monitoring mechanism etc.



The Jadi-Buti Cell will make necessary arrangements including finance for procurement, primary processing and storage of the produces in different locations. The procurement plan will include

the budget required for procurement and marketing and also the strategies for raising funds. The procurement operations at the field level will be carried out by the Cluster Societies/ producer groups and each Society/ producer group will be provided with a revolving fund of INR 1 million by the Project, which will be used for procurement of NTFPs including medicinal plants. The Cluster Society/ producer group will sign MOUs with VFDS, SHGs and CIGs for purchasing NTFPs including medicinal plants from the right holders and farmers from their respective villages/ areas and 50 per cent of the funds required for purchasing the materials will be provided to the VFDSs, SHGs and CIGs as advance. Once the materials are handed over to the Cluster Society/ producer group the rest payments will be made to the VFDSs, SHGs and CIGs. In case of requirement of additional funds by the Cluster Societies/ producer groups, the Jadi-Buti Cell as well as the Cluster Societies/ producer groups will approach financial institutions including NABARD for credit, which will be used by the Cluster Society/ producer group for procurement operations.

A procurement fund of INR 5 million will be available with the Jadi-Buti Cell for procurement of NTFPs including medicinal plants from the areas, where there is no Cluster Society/ producer group set up by the Project. The funds will be utilised based on the procurement plan and in case of requirement of additional funds, the PMU/ Jadi-Buti Cell will approach the financial institutions for financing.

The Jadi-Buti Cell and Cluster Societies/ producer groups will ensure the quality of the produce through field based supervision and adoption of sustainable harvesting protocols and Good Manufacturing Practices in post-harvest management. The PMU/ Jadi-Buti Cell will develop a barcode system for traceability of the products and necessary feedback will be provided to the Cluster Societies/ producer groups on their quality of the products. Sample of the products will be sent to laboratories and corporates buyers to verify the quality of the produce and take appropriate action to address any shortcomings.

The PMU/ Jadi-Buti Cell will consistently negotiate with pharmacies and other processing units for supply of different produces to them. The Jadi-Buti Cell in collaboration with the Cluster Societies/ Producer groups will participate in tenders for supply of raw materials to different processing industries including pharmacies. The raw materials required by the Government Ayurvedic Pharmacies in the state are procured through tender and the Cell along with Cluster Societies/ Producer groups will participate in the tender. Some of the materials are also directly purchased by the Pharmacies from the local farmers and producer groups. Efforts will be made to supply these materials to the Pharmacies procuring directly from the producers. The Jadi-Buti Cell and Cluster Societies/ producer groups, based on the need, will also go for procurement of medicinal plants from the producer groups promoted by other Projects in the state.

(8) “Component 3.2.6: Training & Extension - Institutional Development for State and Cluster Level Him Jadi-Buti Societies”

i. Training Programmes to be Organised at the State Level

The PMU will take adequate measures for strengthening of the Jadi-Buti Cell to function efficiently and effectively. The Cell will prepare strategic plan as well as activity plan in consultation with PMU and implement them under the guidance of PMU. The Jadi-Buti Cell/ PMU will organise periodical planning review meetings/ workshops at the state level attended by the Project Staff, leaders of Cluster Societies/ producer groups, representatives of DMUs and other stakeholders to identify the issues and priorities, and accordingly develop strategies and activity plan. Planning and review meetings/ workshops will also be organised at least two times a year at the cluster level to review the progress of work and develop the work plan – one before preparation of annual activity plan and the second one before the beginning of procurement season.

For Cluster Societies/ producer groups, financial support will be provided by the Project based on their plan and also based on the recommendation of the Jadi-Buti Cell. The Jadi-Buti Cell will provide necessary guidance and handholding support to the Cluster Societies/ producer groups. Each cluster Society/ producer group will be provided with basic infrastructure and human resources (One Manager and three Community Resource Persons) for smooth execution of works. The Manager will have overall responsibility for designing and implementation of NTFP Enterprise Development in the cluster. The Manager will also plan and execute institutional development of the Cluster Society/ producer group so that the Society/ producer group, in 5 years’ time, will be in a position to take up NTFP enterprise development activities without the support of the Manager.

An institution development plan will be prepared and executed for training and capacity building of staff of Jadi-Buti Cell and Cluster Societies/ producer groups. More emphasis will be given on the training and exposure of Community Resource Persons (CRPs) from the Cluster Societies/ producer groups so that they could work with the Cluster Society leaders and members as a team to provide necessary extension services to communities. The leaders of Cluster Societies/ producer groups and CRPs will be taken to the processing industries for interaction with them on value addition of different NTFPs including medicinal plants and what needs to be done to ensure the quality of produce during harvesting and post-harvesting stages. The Project Staff along with the CRPs are going to be the vital links between the communities and technology developer, between the communities and market. The CRPs along with the leaders of Cluster Society/ producer group will sustain NTFP enterprise development activity beyond the project period. Some of the suggested training programmes to be organised by the Jadi-Buti Cell have been presented in **Table 3.7.3.6**.

Table 3.7.3.6 Training programmes to be organised by the Jadi-Buti Cell

| Themes | Coverage | Duration | Participants | Venue |
|--|--|--|--|---|
| Training of Trainers on NTFP management | <ul style="list-style-type: none"> • Organisation of Right holders and growers, and management of cooperative societies and producer organisations. • Agro-techniques for selected NTFPs including medicinal plants. • Sustainable harvesting of NTFPs including medicinal plants from the wild • GMP for post-harvest management NTFPs including medicinal plants | 10 days in two phases (5 days each) | Community Resource Persons (CRPs) – 48 nos. | HFRI or IHBT or Forest Training Institute and Rangers College, Sundernagar or any Field Research Station of HFRI/IHBT/YS Parmar University etc. |
| Institution development of Cluster Societies | <ul style="list-style-type: none"> • Management of Cooperative Society, duties and responsibilities of Management Committee and Office Bearers, statutory requirements • Programme management, fund management, fund raising, record keeping etc. • NTFP enterprise development, collective procurement and marketing, and role of the Society, and linkages with Jadi-Buti Cell. • Business development services, accessing finance from different institutions, marketing strategies. • Interface with industries involved in processing of NTFPs including medicinal plants. | 10 days in three phases (4 + 3 +3 days) | Leaders of the Cluster Level Him Jadi-Buti Societies/ Producer groups – 48 nos. (3 from each Cluster Level Society/ Producer group) | Forest Training Institute and Rangers College, Sundernagar or any other suitable place within the state. |
| Exposure Visit of Leaders of Cluster Societies | <ul style="list-style-type: none"> • Interaction with the processing industries in Baddi, Paprola, Nagrota, Jogindernagar and other places (to be identified during project implementation) | 3 days for each cluster (total 16 nos. of exposure visits) | Leaders of the Cluster Level Him Jadi-Buti Societies/ Producer groups and CRPs led by the Manager of Cluster Society/ producer group | Industries in Baddi and other places |

Source: JICA Study Team (2017)

ii. Training Programmes to be Organised at Cluster Level

Training programmes will also be organised at the Cluster level by the Cluster Society/ producer group with the help of Jadi-Buti Cell and respective DMUs. Training programmes and exposure visits will be organised for the farmers/ growers of the medicinal plants to enhance their understanding and skills for cultivation of medicinal plants. Training programmes will also be organised for the Right holders to develop their understanding and skills for sustainable harvesting of different NTFPs including medicinal plants from the wild and on post-harvest management practices to be adopted for selected NTFPs including medicinal plants. The following table presents the training programmes to be organised in each cluster.

Table 3.7.3.7 Training and capacity building at the cluster level (for each cluster)

| No.. | Capacity Building Activity | Theme to be covered | Target Group | Duration | Facilitator/ Trainer | Place of training | Total No. of training programmes | Total Participants to be trained |
|---------------------|----------------------------|--|---|------------------------------------|---|--------------------------|--------------------------------------|----------------------------------|
| 1 | Skill training | Agro-techniques for selected NTFPs including medicinal plants | VFDSs, SHGs, farmers, orchardists | 6 days (in 6 phases of 1 day each) | HFRI/ IHBT/ YS Parmar University etc. | Within the cluster | 5 nos. (1-day programme – 30 nos.) | 200 |
| 2 | Skill training | Sustainable harvesting protocols for selected NTFPs including medicinal plants and post-harvest management | Right holders, VFDSs, SHGs | 2 days (in 2 phases of 1 day each) | HFRI/ IHBT/ YS Parmar University, Pharmacies, Local Traders etc. | Within the cluster | 20 nos. (1 day programmes – 40 nos.) | 800 |
| 3 | Exposure visit | Farms, nurseries etc. | Farmers, growers of medicinal plants, orchardists | 1 day | Farms and extension centres, research stations of HFRI/ IHBT/ YS Parmar University etc. Farms of some model farmers | Within the Forest Circle | 8 | 160 |
| Total | | | | | | | 33 nos. | 1,160 pax |
| Total – 16 clusters | | | | | | | 528 nos. | 18,560 pax |

Source: JICA Study Team (2017)

iii. Production of Publicity and Communication Materials

One of the interventions of the Jadi-Buti Cell is to create widespread awareness among the different stakeholders on conservation and sustainable management of precious medicinal plants of the Himalayan region. The Cell will work for simplification of research documents/ findings and develop community friendly training manuals, reference materials and campaign materials in local languages and terminology.

The PMU/ Jadi-Buti Cell will engage professionals to develop communication materials on conservation of different NTFPs including medicinal plants and cultivation of important medicinal plants (A TOR has been provided in **Attachment II.3.7.3.7**). Short duration animation movies (10 nos.), videos (10 nos.), posters, booklets etc. will be developed on conservation and sustainable management of important NTFPs including medicinal plants and agro-techniques for important medicinal plants to be cultivated in the farms, orchards etc. These materials will be developed with the help of specialised agencies/ experts. These materials will be made available to the Cluster Societies/ producer groups for dissemination. The Jadi-Buti Cell will help the Cluster Societies/ producer groups to identify cultural troupes and train them to perform shows on NTFP conservation and resource development in the targeted clusters.

3.7.3.3 “Component 3.3: Non NTFP based Livelihood Improvement”

(1) “Component 3.3.1: Preparation of Non NTFP based Livelihood Improvement Strategy and Plan”

The project promotes livelihood activities that are to enhance resilience of the household economy by adopting the strategic identification and planning of livelihood activities. To identify economically viable interventions, PMU Programme Manager (Livelihoods & Training) and Programme Manager (Marketing & Rural Finance) will jointly undertake the planning exercise. The activities to be undertaken are given below.

- ◆ Inventory of the existing clusters
- ◆ Value chain/ market assessment to assure the profitability
- ◆ Feasibility of promotion/ convergence with the existing clusters

A report shall be prepared based on the findings and prepare the strategy paper on the cluster based livelihood promotion. Preliminary assessment of potential livelihood activities suggested for the project is given in the **Attachment II-3.7.3.8**. PMC may also provide guidance during the exercise.

(2) “Component 3.3.2: Preparation of CD&LIP - Planning of household/ community oriented livelihood activities”

The household/ community oriented livelihood activities which are based on other than NTFPs would be identified by CIG/ SHG members during the preparation of CD&LIP, which is to be done while FEMP is prepared (see **Section 3.7.1 (6)**). As part of the planning exercise, simple business plan will be prepared using the format which forms a part of the CD&LIP format developed by PMU.

The basis of identifying the indicative livelihood options include 1) activities that can be done at home and can be done during winter or lean season, 2) closely linked to existing livelihood pattern, 3) activities that have potential for being integrated into the existing marketing channel, and 4) potential for cluster formation or working with the existing clusters. Some of the activities that can be promoted in the project areas include handloom, weaving & knitting, milk product, mushroom cultivation, food processing, poultry and other skills training. However, the opportunities in the snow bound area during winter are limited and thus, the State Project Manager (Livelihood) shall explore other options during the project preparatory phase. As a preliminary exercise, the district wise livelihood activities that have been identified by the Study Team based on the information obtained from the Micro and Small Enterprise Development Institution, Solan is given in the **Table 3.7.3.1**. Where “X” is indicated, the activity is not recommended.

Table 3.7.3.8 Mapping of Livelihood Options in the Prioritised Project Areas

| S.No | Potential Activities | Districts | | | | | |
|------|--|-----------|-------|---------|-------|----------------|--------|
| | | Bilaspur | Kullu | Kinnaur | Mandi | Lahaul & Spiti | Shimla |
| 1 | Handloom (traditional shawls, patti, caps) | X | √ | √ | √ | √ | √ |
| 2 | Weaving & knitting woollen garment | √ | √ | √ | √ | X | √ |
| 3 | Readymade garments, school uniform, embroidery | √ | √ | X | √ | X | √ |
| 4 | Milk production, milk product diversification | √ | √ | √ | √ | X | √ |
| 5 | Off-seasonal Mushroom cultivation | X | √ | √ | √ | X | √ |
| 6 | Vegetable and fruit processing | X | √ | X | √ | X | √ |
| 7 | Beekeeping and honey processing | √ | √ | √ | √ | X | √ |
| 8 | Wool and meat production | √ | √ | √ | √ | √ | √ |
| 9 | Poultry | √ | √ | √ | √ | X | √ |
| 10 | Vermi composting & bio-composting | √ | √ | X | √ | X | √ |
| 11 | Wooden furniture | √ | √ | √ | √ | X | √ |
| 12 | Steel fabrication | √ | √ | √ | √ | X | √ |
| 13 | Iron-grill and shutter making | √ | √ | X | √ | X | √ |
| 14 | Electrical and electronic appliances repair | √ | √ | √ | √ | X | √ |
| 15 | Agriculture implement repair | √ | √ | √ | √ | √ | √ |
| 16 | Eco-tourism & hospitality | √ | √ | √ | X | √ | √ |
| 17 | Computer typing, card designing, screen printing | √ | √ | √ | √ | X | √ |
| 18 | Bio-briquetting from pine needle & agriculture waste | √ | X | X | √ | X | √ |

Source: Compiled by JICA Study Team (2017) based on the information obtained from the Micro and Small Enterprise Development Institute

(3) “Component 3.3.3: Formation/ Reviving CIGs/ SHGs”

Non NTFP based livelihood activities would be undertaken by the CIGs or SHGs which are newly organised or existing. These groups shall indicate keen interest to improve their livelihoods. CIGs can be comprised of the VFDS/ BMC sub committee members whose socio economic status may vary yet share a common interest in improving livelihoods and carrying out income generation activities and/ or marketing activities of the produces collectively whereas the SHGs would be comprised of the members who are from the economically weaker section of the community and their activities would involve savings and internal credit to mitigate the economic vulnerability at household level. The VFDS/ BMC sub committee members would be given options to organise either one of the groups. In case, a CIG or SHG already exists in the project areas and is motivated to work with the project, the project shall adopt such existing groups. Women shall be given priority in organising CIGs/ SHGs. Each of such group may be comprised of 10 members. The formation/ identification of such groups shall be done during preparation of CD&LIP preparation. In case new SHGs are to be organised, DMU subject matter specialists/ FTU coordinator shall explore linking them with SRLM for improved sustainability.

(4) “Component 3.3.4: Implementation of Household/ Community Oriented Livelihood Activities”

Each CIG/ SHG shall prepare an activity plan, a simplified form of business plan during CD&LIP. The process of preparation of business plan shall be defined by PMU and necessary guidance shall be provided by FTU. PMU programme managers of livelihood and training and marketing

and rural finance and DMU subject matter specialists and FTU Coordinator shall facilitate coordination with stakeholders including concerned government programmes and offices and provide technical guidance. The implementation of the household and community oriented small scale IGAs will be assisted by the revolving fund of Livelihood Improvement Fund. Each CIG/ SHG shall be allotted of INR 140,000, which fund shall be parked with VFDS/ BMC. The modus operandi shall be defined by PMU. PMC may also provide technical inputs in designing the operation and monitoring process of the fund.

DMU subject matter specialists/ FTU coordinators shall provide the immediate assistance and handholding to the CIGs/ SHGs in procurement of the resources and implementation of the activities including marketing. Necessary capacity building (business planning, management, record keeping, marketing, skills development, product development and exposure visits etc.) shall also be undertaken by the Project (see **Section 3.7.3.3 (7)**). The initial cost of starting the activities can be partly assisted by the project and the rest shall be managed by members' own capital or by taking loan from the Livelihood Improvement Fund or from other financial institutions.

Various training programmes are also available through government programmes and institutions that can enhance and diversify the means of livelihoods. The project would also facilitate the VFDS/ BMC sub committee members especially youth members to take part in such skills development training programmes so that they have better opportunities in earning livelihoods. The Livelihood Improvement Fund can be accessed by those who are interested in accessing such training opportunities. Himachal Pradesh *Khaushal Vikas Nigam* and Micro, Small and Medium Enterprise Institute, Solan could be a potential agency to converge with as it has a mandate to extend skills training for youth between 15 – 35 years old and implementing centrally funded skills development programmes for various sectors including tourism and hospitality, beauty and wellness, food processing, agriculture, handicraft and etc. Necessary facilitation can be provided through GP Mobilisers, Ward Facilitators, DMU and FTU.

(5) “Component 3.3.5: Promotion of Cluster based Livelihood Activities”

PMU shall coordinate with relevant cluster based organisations and work with DMUs/FTUs to initiate the process of cluster based livelihood activities. The cluster based activities can be jointly financed by the project and other government schemes/ programmes. A lump sum budget shall be allocated for the promotion and development of the cluster based livelihood activities. Handloom, mushroom cultivation, and poultry may be promoted. CIG/ SHGs located in the areas where the existing clusters are nearby will be encouraged to take up these activities. After the assessment of the economic viability and suitability for women, who are expected to constitute the majority of the beneficiaries through this component, handloom, mushroom, and poultry were suggested as potential cluster based activities. (The results of the review are given in **Attachment II.3.7.3.8**.) The indicative number of CIGs/ SHGs that may be engaged for cluster based

activities for different enterprises is given in the table below. DMU/ FTU will facilitate the process of activities.

Table 3.7.3.9 Indicative Cluster Based Livelihood Activities

| District | No of Groups | Remarks | Districts with High Potential |
|---|-----------------|---|---|
| Handloom & Traditional Woollen Cloth Making | 50 Cooperatives | Each cooperative is assumed to be comprised of 2 CIG/ SHGs or 20 member households. | Kullu, Mandi, Lahaul & Spiti |
| Mushroom | 120 CIG/ SHGs | Each CIG/ SHG is assumed to be comprised of minimum of 10 member households. | Kullu, Mandi, Shimla, Kinnaur, Lahaul & Spiti |
| Poultry | 350 CIG/ SHGs | Each CIG/ SHG is assumed to be comprised of minimum of 10 member households. | Kullu, Mandi, Shimla, Kinnaur, Lahaul & Spiti, Bilaspur |

Source: JICA Study Team (2017)

Other traditional skill based livelihood activities including broom making, bamboo basket making, leather accessories, wooden artefacts have been practiced by some communities. However, the design and quality need to be enhanced. If such activities are identified in the project areas during the project period, Himachal Pradesh *Khaushal Vikas Nigam*, Micro Small and Medium Enterprise Institute, Solan, Rural Entrepreneurship Development Institute and HP State Handloom & Handicrafts Development Co-operative Federation Ltd may be considered as resource organisations.

(6) “Component 3.3.6: Capacity Development for CIGs/ SHGs and Cluster Based Organisation”

The Project involves SHGs and CIGs as basic units for livelihood improvement activities. In communities where SHGs or CIGs are already in operation, the Project would avoid creating a new organisation but instead help such groups reactivate and strengthen by providing necessary supports. Convergence would be sought when the target communities fall under the intensive blocks of the SRLM or any other SHG programmes by other organisations. In these circumstances, the Project may simplify some basic training of the SHGs and project interventions shall place more emphasis on livelihood related training business planning, marketing and value addition etc.

i. “Component 3.3.6.0: Preparation of Manuals”

Groups for livelihood improvements would require two skill sets: one is the knowledge and skills for organisational management and the business management on the other. Prior to the training programme, manuals are to be developed for CIG/ SHG. As for the cluster based organisations, the materials can be developed at a later stage of the project implementation by PMU. The outline of the manuals is given in the table below. These materials are to be used during the training for DMU/ FCCU Subject Matter Specialist and FTU coordinators, who would be conducting the training programmes for CIG/ SHG and cluster based organisations.

Table 3.7.3.10 Outline of Manuals- CIG/ SHG Capacity Building

| Intended users | Title | Outline of the Manual | Remarks |
|---|--|--|--|
| DMU subject matter specialist/ FTU staffs | Trainer's Manual for Livelihood Activities under HPFEM&LIP | Objectives of Livelihood Interventions under HPFEM &LIP Roles and responsibilities of DMU and FTU in livelihood improvement interventions Planning of livelihood activities SHGs/ CIGs – commonalities and differences Different options for livelihood improvement – household based, group based or cluster based Business planning Managing livelihood activities Group management Government schemes and programmes for livelihood improvement Understanding market and value chain Financial management and bank linkages Record keeping | As a TOT material, sufficient information shall be given from planning, implementation and phase out stage shall be covered in the manual. Necessary formats shall also be included in the manual. |
| CIG/ SHG members | Field Manual for Livelihood Activities under HPFEM&LIP | Objectives of Livelihood Interventions under HPFEM &LIP Roles and responsibilities of DMU and FTU in livelihood improvement interventions Planning of livelihood activities Business planning Government schemes and programmes for livelihood improvement Understanding market and value chain Financial management and bank linkages Record keeping | The field manual shall be prepared in simple language with sufficient pictorial depictions shall be given. The views of the intended uses shall be collected and necessary changes are to be incorporated before finalisation of the material. |

Source: JICA Study Team (2017)

ii. “Component 3.3.6.1 TOT for DMU/ FTU for Livelihood Interventions”

Training programmes for DMU subject matter specialists and FTU coordinators shall be carried out as per the contents of the guidelines as indicated in the above section. The training shall be undertaken prior to the preparation of the CD&LIP.

iii. “Component 3.3.6.2: Training for GP Mobilisers and Ward Facilitators”

Training programmes on livelihood improvement shall be undertaken as per the manual as given in the previous section. The training shall be undertaken at range level by DMU/ FTU.

iv. “Component 3.3.6.3: Training Programmes for CIGs/ SHGs”

Table 3.7.3.11 provides the suggested outline of the training and exposure visit for the CIG/SHGs. Basic training on SHG concept and management is applicable not only to SHGs but to all new CIGs considering the future access to external credits. The contents of the training shall be adjusted depending on the responses from the participants of the training. The evaluation of each training shall be undertaken by the FTU coordinators along with DMU Subject Matter Specialists, which indicators to be used shall be provided by PMU. The training programmes can be

scheduled according to the availability of participants who are most likely to be women. In case the 2 days training is to be planned, it can be broken into 4 slots of half day sessions. The discussion shall be held with the participants and schedule and venue shall be fixed.

Table 3.7.3.11 Proposed Training for SHGs and CIGs

| S N | Topics | Outline | Trainer/ Partner | Duration | Batch size |
|------------------|---|---|--|----------|------------|
| 1 | Project Orientation Group Formation/ Reorganisation | Project objectives and approaches Forest ecosystem management and livelihood Improvement Formation and reorganisation of CIGs/ SHGs | DMU Subject Matter Specialist, FTU Coordinators/ PMC | 0.5 day | 30 |
| 2 | Group Concept and Management | SHG concept - relevance, management and functions Panchsutra (5 key principles) Savings and Credit Meetings and record keeping Social mobilisation and issues Confidence and leadership building Gender sensitisation - rights, issues, avenues | | 2 days | 30 |
| 3 | Introduction to IGA (General) | Introspection, community Consultations on possible IGA Introduction of the IGA options including NTFP/ Non NTFP based activities IGA options Basic concept of demand and supply | | 1 day | 30 |
| 4 | Marketing and Business Plan Development | Business Plan Development Market demand and supply management Branding and Value Chain Costing, Pricing and Profit Negotiation Skill | DMU Subject Matter Specialist, FTU Coordinators/ PMC/ Resource persons | 2 days | 20 |
| 5 | Bank Credit Linkages | How and why microfinance and bank linkages Eligibility Importance and purpose of loan Micro credit planning Documentation requirements Interest and repayment | | 0.5 day | 30 |
| 6 | Enterprise Development | Value chain analysis Skill upgradation analysis Cluster/federation enterprise management Existing linkages and networking Convergence of services | | 2 days | 20 |
| Total No of Days | | | | 8 | |

Source: JICA Study Team (2017)

v. “Component 3.3.6.4: Exposure Visits”

Exposure visits shall also be conducted for the members of CIG/ SHGs and cluster based organisations. The visits shall be planned for within the state and outside of the state. The visits for the outside of the states, the destinations shall be identified from the states where the JICA assisted forestry projects are implemented and having strong livelihood components and Uttarakhand, Tripura and Odisha are suggested for the visits.

Table 3.7.3.12 Proposed Exposure Visits by Community Institutions

| Place | Purpose | Participants | Duration |
|---|---|--|----------|
| SHGs, SHG cluster/federations organised within the state | To learn from the successful model of community based activities or its development To share experiences To create networks | Selected SHGs, CIG leaders, Ward Facilitators, GP mobilisers | 2 days |
| SHGs, SHG cluster/federations organised outside of the state (Uttarakhand, Tripura, Odisha, and other states implementing JICA Forestry Projects) | | | 7 days |

Source: JICA Study Team (2017)

vi. “Component 3.3.6.5: Training Programmes and Business Development Services for Cooperatives”

Cooperatives may be organised by CIGs/ SHGs promoted by the project and linked with the existing product based clusters to facilitate production, aggregation of produces/ products and marketing. In such cases, the project shall facilitate such potential groups to acquire necessary training programmes. Himachal Pradesh Department of Cooperatives shall be approached for establishment of cooperatives. As for case studies and exposure visits, Swan Women’s Multipurpose Cooperative, Una, which was organised by JICA assisted Swan River Integrated Watershed Management Project (2006 – 2017). As for Business Development Services including business planning and marketing, Micro Small Medium Enterprise Institute, Solan may be approached.

3.7.4 Component 4: Institutional Capacity Strengthening

3.7.4.1 “Component 4.1: Preparatory Works”

(1) “Component 4.1.1: Establishment of PMU and Field Level Units”

Prior to the implementation of the project activities, project implementation units shall be established. The project will establish implementation units at state, division and range. The details of the institutional arrangement are elaborated in **Part II Chapter 4** of this report.

The provision of human resources will be optimally done with an objective to strengthen the project implementation and management, and at the same time adequately address skill-set gap within the overall departmental functioning and project operations. Since the HPFD will not be in position to provide full-time staff in adequate numbers for the Project due to responsibilities of regular departmental operations coupled with paucity of regular staff within the department, a strategy has been adopted to provision regular staff only for key roles and supplement the human resource gap with contractual and outsourced staff. The institutional arrangements ensure that the main responsibility to implement the Project remains with the regular departmental structures whereas the project staff assist and support the project operations, and wherever required fill-in the skill gaps.

Thus, dedicated teams have been created at the PMU, FCCU, DMU and FTU levels that have both regular and contractual/ outsourced staff. The FTU, with full-time team under the part time FTU (range) officer, would be located within range office to assist and support project operations

at the community level. DMU would be supported by two full-time staff (subject matter specialists) on contract who will assist the part-time DMU officer and the assistant DMU officer designated for the project. FCCU will assist and coordinate with the DMUs/ FTUs. PMU will have the main responsibility to implement the project and manage the funds. The salary of the regular staff on deputation to the project would be accounted under the administrative cost component. Details on the human resources is provided in **Part II Chapter 4** of this report.

(2) “Component 4.1.2: Strengthening of PMU and Field Level Units”

i. “Component 4.1.2.1: Strengthening of PMU Office and IT Cell of HPFD”

1) Equipment/ Office Automation/ Gadgets

Under the project, the existing facilities of IT Cell of HPFD would be strengthened so as to support the IT based activities of HPFD as well as the project with an objective of seamless centralised and focussed IT based initiatives without duplicating the efforts or developing parallel overlapping systems. IT infrastructure requirement of the PMU and the IT Cell of HPFD considering the available infrastructure and the proposed staff for the PMU is elaborated in **Table 3.7.4.1** below. The field survey tools at PMU level is mainly for training purpose as well as periodical sample based monitoring/evaluations by PMU technical staff. In principle, the equipment will be procured during the first year of the Project.

Table 3.7.4.1 Proposed IT Infrastructure at PMU & IT Cell (Indicative)

| Item | Broad Specification | Unit | Quantity |
|---|--|------|----------|
| Workstation (IT Cell) | Intel i7 with Intel HD Graphics 530 or equivalent (3.4 GHz, up to 4 GHz with Intel Turbo Boost); 8GB RAM and 1TB HDD, with 18.5 inch Monitor and preinstalled with latest Windows OS | No. | 2.0 |
| Workstation (for 2 technical staff of PMU) | Intel i7 with Intel HD Graphics 530 or equivalent (3.4 GHz, up to 4 GHz with Intel Turbo Boost); 8GB RAM and 1TB HDD, with 18.5 inch Monitor and preinstalled with latest Windows OS | No. | 2.0 |
| Desktop Computers (Proposed Positions except for 2 Technical GIS/MIS staff) | Minimum 4GB RAM, 1TB HDD, Processor - dual core @ 2.4 GHz (i5 or i7 Intel processor or equivalent, with 18.5 inch Monitor and preinstalled with latest Windows OS | No. | 30.0 |
| Laptop (PMU) | Intel® Core™ i5-6200U With Intel® HD Graphics 520 Processor; 4GB DDR4 RAM / 1TB HDD; preinstalled with preinstalled with Windows OS or equivalent | No. | 2.0 |
| On-line UPS for PMU | Online UPS System (6KVA) | No. | 1 |
| MS-Office | MS Office (Home) | No. | 34.0 |
| MFP-A4 (Mono) Laser | Print, Copy, Scan ; Laser printer, 1200 MHz, Speed; 40 ppm; Scan Up to 1200 dpi, Scan size 216 x 297 mm ; Duplex printing | No. | 8.0 |
| Camera | 20 Megapixel, 8x Zoom, | No. | 4.0 |
| Misc. (Toner, Paper, AMC) | | No. | 1.0 |
| A3 size Printer | A3 size; Officejet printer (colour) | No. | 1.0 |
| Prismatic Compass | | No. | 2.0 |
| Clinometer | Measuring angle | No. | 2.0 |
| Laser Range Finder/ Hypsometer | Measuring Device- Laser based (lowest model with maximum ranges 60 meters) | No. | 2.0 |
| Aluminium Pole (3 feet height) | Set of 3 Poles | No. | 2.0 |

| Item | Broad Specification | Unit | Quantity |
|--|---|--------------|----------|
| Diameter Tape | Minimum 2 meter length or equivalent | No. | 2.0 |
| Densitometer | For forest canopy analyser | No. | 2.0 |
| GPS enabled Smart Phone (Handheld) | GPS/Glonass and AGPS enabled Android Smart phone for Survey and Monitoring | No. | 8.0 |
| ESRI's Arc GIS Software | ArcGIS Desktop (10.5 or Latest version) | No. | 2.0 |
| ESRI's Arc GIS extensions | Spatial Analyst and 3D Analyst – Two Licenses each | Set | 2.0 |
| Anti-Virus (Project & IT Cell) | Multi user (3 user / year) for 7 years (34 PMU+12 IT cell) | No. | 61.0 |
| Development of Mobile Apps. for M&E and Incident Reporting | Mobile apps development and their integration with existing web-enabled applications including | Set | 1 |
| Hiring of Cloud service | Cloud service for (a) Project Database and mobile app based M&E system requirement (b) Working Plan preparation requirement | GB/Yr | 20 |
| Satellite Images | IRS LISS-IV MX satellite images for monitoring of Plantations and Forest during project duration (3 times during the project cycle) | No. of times | 3 |

Source: JICA Study Team (2017)

2) Office Space

The HP state government notification (No. FFE-A(B)2-1/2017 dated March 9, 2017) has already been issued for creation of the Project headquarter at Shamshi, Kullu district and a regional office at Rampur, Shimla district. However, from project implementation efficiency point of view and closer coordination with PCCF office, especially with the GIS cell of HPFD, and envisaging effective convergence with head offices of other departments in Shimla, the study team considers having PMU office in Shimla is an advantage for the Project.

In case the PMU office to be established in Shimla, the office can be established at buildings available at HPFD complex at Shogi located at a suburb of Shimla, or an office space will be rented within the Shimla city.

3) Mobility

Since there is restriction on purchase of new vehicles (4-wheel drive), the Project will support for hiring vehicles for undertaking field operations and regular office functioning. 8 number of 4 WD vehicles would be hired at the PMU office to improve the mobility of the PMU staff. These mobility would be for field supervision as well as regular office operations.

ii. “Component 4.1.2.2: Strengthening of FCCU Offices at District level”

1) Equipment/ Office Automation/ Gadgets

The FCCUs would play a vital role in project implementation and be a crucial link between PMU and field units (divisional offices, FTUs, and range offices). Also, FCCUs play an important role in facilitating convergence with other departments at district level.

The IT infrastructure requirement for FCCUs was assessed based on the staff proposed for each FCCU as well as to strengthen effective and faster mode of communication (**Table 3.7.4.2**). In principle, the equipment will be procured during the first year of the Project.

Table 3.7.4.2 Proposed IT Infrastructure at FCCUs (Indicative)

| Item | Broad Specification | Unit | Quantity |
|--|---|------|----------|
| Desktop Computers (Proposed Positions) | Minimum 4GB RAM, 1TB HDD, Processor - dual core @ 2.4 GHz (i5 or i7 Intel processor or equivalent, with 18.5 inch Monitor and UPS and preinstalled with latest Windows OS | No. | 6.0 |
| MS-Office | MS Office (Home) | No. | 7.0 |
| Laptop | Intel® Core™ i5-6200U With Intel® HD Graphics 520 Processor; /4GB DDR4 RAM / 1TB HDD; preinstalled with preinstalled with Windows OS or equivalent | No. | 1.0 |
| MFP-A4 (Mono) Laser | Print, Copy, Scan ; Laser printer, 1200 MHz, Speed; 40 ppm; Scan Up to 1200 dpi, Scan size 216 x 297 mm ; Duplex printing | No. | 2.0 |
| A3 size Printer | A3 size; Officejet printer (colour) | No. | 1.0 |
| Camera | 20 Megapixel, 8x Zoom, | No. | 2.0 |
| Misc (Toner, printer paper, AMC) | | No. | 1.0 |
| Compass | | No. | 1.0 |
| Clinometer | Measuring angle | No. | 1.0 |
| Laser Range Finder/ Hypsometer | Measuring Device- Laser based (lowest model with maximum ranges 60 meters) | No. | 1.0 |
| Aluminium Pole (3 feet height) | Set of 3 Poles | No. | 1.0 |
| Diameter Tape | Minimum 2 meter length or equivalent | No. | 1.0 |
| Tag Number | For tagging trees during biomass measurement (One set with 100 numbers) | Set | 1.0 |
| Densitometer | For canopy density measurement | No. | 1.0 |
| GPS enabled Smart Phone (Handheld) | GPS/Glonass and AGPS enabled Android Smart phone | No. | 2.0 |
| Anti-Virus | Multi user (1 user / year) for 7 years | No. | 7.0 |

Source: JICA Study Team (2017)

2) Office Space

FCCU offices are planned to be established at district capital. In case circle office or divisional office exists in the district capital and space for FCCU office is available within existing offices, FCCU offices to be established either by renovation or extension of existing offices. In case, such space is not available, an office space will be rented at the district capital.

3) Mobility

One 4 WD vehicle to be hired per FCCU office to improve the mobility of the FCCU staff. Thus, in all support for hiring 6 vehicles has been made.

iii. “Component 4.1.2.3: Strengthening of DMUs”

1) Equipment/ Office Automation/ Gadgets

The IT infrastructure requirement for division offices is to strengthen effective monitoring and recording of project accounts and documents (**Table 3.7.4.3**). In principle, the equipment will be procured during the first year of the Project.

Table 3.7.4.3 Proposed IT Infrastructure at DMUs (Indicative)

| Item | Broad Specification | Unit | Quantity |
|--|---|------|----------|
| Desktop Computers (Proposed Positions) | Minimum 4GB RAM, 1TB HDD, Processor - dual core @ 2.4 GHz (i5 or i7 Intel processor or equivalent, with 18.5 inch Monitor and UPS and preinstalled with latest Windows OS | No. | 2.0 |
| Laptop | Intel® Core™ i5-6200U With Intel® HD Graphics 520 Processor; /4GB DDR4 RAM / 1TB HDD; preinstalled with preinstalled with Windows OS or equivalent | No. | 2.0 |
| MS-Office | MS Office (Home) | No. | 4.0 |
| MFP-A4 (Mono) Laser | Print, Copy, Scan ; Laser printer, 1200 MHz, Speed; 40 ppm; Scan Up to 1200 dpi, Scan size 216 x 297 mm ; Duplex printing | No. | 1.0 |
| A3 size Printer | A3 size; Officejet printer (colour) | No. | 1.0 |
| Camera | 20 Megapixel, 8x Zoom, | No. | 2.0 |
| Misc (Toner, printer paper, AMC) | | No. | 1.0 |
| Compass | | No. | 2.0 |
| Clinometer | Measuring angle | No. | 2.0 |
| Laser Range Finder/ Hypsometer | Measuring Device- Laser based (lowest model with maximum ranges 60 meters) | No. | 2.0 |
| Aluminium Pole (3 feet height) | Set of 3 Poles | No. | 2.0 |
| Diameter Tape | Minimum 2 meter length or equivalent | No. | 2.0 |
| Tag Number | For tagging trees during biomass measurement (One set with 100 numbers) | Set | 2.0 |
| Densitometer | For canopy density measurement | No. | 2.0 |
| GPS enabled Smart Phone (Handheld) | GPS/Glonass and AGPS enabled Android Smart phone | No. | 2.0 |
| Anti-Virus | Multi user (3 user / year) for 7 years | No. | 1.0 |

Source: JICA Study Team (2017)

2) Office Space

Basically, DMU offices are planned to be established within existing divisional offices. DMU offices to be established either by renovation or extension of existing offices. In case, such space is not available, an office space will be rented at the district capital.

3) Mobility

Provision for hiring one vehicle per DMU has been made to support and implement the project implementation. The vehicle would be utilised by the DMU personnel who would be made responsible for the project related activities.

iv. “Component 4.1.2.4: Strengthening of FTU Offices at Range Level”

1) Equipment/ Office automation/ Gadgets

To strengthen FTUs as a field technical coordination and monitoring unit, it is vital to provide with minimum required IT Infrastructure. The identified required IT Infrastructure details for each FTU are elaborated in **Table 3.7.4.4** below. In principle, the equipment will be procured during the year when FTU is established.

Table 3.7.4.4 Proposed IT Infrastructure at FTUs (Indicative)

| Item | Broad Specification | Unit | Quantity |
|--|---|------|----------|
| Desktop Computers (Proposed Positions) | Minimum 4GB RAM, 1TB HDD, Processor - dual core @ 2.4 GHz (i5 or i7 Intel processor or equivalent, with 18.5 inch Monitor and UPS and preinstalled with latest Windows OS | No. | 4.0 |
| MS-Office | Word, Excel, Presentation | No. | 4.0 |
| Laptop | Intel® Core™ i5-6200U With Intel® HD Graphics 520 Processor; 4GB DDR4 RAM / 1TB HDD; preinstalled with preinstalled with Windows OS or equivalent | No. | 1.0 |
| MFP-A4 (Mono) Laser | Print, Copy, Scan ; Laser printer, 1200 MHz, Speed; 40 ppm; Scan Up to 1200 dpi, Scan size 216 x 297 mm ; Duplex printing | No. | 1.0 |
| Camera | 20 Megapixel, 8x Zoom, | No. | 2.0 |
| Misc(Toner, Printing paper, AMC) | | No. | 1.0 |
| A3 size Printer | A3 size; Officejet printer (colour) | No. | 1.0 |
| Compass | | No. | 3.0 |
| Clinometer | Measuring angle | No. | 3.0 |
| Laser Range Finder/ Hypsometer | Measuring Device- Laser based (lowest model with maximum ranges 60 meters) | No. | 1.0 |
| Aluminium Pole (3 feet height) | Set of 3 Poles | No. | 3.0 |
| PVC Pole (3 feet height) | | No. | 5.0 |
| Diameter Tape | Minimum 2 meter length or equivalent | No. | 3.0 |
| Tag Number | For tagging trees during biomass measurement (One set with 100 numbers) | Set | 2.0 |
| Densitometer | For canopy density measurement | No. | 3.0 |
| Weighing Scale | For weighing | No. | 2.0 |
| GPS enabled Smart Phone (Handheld) | GPS/Glonass and AGPS enabled Android Smart phone | No. | 4.0 |
| Anti-Virus | Multi user (3 user / year) for 7 years | No. | 2.0 |

Source: JICA Study Team (2017)

2) Office Space

If office space is available in a concerned range office, such will be used as FTU office either by renovation or extension of existing office. In case space for FTU office is not available in the existing range office, an office space will be rented in the vicinity of the range office.

3) Mobility

Provision for hiring one vehicle has been made for the FTU team for facilitating the field operation.

(3) “Component 4.1.3: Recruitment of the Personnel/ Subject Matter Specialists/ Resource Organisations”

The project also intends to engage qualified individuals from the open market to be placed at state, division and range level. The recruitment shall be done through public announcement on the leading national newspapers and also project websites.

In case, NGOs/ Resource Organisations and subject matter specialists are to be engaged, the procurement shall be undertaken during the preparatory phase once PMU is established and project implementation plan is reviewed by PMU. The timing of procurement of these

organisations/ individuals may vary depending on the requirement. The procurement shall begin well in advance of their actual deployment. The necessary terms of reference shall be prepared by PMU/ PMC as the need arises. The mode of procurement shall be according to the applicable laws and thus, through national competitive bidding, procurement by quotation or by direct appointment.

At PMU level, apart from proposed officers and staffs described in **Part II Section 4.4.1**, the following subject matter specialists are planned to be deployed. Draft TORs of these subject matter specialists are presented in **Attachment II.3.7.4.1**.

- ◆ Pasture Management
- ◆ NTFP/Value Chain/ Marketing
- ◆ Sustainable Tourism

(4) “Component 4.1.4: Preparation of Gender Action Plan”

The project shall adopt sufficient gender mainstreaming measures to contribute to empowerment of women in the project areas and also to reach out to the women who are entitled to. The project shall engage gender specialist during the preparatory phase to prepare a Gender Action Plan (GAP) for the project including the implementation and for monitoring and evaluation (M&E) mechanism of GAP. The national specialist on gender shall be engaged for 3 months to complete the assignment (**Attachment II.3.7.4.2 (a)** for Indicative TOR). In the subsequent support for implementation and M&E of GAP shall be assisted by PMC. An indicative outline of GAP is given in **Attachment II.3.7.4.2 (b)**.

(5) “Component 4.1.5: Environmental and Social Consideration (ESC)”

Neither the Project nor HPFD has any specific personnel stationed for handling the ESC aspect. Thus, it is suggested to allocate external experts in charge of environmental and social safeguard aspect of the Project so that the Environmental and Social Assessment Framework (ESAF) and Vulnerable Scheduled Tribes Planning Framework (VSTPF) shall be updated and applied during the course of the project implementation.

The overall responsibility of the implementation of ESAF/VSTPF shall be vested with PMU, and a Director under PMU would have responsibilities to ensure implementation and monitoring and compliance of environmental and social safeguards.

In this regard, experts, Environmental and Social Consideration Expert (ESCE) and Environmental and Social Consideration Field Expert (ESCFE) who are planned to be directly hired by PMU shall assist PMU for the compliance of the required environmental and social safeguards. Further details including draft TORs of the experts are depicted in **Attachment II.3.7.4.3**. From the second year and onward, PMC specialist, Environmental and Social Consideration/ Environmental Economics/ PES Specialist, will support PMU and ESCE/ESCFE in the environmental and social safeguard aspects of the Project as well.

3.7.4.2 “Component 4.2: Capacity Development”

(1) “Component 4.2.1: Implementing Agency”

Capacity development is about supporting growth within individual or groups across societies as a whole. It is a process through which individuals, organisation and societies obtain, strengthen and maintain capabilities to set and achieve their own development objectives over time.

It is widely acknowledged that the capacity cannot be separated from sustainable human development. We now recognise capacity development as critical to overall human development, how capacity emerges, how we develop and evaluate it, and (most importantly) how we sustain it is not clear. Our support may require a mix of interventions and must recognise what individuals or organisations are already good at – such recognition will ensure further development of the existing capacity.

The way capacity needs to be viewed from an individual’s perspective is about the skills and knowledge vested in individuals, communities and groups, whereas from organisation’s perspective capacity is about the internal policies, systems and strategies that enable an organisation to operate and to achieve its goals.

Under regular departmental functions, trainings are organised and conducted for forest officials and field staff but little or no efforts are made to undertake capacity development as an organisations strategy for efficient management and operations. Not all field staff is getting equal opportunities to get trained on various aspects of their works. A gap is also identified where systematic trainings have not been adequately undertaken on emerging policies & programmes, acts, tools and techniques etc. applicable to forestry sector.

Largely, for training of frontline staff class-room approach is followed at State Training Institutes, and proportionately lesser time is devoted to learn through demonstrations and hand-on practices. Also, there are few opportunities when senior officials of the forest department share their work and practical field experiences with the trainees as well as cross-learn from each other experiences. This pedagogy must be challenging both for the trainers as well as trainees, as internalisation of lessons depends mainly on the quality of lectures/ reading material and his/ her own absorption capacities. Role play and exposures to real situations would substantially enhance the learning outcomes for participants.

Since, the range-level and the frontline staff serve as main support for the department functions, adequate attention and opportunities is to be given to develop capacities and prepare them well to take-up emerging challenges in the forestry sector, as well in the project, in an efficient and effective manner.

Thus, for institutional capacity development of the forest department/ key stakeholders a combination of learning and training methods and approaches would be adopted and applied. The learning opportunities for the project staff would be in form of orientations, training, workshops, exposure visits (outside state and overseas) etc. Knowledge material in form of guidelines, manuals and standard operating procedures would also be developed and disseminated. In

addition, there would be continuous handholding/ field support and guidance by experts and resource/ partner organisation etc. To estimate the factors that have contributed to the outcomes of the project, efforts would also be made to assess the impact of the capacity development initiatives at two stages viz., mid-term and end-term evaluations.

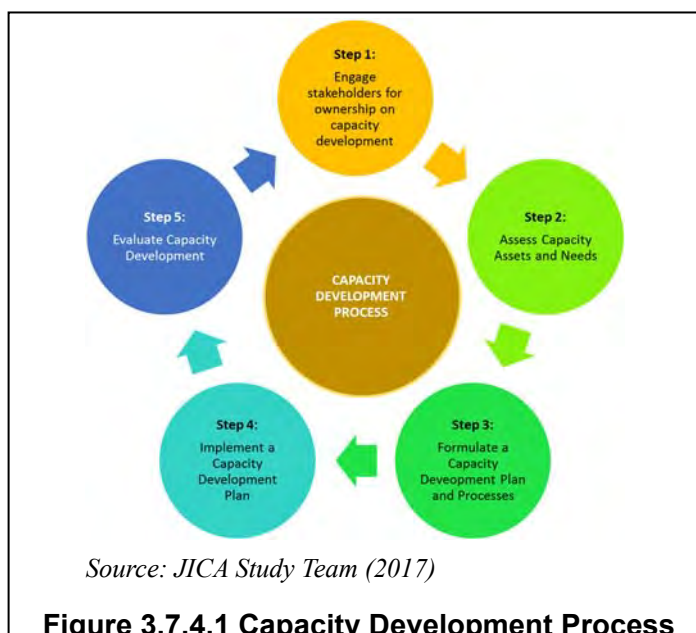
To engage the state Forest Training Institutes (FTIs), located at Sunder Nagar and Chail, for capacity development of stakeholders in the project, it would be essential to assess the strengthening requirements to support capacity needs of the project. In the larger domain of strengthening of institutional capacity of the Executing Agency (HPFD), project may consider such support.

The following sections provides a broad roadmap for evolving capacity strategy and its elements. These would further be elaborated during the preparatory phase of the project.

i. Formulating Capacity Development Plan

Foremost step would be to develop a comprehensive capacity development strategy and plan for project stakeholders to help PMU to systematically build capacities and skills to achieve the results in a defined timeframe. Ideally, it must be developed by PMU during the first year i.e. during the preparatory phase of the Project. The capacity development strategy and plan (CDSP) will provide a road map to capacitate the identified target group on all important elements of the project components and processes in batches during initial 2-3 years of the project implementation. The CDSP will be updated in fourth year or mid-term (whichever is earlier) of project operation factoring in all earlier deviations and applying price escalations, as required.

To formulate realistic CDSP, at first place, rapid Training Need Assessment (TNA) exercise will need to be undertaken across all key stakeholder categories, and based on the findings of the TNA, a comprehensive CDSP will be developed. PMU could develop this plan with support from PMC or by engaging some experienced and credible resource person/ organisation, in case PMC is not in place. A brief outline of the tasks to be carried out by the Consultant for conducting TNA is given at **Attachment II.3.7.4.4**.



This plan will cater both for the national as well as the overseas capacity building initiative like trainings/ exposures. Thus, the project will follow a well-defined capacity development strategy to achieve project objectives/ goals and to capacitate stakeholders for effective project implementation. After the detailed CDSP has been developed, it should be approved by the Governing Body, and concurred by the JICA.

ii. Nomination of Trainees

Transparent and uniform staff nomination policy and criteria would be developed by PMU, and included in the CDSP. The nomination policy must provide equal opportunity to all project staff/ key stakeholders to receive training, and must also encourage women staff to get trained.

iii. Annual Training Calendar

Annual Training Calendar will be developed by PMU and would be included as part of the Annual Plan of Operation. Accordingly, budget allocations for the annual training calendar would be prepared by PMU. The topics of the training identified in the CDSP would be followed to the extent possible.

It is clarified that the CDSP will not act a deterrent to modify or change the training topics during project implementation as per the emerging needs identified through various feedback, assessment reports, annual workshops etc. To keep track of the modifications being made in the plan, as a system of approvals from competent authority will be introduced. Such deviations/ change in topics of training should also get reflected in the Quarterly and Annual Reports.

The training modules designed for the target groups should be simple to comprehend at various levels of operations, and should be designed within the scope of the unit rate estimates. Option of annual price escalations can be applied on the unit rates, if desired.

iv. Elements of the Annual Training Calendar

The key capacity development initiatives for the stakeholders would be in form of orientations, training, exposure and workshops. The following are some of the key elements of annual training calendar.

v. Orientations

As the project rolls out, the project staff at all level of operations need to get acquainted with the project design and processes including the project log frame, participatory techniques, rural appraisals and M&E, operation manual, guidelines and hand-books etc. This would require a series of orientations for all stakeholders during first-six months of operation. Both in-house as well as outside expertise need to be utilised for the purpose. The PMC after its induction need to be involved in this process.

vi. Regular Trainings

PMU would organise series of regular trainings for systematically capacitating the stakeholders following the Annual Training Calendar. As a strategy, short duration trainings at local level could be planned more intensely to minimise long absence of staff from field and home.

The modules, training content, identification of resource persons and study material will be supported at PMU level to ensure uniformity in training content quality and information dissemination. The scheduling of the trainings could be done adjusting with the priorities and progress of the project.

As a system PMU would seek feedbacks from trainees. A feedback form will be designed and provided by PMU for nominees to submit feedback as well as brief report after training.

Feedbacks and learnings of the participants will be stored as a knowledge document, and will be utilised for future training.

To provide flexibility in identification of training topics and well as resources by PMU, areas of capacity development and resources as examples are being proposed rather prescribing specific training topics and resources. Around these training areas topics must be identified in line with the TNA exercise. The priority areas on which the key stakeholders need to be trained are summarised in **Table 3.7.4.5**.

Table 3.7.4.5 Suggested Areas of Training and Sample Topics

| Areas of Training | Sample Topics | Resource Example |
|--|---|--|
| a) Managerial/ Skill Improvement | Leadership and team player, Personal Effectiveness and Behavioural Skills; Documentation/ writing reports including case studies; Resolving group conflicts and Communications Skills, Financial Management in externally aided projects; Double-accounting system and project accounting; internal audits | ASCI, Hyderabad; NIRDPR, Hyderabad, IIFM, Bhopal IIMs/ XIMB IRMA, Anand NIFM, Faridabad INGAF, GoI |
| b) Technical/ Engineering | Recent Acts and Rules in forestry sector, forest degradation and mitigation measures, integrated watershed management, soil and water conservation methods, Designing and estimation of Engineering structures, Forestry models; Habitat and Wildlife Management, nursery raising, indigenous species and management | CSWCRTI, Dehradun Central Academy for State Forest Service, Coimbatore |
| c) M&E/ MIS, GIS | Project Evaluation and data analysis using statistical tools and techniques; MRV based monitoring, Participatory tools and Community self-monitoring, Social Audits; Community Level Planning and preparing annual plan; MIS software utilities, Remote sensing and GIS application and spatial analysis | ASCI, Hyderabad; NIRDPR, Hyderabad IIFM, Bhopal IIMs/ XIMB IRMA, Anand IIRS/ FSI, Dehradun NRSA, Hyderabad |
| d) Gender | Gender analysis, Approaches and strategies to Gender Mainstreaming and Integration; Human Rights and Gender Based Violence; Gender Awareness, Equality and Advocacy; Gender Responsive Budgeting; Mainstreaming Gender into Leadership and Governance | NIRDPR, Hyderabad GTI, New Delhi |
| e) Environmental and Social Considerations | Project policy and safeguards, National Environmental Policy and Acts, planning and conduction of environmental assessments; environmental monitoring and auditing; cultural and socio-economic environments; Project management with a social consciousness; Protecting the economic livelihood of local communities | PMU/ PMC NIRDPR, Hyderabad E-Learning Course on Managing Environmental and Social Performance by IFC |

Source: JICA Study Team (2017)

vii. Refresher Trainings

Refresher training will also be conducted as per plan. Many times, nominees are not able to attend training due to reasons like sickness or duties for other priorities at work. Also, over a period, new staff may also join the project. Thus, refresher training provides an opportunity to address such needs and to refresh the project processes and learnings for the existing staff.

viii. National/ Outside State Exposure

The exposures will be planned to study and observe good examples and innovations in other states that are financially assisted by JICA as well as to study successful models in projects supported by other donors. Such exposures to the states would provide opportunity to the forest department to interact and coordinate outside forest department and with other line departments as well.

Selection of participants will be coordinated by PMU and done across all levels for each batch to ensure that a mixed group collectively receives the exposure experience, and there is an opportunity to learn and share together as a team. The project circles and divisions will encourage participants to share learnings and experiences with other key stakeholders during project events. A report would be prepared on standard template and submitted by the participants soon after the exposure visits. The experiences and observations documented by the participants would be compiled at PMU along with the photographs/ video clips, and would be utilised as knowledge document, that can be further utilised for training purposes and publications.

ix. Overseas Exposure-cum-Training

Identification of participants for Overseas Exposure-cum-Training would be carefully and rationally done by the PMU considering the performance report as well as contributions made by an individual for project achievements. It must be ensured that the person nominated should have served the project for at least one year, and will not be transferred for at least next 3 years after receiving overseas exposure-cum-training. This would also require that nominated person should remain with more than 5 years of service prior to superannuation.

Overseas knowledge and learning report will be prepared on standard template and submitted by the participants soon after the overseas study tour. The experiences and observations documented by the participants would be compiled at PMU along with the photographs/ video clips, and would be utilised as knowledge document, that can be further utilised for training purposes and publications. The PMU will also organise debriefing workshop to exchange and share learnings and experiences with other key stakeholders.

x. National Workshop

In consultation with JICA, one-time national annual workshop will be organised by PMU during project implementation, inviting key stakeholders from JICA supported projects in India along with key Project Staff and representatives of State/ GOI, other externally-aided project, donor agencies, NGOs etc.

xi. Small Workshops / Seminars

At several stages during project implementation, it would be necessary to have consultations on various generic issues and areas where project may require views, collaborations and for sharing successes and achievements of the project as well. These events would also provide a good opportunity for PMU; 1) to learn lessons and best practice from outside experts, 2) to engage with people with shared interests, 3) to be exposed to new ideas and thinking, 4) to form new partnerships and networks, and 5) to get disseminate messages and project achievements and etc. Such small workshops/ seminars could be organised by PMU once every financial year, if necessary.

(2) “Component 4.2.2: Gender Training”

Gender Training is to be given for all levels of project officers, staffs and GP mobilisers/ ward facilitators. The indicative training outline of the Gender training is given in **Attachment II-3.7.4.2 (b)**. As required, the resource organisations may be engaged especially for FTU coordinator training which is to be done as TOT.

(3) “Component 4.2.3: Environmental and Social Consideration (ESC)”

In order to ensure the Project’s environmental and social safeguards to be effectively operationalised under the proposed institutional arrangement for the Project, certain level of awareness as well as technical capacity is required. The details of the training programme such as venue, time, date, frequency of the proposed training sessions should be further elaborated by ESCS/ESCE and approval of PMU. Programmes are designed for 1) Management/ Administrative Level (PMU/FCCUs), 2) Field/ Operational Level (DMUs FTUs, field level staffs), 3) Community Facilitation and Environmental and Social Assessment for ESC, and 4) Specific Training for Specific Techniques (when necessary). Further detailed indicative training plans are depicted in **Attachment II.3.7.4.5**.

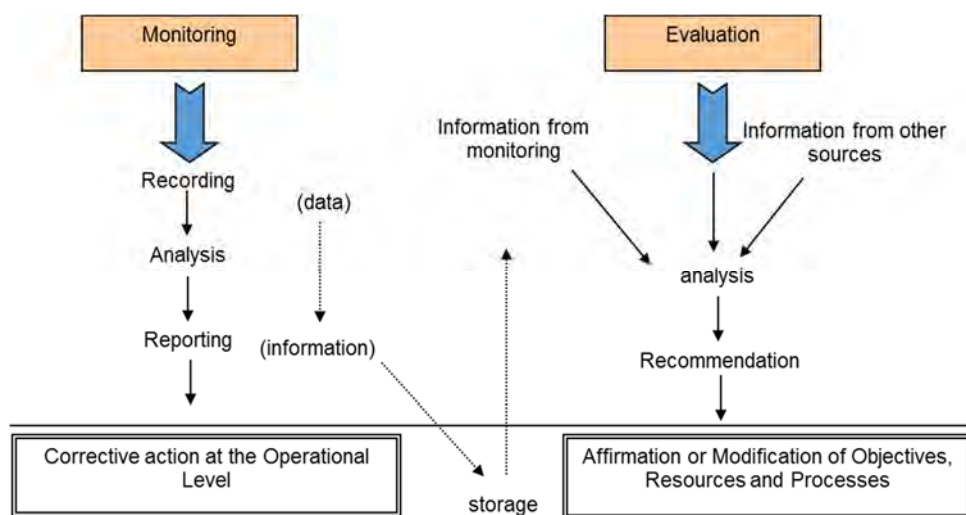
3.7.4.3 “Component 4.3: Monitoring and Evaluation”

(1) “Component 4.3.1: Establishing and Operationalising M&E System”

i. Overview

Project management has the task of establishing sufficient controls over a project to ensure that it stays on track towards the achievement of its objectives. Project implementation is seen as a continuous learning process where experience gathered is analysed and fed back into planning and to update implementation approaches. Sound Monitoring & Evaluation (M&E) systems can support project management to achieve the project results while engaging the stakeholders in understanding project progress and achievements, learnings from doing, and to introduce corrective measures for improving on the overall strategy and operations.

M&E can be effective tools to enhance the quality of project planning and management. Monitoring helps project managers to understand whether the projects are progressing on schedule and to ensure that project inputs, activities, outputs and external factors are proceeding as planned. Evaluation can be a tool to help project managers assess to what extent the projects have achieved the objectives set forth in the project documents.



Source: JICA Study Team, September 2017

Figure 3.7.4.2 Inter-relationship between Monitoring & Evaluation

M&E, integral part of project management, will require adequate resources, including budget, institutional capacity, clear institutional responsibilities, and reporting mechanisms. A system need to be established for data collection at the lowest level of project implementation, and for analysis to provide continuing inputs to the upper management level. It will be important to build capacity and incentives to collect, use, maintain and analyse data for M&E. Project stakeholders involved in M&E also need to possess minimum level of skills to provide such an input.

M&E will emphasise on stakeholder participation, and will be designed to facilitate rapid identification of shortcomings/ problem areas and facilitate mid-term corrections, where necessary, to project design and/ or implementation arrangements to ensure that the Project meets its defined goals and objectives.

The outcome of establishing project level M&E systems should be towards enhancing the institutional capacities and finally adoption of good practices mainstreamed into overall departmental functioning. This would help in sustaining the project interventions beyond the project period. Thus, the Project needs to develop phase-out strategy, and share with HPFD during its implementation, so as to initiate discussion for securing allocation of resources well ahead of the project completion.

ii. Overall M&E Framework

The key assumptions that are made while suggesting the M&E framework and plan are – a) The present project design would be adopted with little or no change; b) State government and FD/ PMU would work in facilitation and capacity building of stakeholders; c) PMU will be made fully responsible for overall project planning and management of the Project; d) Target groups/ stakeholders will be actively involved and play a key role in planning, implementing and O&M of the project interventions; e) Institutional arrangements will be in place to provide mobilisation, planning, capacity building and support to the target groups; and f) Project staff will be willing to use and be receptive to M&E System owned by PMU.

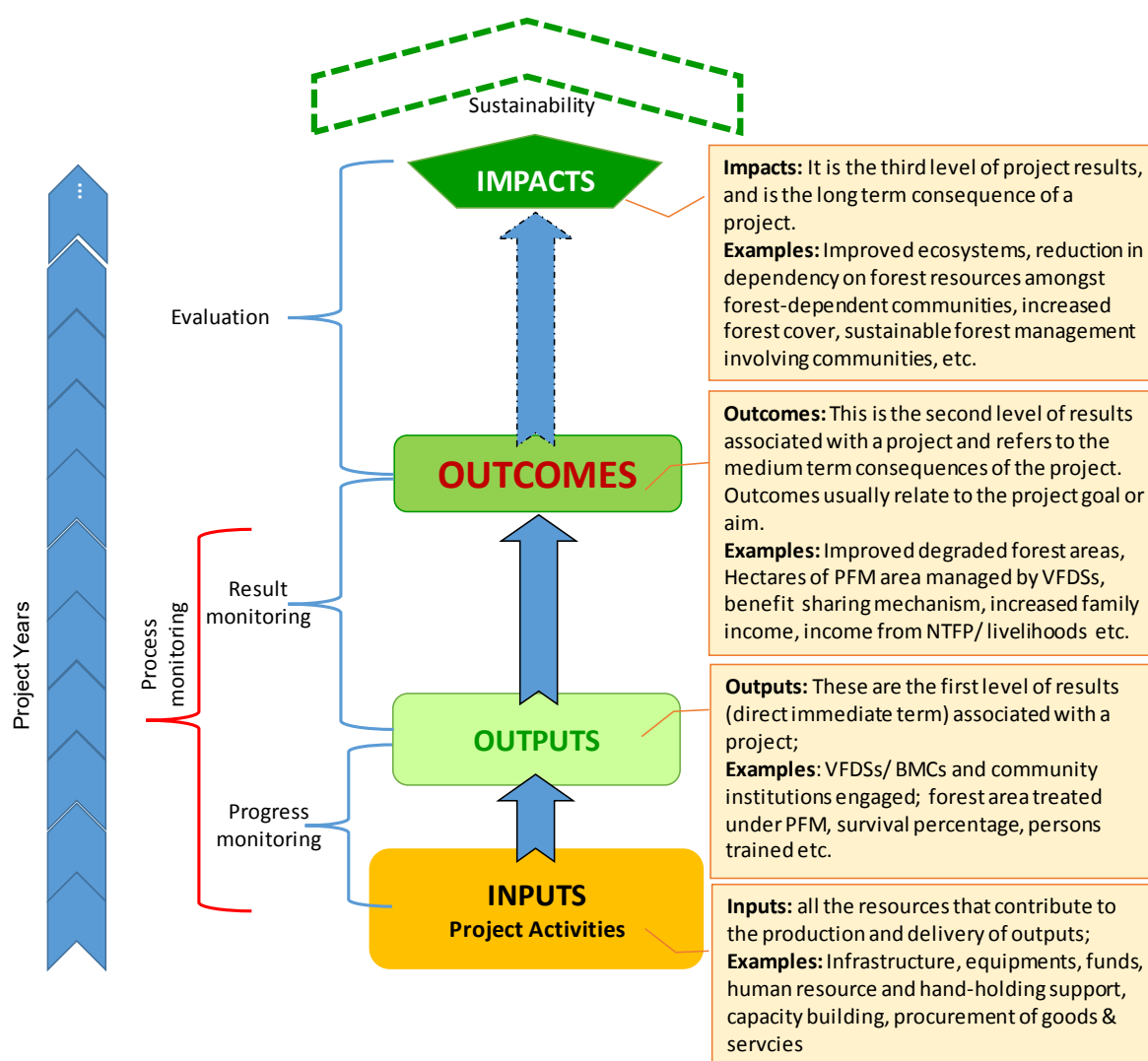
Cost estimates under M&E sub-component provides a basis for operationalising suggested M&E

plan soon after project initiation, and includes costs for addressing capacity development needs of the project staff and institutions responsible for M&E. Based on experience gained during project implementation and field testing, improvement and refinement of the M&E plan could be done, as necessary, to make M&E plan more efficient.

The M&E framework considers the project objectives and goal focused on improving ecosystems resulting in enhanced and sustained flow of ecosystem services to the extent possible. This goal is addressed through efficient and effective biodiversity management, improving quality of degraded forest areas and pastures/ grasslands and by creating livelihoods opportunities for forest dependents while working with identified Gram Panchayats in the priority forest divisions.

There are six key principles on which the M&E framework is suggested viz., transparency, participation, fairness/equity, efficiency, effectiveness and accountability. The framework would have clear distinction between different levels of project objectives and their achievements that need to be monitored and measured throughout the duration of the Project for achieving results. The project logic and causal linkages between different levels of project objectives (project inputs and activities undertaken, direct outputs generated, resultant outcomes due to outputs and project impacts realised consequently) and various assumptions, conditions and risk governing the logical links between successive level of these objectives needs to be systematically analysed and structured in the M&E framework and process.

The framework would help to measure implementation performance in the following three ways: a) Progress monitoring, b) Process monitoring, and c) Results monitoring. The M&E plan will be carefully designed to clearly delineate each of these stages of monitoring. Thus, focus of the project M&E system will be on (i) to track project activities processes and progress, (ii) identify what is working well and what is not, and thus help management for efficient decision making and apply corrective measures during the course of implementation, (iii) evaluate the performance of activities and various institutions, and (iv) estimate project impacts and results on-the-ground and document lessons learned that could be used in future project implementation. The flow chart below illustrates stages and sample indicators that are included in monitoring process:



Source: JICA Survey Team (2017)

Figure 3.7.4.3 Conceptual Monitoring & Evaluation Framework for the Project

Evaluation will build on monitoring data and would be utilised to assess the following aspects:

- Efficiency (Inputs \Rightarrow Outputs),
- Effectiveness (Outputs \Rightarrow Intermediate Outcomes \Rightarrow Final Outcomes);
- Relevance, Impact (Outcomes \Rightarrow Purpose \Rightarrow Goals); and
- Sustainability

Considering the project logical framework, approach for evaluation along with areas for explorations is given in **Table 3.7.4.6**. These evaluation areas need to be further fine-tuned at the time of project implementation.

Table 3.7.4.6 Evaluation Framework for the Project

| Criteria | Evaluation Areas |
|----------------------|---|
| Efficiency | <ul style="list-style-type: none"> - To what extent has the project involved the targeted community institutions and local stakeholders at the village, Gram Panchayat, range/ block and circle/ district level thereby helping strengthen participation and ownership in the delivery of project interventions? - What factors have enabled projects to deliver efficiently on the project objectives? - To what extent have the PFM programme and livelihood promotion has been efficiently managed by GPs with support from implementing partners? - Were activities cost-efficient and were the objectives achieved on time, and in terms of desired quantity and quality? |
| Effectiveness | <ul style="list-style-type: none"> - To what extent has the project been effective (immediate and intermediate outcome levels) in helping reducing degraded forests areas (enriching forests), enhanced flow of ecosystem services, biodiversity conservation, management of assigned forest areas with involvement of community institutions, improved household income levels of target groups through supporting responses to critical gaps, comprehensive and realistic community level planning, strengthening community institutions, improving access to resources and services, and usufructs sharing? - To what extent did the project, informed by situational analysis and policies, focus on the achievement of results, accountability and the measurement of longer term impacts? - To what extent were the objectives achieved or are likely to be achieved? What are the major factors influencing the achievement or non-achievement of the objectives? |
| Relevance/ Impact | <ul style="list-style-type: none"> - To what extent is the project a relevant response to the multi-dimensional aspects of degraded forest areas/ ecosystems, biodiversity conservation, PFM forest management, livelihood opportunities, forest dependent families, weaker sections of the society and women? - To what extent are the activities and outputs of the project consistent with the overall goal and the attainment of its objectives? - What has happened as a result of the project implementation and what real difference has the activity made to the beneficiaries/ target groups? - How many people have been benefitted by the project, and in what way? |
| Sustainability | <ul style="list-style-type: none"> - To what extent did the benefits of a project continue after the funding gets over/ completed? - To what extent the executing agency has owned and adopted the project assets and best practices, and provisioned budgets for extending continued support to the community institutions and infrastructures? - What were the major factors which influenced the achievement or non-achievement of sustainability of the project? |

Source: JICA Study Team (2017)

iii. M&E Arrangements

PMU will regularly monitor and keep record of the physical and financial inputs and outputs of project activities. To facilitate this, PMU will deploy a full-time senior forest officer having relevant experience and skills in monitoring and evaluation, and also acquire required skill and recruit IT professionals having experience in MIS and GIS systems. PMU would procure all relevant resources and would also strengthen existing GIS units of the forest department for the project purpose. During project implementation, main responsibility to manage and analyse data would be with the IT/GIS Cell of the forest department, and such data would be utilised for generating various project reports/ maps.

PMU will coordinate with all institutions according to the institutional arrangements, in monitoring the activities on day-to-day basis. FCCUs would further coordinate with the DMUs/ FTUs to keep track of the project implementation. The representatives from various community institutions will be trained to use simple tools to monitor project progress and impacts, and discuss its implications.

PMU will work to modify existing web-enabled Management Information System (MIS), and would develop the software to meet the requirements of the Project. The modified MIS will be utilised to consolidate and manage primary data reported by various implementing units or received from various other agencies. The MIS software would have a feature to integrate data

with GIS platform for undertaking spatial analysis. PMU will also adopt standard accounting software for fund management and project accounting, and would be customised for generating statement of expenditures at all operational levels viz., PMU and forest divisions/ ranges. Data from MIS will be used to update the operation and effect indicators of the Project to input into the monthly, quarterly, and annual progress reports. Use of GIS and other modern information tools will help collate, compare, analyse, and visualise the information.

Specialists in PMC will assist to review the existing M&E framework for the Project as well as help PMU in establishing proposed M&E system and MIS/ GIS applications for the Project. PMC will also assist PMU in developing measurable indicators (both operation and effect) based on logical framework and protocols including preparing M&E guidelines and reporting formats for the Project, and help in modifying/ redesigning computerised MIS/ GIS facilities for different components of the Project.

iv. Reporting Requirement

PMU will prepare quarterly reports on prescribed reporting structure, and submit to JICA in a timely manner to apprise on the project implementation progress. PMU will also publish annual report along with updated project implementation schedule after getting approval from the Governing Body/ HPC at completion of each fiscal year. The reports will be available both in print forms as well as in digital form, and will also be shared by way of publications and project website to facilitate information dissemination.

PMU will develop templates for both quarterly and annual reporting during first year of project operation. If required, the reporting templates would be shared to obtain concurrence from JICA. These reports will include: (a) physical progress and financial expenditure by components/ sub-components against annual plan along with analysis, photographs and graphs to support claimed achievements; (b) project operation and effect indicators; (c) problems/ constraints encountered during the reporting period, with suggested remedial actions, (d) observation and recommendations of PMC and; (e) updated status on social and environmental safeguard requirements¹⁰ of the Project.

Annual Plan of Operation (APO) will be prepared for each fiscal year. PMU will get the APO approved from GB and HPC preferably by March or by December, as the case may be for each financial year, and would share with JICA for information. PMU will also establish a system of preparing demand responsive annual plans, involving key stakeholders. PMU will provide all necessary guidance and support, and will regularly follow-up with stakeholders to get APO compiled well on time. Preparing demand responsive annual plan would require capacity development of the project staff and institutions at each operational level. PMU will ensure to provide necessary training to all key stakeholders for the purpose. **Table 3.7.4.7** provides key reporting requirement for the Project.

¹⁰ The GoHP vide notification dated 9th September 2002 has constituted a state-level environment impact assessment and monitoring committee for examining/ recommending the cases for clearance and monitoring environment safeguards.

Table 3.7.4.7 Key Reporting Requirement at Various Levels

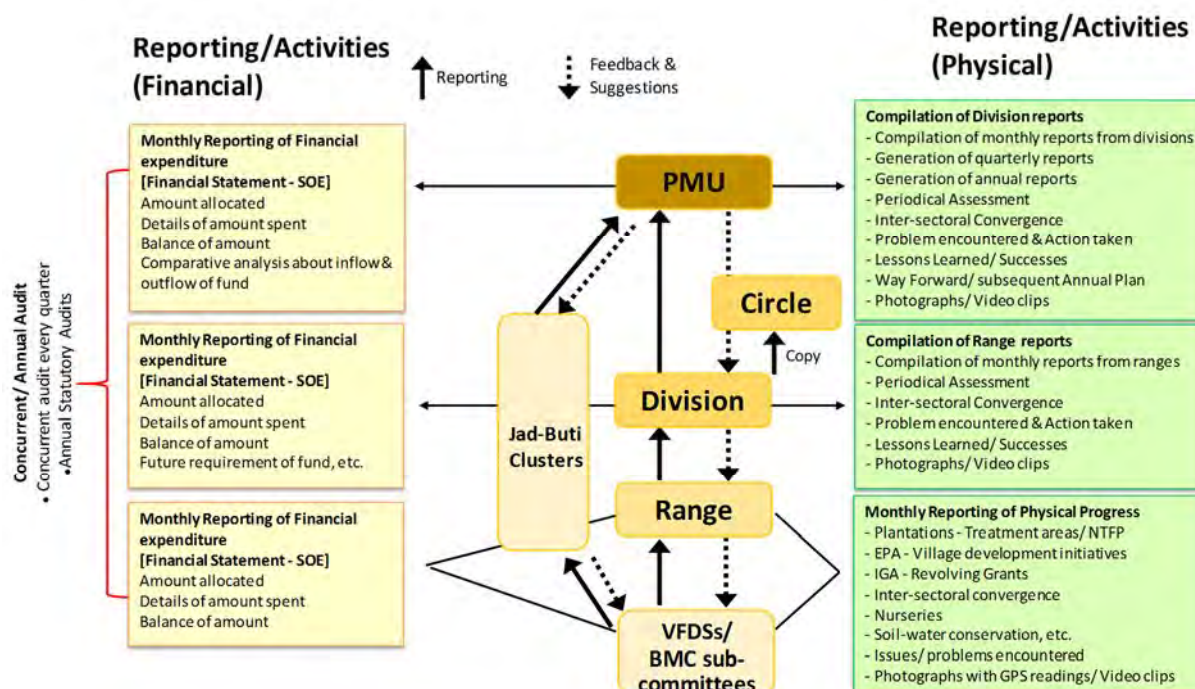
| No. | Type of Report | Responsibility to generate Report | Submission Level | Circulation / User | Remarks/ Likely Contents |
|-----|--------------------------------|-----------------------------------|------------------|--|--|
| 1 | Annual Report | PMU | GB | HPC, State Govt., MOEF/ GOI, JICA, PCCF (M&E), HPFD | <ul style="list-style-type: none"> - Achievement (physical and finance) and status against the annual plan, and reasons for shortfalls, if any - Operation & Effect indicators, Updated Social and Environment Safeguards - Successful cases and innovations - Inter-sectoral Convergence efforts - Lessons learnt and Way forward - Photographs, graphs etc. - To be uploaded on website and kept in public domain |
| 2 | Quarterly Report | PMU | JICA | GB, HPC, JICA, State Govt. (EAP) | <ul style="list-style-type: none"> - Achievement (physical and finance) and status against the annual plan on prescribed format, and reasons for shortfall, if any - Inter-sectoral Convergence efforts - Problems and constraints, and corrective actions/ measures taken - Photographs, graphs etc. |
| 3 | Statement of Expenditure (SOE) | PMU | JICA | JICA/ CAAA, MOEF/ GOI, DEA, State Govt. (EAP) | <ul style="list-style-type: none"> - Reimbursement claims based on financial reporting and consolidated expenses at GPs, forest ranges/ divisions and PMU level, against the annual plan - The SOE to be prepared based on the entries made in the accounting software |
| 4 | Annual Plan of Operation (APO) | PMU | HPC | PMU, project circles, divisions/ ranges, District Admin., PCCF (M&E)/ HPFD | <ul style="list-style-type: none"> - Planning activities as per Overall Implementation Plan (OIP), - Plan for backlog/ delayed activities, and Strategy; - Component-wise and activity-wise fund requirement |
| 5 | Statutory Audit Report | PMU | GB | JICA/ CAAA, MOEF/ GOI, DEA | <ul style="list-style-type: none"> - Confirming the SOEs and eligible portions - Annual Audit Report on standard/ prescribed format |
| 6 | Monthly Reports | Project Division | PMU | Circle | <ul style="list-style-type: none"> - Achievement (physical and finance) and status against the annual plan, and reasons for shortfall, if any - Inter-sectoral Convergence efforts - Problems and constraints - Photographs, graphs etc. |
| 7 | Back-to-Office Report (BTOR) | By visiting officers | as applicable | All concerns | <ul style="list-style-type: none"> - Observations on the project implementation progress vis-à-vis annual plan, identifying the issues/ areas of concern, status on action points etc. |

Source: JICA Study Team (2017)

v. Information Flow

For continuous tracking of project implementation, information and communication system needs to be in place with clear roles and responsibilities, including frequency of data compilation and reporting. It is expected that from range level onwards the information would flow electronically utilising the MIS/ GIS applications and software. Range would be responsible for information compilation as per the frequency of reporting and would transmit to Division, and from there the consolidated information would get transmitted to the circles and PMU. Paper-based reporting could be adopted till the mobile based application is developed and operational for capturing information at the community (GP/ Ward) level. Data compilation and reporting of activities at the community level would be facilitated by Project/ HPFD staff/ outsourced organisations. PMU

would ensure connectivity and required infrastructure/ equipment during the preparatory phase of the Project. The information from lowest operational level to the PMU will be utilised to generate reports indicated in previous section. **Figure 3.7.4.4** illustrates the flow of information and use at different level of operations.



Source: JICA Study Team (2017)

Figure 3.7.4.4 Information Flow and Reporting Arrangement for the Project

To make information generation and reporting efficient, PMU would create systems to address information needs of sectoral heads within PMU as well as for external sharing with other agencies and state/ central governments. Discipline in accessing information from the lower levels will be established to avoid multiple channels for seeking information that may otherwise burden divisions and functionaries below to respond to day-to-day information needs.

vi. M&E System for the Project

The following the M&E system, activities for tracking project progress and performance will be systematically carried out during the project implementation. M&E system will enable the Project to take remedial actions based on the lessons learnt. M&E system for the Project will have key elements grouped into a) Monitoring, b) Impact Assessment, and c) Audits and Transparency, and d) Performance Indicators. PMU would ensure to put the system in place during preparatory phase of the Project and develop M&E guidelines and manual. PMU will also take necessary steps to build capacities of the project staff at all level of operations on M&E aspects. Key elements in the monitoring, impact assessment, audit and transparency and performance indicators are presented in **Attachment II.3.7.4.6**.

A) MONITORING

- Biodiversity Monitoring System (to be covered under Component 2)
- Concurrent Monitoring and Periodic Reviews
- Community Self-monitoring
- Computerised MIS
- Computerised Accounting System
- Technology based Monitoring - GIS applications
- Annual Strategy Planning & Review Workshops

B) IMPACT ASSESSMENT

- Annual Outcome Assessments
- Baseline and Impact Surveys
- Thematic and Short Studies

C) AUDIT AND TRANSPARENCY

- Social Audits
- Statutory Financial Audits
- Concurrent Audits
- Grievance Redressal, Right to Information Act (RTI) and Public Disclosure

D) PERFORMANCE INDICATORS

- Operation and Effect Indicators

(2) "Component 4.3.2: Enhancement and Promotion of MIS / ICT/ GIS"

i. MIS

MIS is very much required for systematic and timely storage of valuable information with respect to the progress of activities. But developing MIS system is a very tedious and time intensive exercise. Also, operationalisation of the systems is another area which requires a lot of time and effort in the form of trainings and capacity building of the staff (specifically field staff) in understanding the system, familiarisation with functionalities and utilising it for timely data recording, reporting etc. Due to this reason, the existing centralised systems shall be strengthened by fulfilling the gaps by adding required modules first rather than developing completely a new system for every scheme/project.

As per the initial review of the existing Integrated Forest Management System (IFMS), it was observed that the present system is dynamic in nature with flexibility of incorporating project specific budget heads and activity details and would cater to the project specific needs (e.g. plantation, maintenance of plantation, pasture and grazing land management, re-afforestation of scrub area, soil conservation measures, construction of boundary pillars, raising of nursery, fire line, etc.).

The following points may be considered while designing the system for the project.

- 1) Account/ Budget Head Master and adding the specific users of respective Divisions/ Ranges covered under the Project into the User Master tables and by mapping 'role' and 'menu' to individual users,
- 2) Presently there is a provision of only uploading/recording single latitude/longitude coordinate for all type of features including plantation sites, which is a polygon/area feature. This feature needs to be modified so that for area features there should be provision to upload/attach a GPS file/ kml of the perimeter extents of plantation areas.
- 3) In IFMS, presently there is no system/ module in place for regular recording of information pertaining to Cluster/ SHG based livelihood/ business activity related data such as name of cluster/group/individual, type of product or livelihood/business activity, production details,

income, contribution/collection, loan amount, loan repayment etc., presently. Under the Project, mobile application would be developed as part of M&E app.

- 4) Provision of recording of details of assets funded under the Project to the community or individuals need to be recorded and a feature would be incorporated in IFMS and the M&E mobile app.

- ii. Mobile Applications for M&E and Near Real Time Incident Reporting

Except for fire alerts through SMS service, presently there is no near real-time system/mechanism of monitoring of forest resources and forest management activities in HPFD. Considering the need to strengthen the M&E system under the Project for recording of consistent and regular quantifiable information of various interventions under the Project, mobile application would be developed with support from the Project that would be linked to the web enabled MIS system through cloud service. Also, there would be features for near real time recording of incidences from the field such as poaching, forest fire, sighting of wild animals etc. Handheld smart phone or Tablets with inbuilt GPS would be used for systematic location based MIS data recording through the mobile apps under JICA project. In principle, the use of M&E mobile application would be limited to the Project but the mobile application upgraded/ developed in the Project shall be further considered for usage by HPFD and their various schemes/projects in better management of forests and their monitoring. This would be helpful in establishing ICT based M&E system in HPFD.

The other benefit of such apps and their integration with web MIS applications is recording of timely and consistent/structured data that would be stored in the mobile apps and would get synched with the server immediately when the user gets the mobile connectivity or wifi so that there would not be a time lag and data loss due to data entry from paper form to digital form.

- iii. Geographical Information System (GIS)/ Mapping

Decision Support System (DSS) Portal Developed by FSI for Various Decisions Making

The Forest Survey of India (FSI) has launched a web-GIS based Decision Support System (DSS)¹¹ in 2014. The objective of the DSS is to provide access to geospatial information pertaining to the forests to enable decision makers to take a well-informed decision using the online facility. Various geospatial data layers, that includes, state and district boundary layers, protected area (PA), tiger reserves (TR), tiger corridors, forest cover map and its time series layer (FCM), forest type map (FTM), biological richness (BR), landscape integrity (LI), net present value (NPV), hydrological layer, recorded forest area and recorded forest administrative boundary. All heads of the state forest departments and MoEF & CC have been provided access to the system through a user ID and password. It is recommended that it may be utilised at the HQ level.

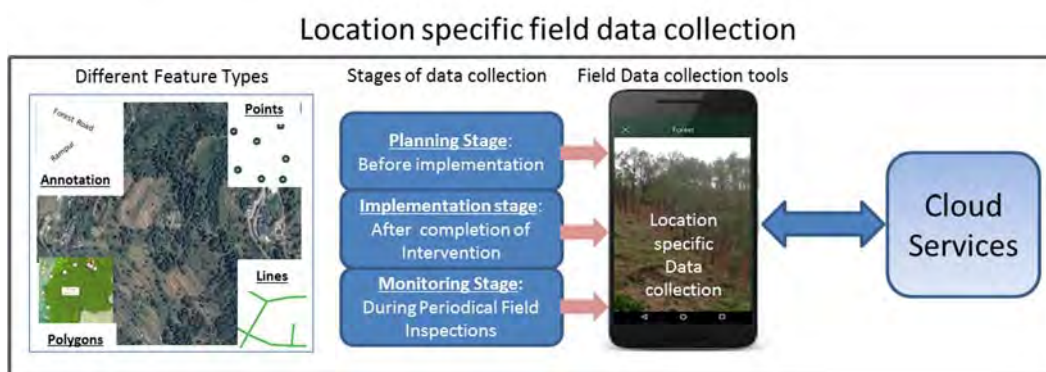
¹¹ www.fsigeoportal.gov.in/fsidss2

Use of Open Source Software at Field Level

The benefit of use of open source software/technology is that there is no licensing cost attached to it in comparison to the commercially available software, which are extremely costly. Moreover, such open source software provides all the features and capabilities required to perform the tasks with the same amount of accuracy and precision and their up gradation to higher versions are also completely free of cost. Quantum GIS, or popularly known as QGIS, comes with an inbuilt feature and plug-ins for various high end GIS operations as well. Through an option of Web Map Service (WMS), open layers, bhuvan WMS layers, google images and google maps etc can be pulled into the desktop QGIS. Thus, during the project the staff of range and division level shall be trained on QGIS software for GIS data layer updating, new data layers creation from field data and data analysis purposes as part of planning and monitoring tool. Using QGIS Server capabilities HPFD/Project can setup its own WMS on the existing HPFD's server and provide the access of key GIS data layers to HPFD staff through QGIS Server. This data can be accessed from desktop QGIS software through web by calling the HPFD's server and pull the data for visualisation and analysis.

Field Survey and Location Specific Data Collection

All project interventions in the field having location specific spatial properties would be surveyed in the field using GPS enabled handheld devices/smart phone pre-loaded with mobile app for M&E. The survey data would be collected during planning stage as well as immediately after activity is completed for individual site and assets. Site specific monitoring reports may also be generated by collecting site locations visited and the observations recorded for the site. The schematic representation of the stages of field data collection for project implementation activities is illustrated in **Figure 3.7.4.5**.



Source: JICA Study Team (2017)

Figure 3.7.4.5 Image of Location Specific Field Data Collection

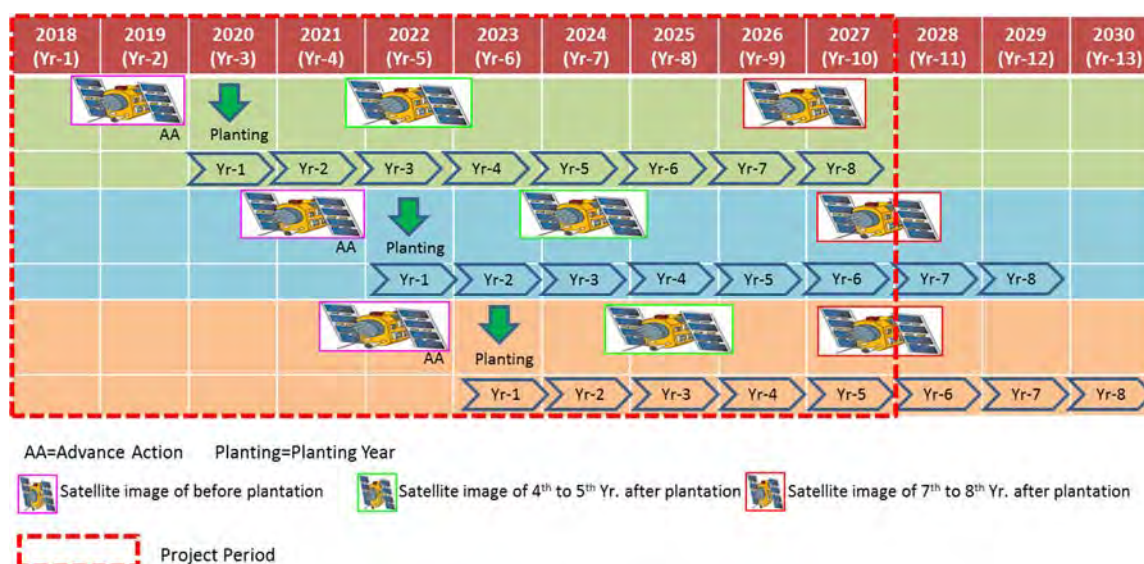
Handheld smart phones or tablets with inbuilt GPS would be used for systematic location based data recording for area/polygon based features such as plantation sites (through perimeter survey), community/individual assets and soil conservation measures (point location survey), and linear feature type (as line linear) through the mobile application under the Project. Before uploading the data, user would be required to also capture site photo as well and the associated information

to be linked with the feature in systematic and structured manner. The data would be kept on a cloud service for automatically data sync between the server and the user’s smart phone.

The same application would also be used for periodical field assessment /site inspection. The user would be required to systematically record the site location and the observations for respective type of feature.

Satellite based Monitoring of Forest Resources

Satellite based monitoring of forest resources is being conducted by FSI on bi-annual basis. The resolution of satellite images used by FSI is 23.5 meters and is useful to monitor state or country level monitoring. For the Project, high resolution satellite image based monitoring of project areas would be beneficial in detailed assessment/monitoring of plantation and protection sites and the forest resource within project areas. It is recommended that IRS¹² Resourcesat-2 LISS-IV Mx¹³ data at 5.8 meters spatial resolution (or comparable) may be procured for periodical assessment and monitoring of project areas using in house capacity with HPFD’s IT lab and GIS staff of PMU.



Source: JICA Study Team (2017)

Figure 3.7.4.6 Indicative Satellite Images Procurement Schedule

In principle, satellite images would be procured during three stages (**Figure 3.7.4.6**).

1. Before plantation (1st Year) as baseline data
2. Between 2nd to 4th Year after plantation year
3. Between 5th to 8th Year after planting year

Since the Project would be implemented in three batches, thus for each batch, a set of satellite images need to be procured depending upon the respective planting year. During the project duration, satellite based assessment of changes in the project areas would be conducted by comparing changes among 1st year (i.e., before project situation) to 2nd-4th year and 5th-8th year (i.e., after project intervention).

¹² Indian Remote Sensing Satellite

¹³ Multi spectral

iv. Video Conferencing between HQ and Field Offices

For ease of day to day functioning of the Project/schemes and better coordination and monitoring from the headquarter with the field offices, one of the efficient mechanism is to avail the facility of video conferencing. It is not only one of the faster and efficient modes of real time communication but also save travel time for periodical meetings and is cost effective as well. The scope of Himachal State Wide Area Network (HIMSWAN) project, developed by the Department of Information Technology (DIT), HP state government, is to provide connectivity to government offices up to block headquarters in HP. Himachal State Wide Area Network (HIMSWAN) has been designed in such a way that it is expandable in future vertically (i.e. down to the Panchayat/village level) to cover Common Service Centres (CSCs) and horizontally (i.e. all offices/locations within the same location). Presently the service is available till district headquarter level. HPFD is also developing its own video conferencing facility using HIMSWAN network till circle levels.

National Informatics Centre (NIC) has also set up 18 high definition video conferencing studios in HP. Facility is available at state centre, all district headquarters and 4 tribal sub-divisions.

During the Project, 'existing' video conferencing facilities would be utilised for better coordination with field offices and monitoring purposes as well as for distance learning programmes.

v. Project Website

Project website shall be developed as part of ICT for information sharing about the project goal, objectives, project area, components and activities for wider publicity purpose. The website need to be dynamic in nature and the content should be regularly updated with details regarding the periodical project progress, success stories and other key information. There would be weblinks to web enabled IFMS applications from the project website. Project website development has been also described in this section hereunder from the publicity point of view.

vi. Data Security and Backup

Data security is one of the important aspects of IT. It is important to take a periodical backup of the data at a designated server. The State IT policy¹⁴ recommend use of common IT Infrastructure available with the State Data Centre (SDC) and use the available infrastructure with SDC at DIT for hosting software applications and database etc. The existing Forest Management Information System (FMIS) of HPFD is already hosted on the server of the DIT and database is also kept in the DIT servers. It is recommended that the latest version of spatial GIS data layers must be systematically arranged and kept in one of the high-end workstations of IT Cell and periodically take a backup of its data in the 'existing' server of HPFD or of DIT.

On the workstations and desktops, antivirus software would be installed for data security purpose and protection from malware.

¹⁴ Office Manual, Government of Himachal Pradesh, Third edition, April 2011

vii. Training

Not only for development but also for operationalisation and institutionalisation of ICT based system also require significant efforts and time. Thus well-structured training modules and intensive trainings become very important. Under the JICA project primary focus of the hands on trainings related to ICT would be to train the field staff of HPFD and the project staff in understanding various features/functionalities and capabilities of the systems and mobile apps (including IFMS) and their usage. Staff from divisions and HQ shall also be trained. Easy to understand training material with pictorial representation along with Video based training material would be developed in local language for MIS, mobile apps, survey methodology and key features/ functional aspects of open source GIS software (QGIS) etc.

(3) "Component 4.3.3: Communication/ Publicity"

Publicity and publications would be very important for creating awareness environment as well as for sharing knowledge and information. These elements would form the means for external communication and to make sure that outputs, results, and best practices are shared outside and the stakeholders. PMU will also ensure that the publications are disseminated to all stakeholders in an effective manner.

Flexibility will be with the PMU to plan and execute the activities aligned with the project progress and requirements. The following activities would be planned under the sub-component.

i. Newsletter

In-house Quarterly Newsletter will be published by PMU both in Hindi and English languages. Content and material for the Newsletter would be developed and coordinated in-house by PMU. The newsletter will become the means to share project achievements, key events, cases/ stories, poems and community views and action photographs observed during a quarter.

ii. Short Films

Film is one of the powerful means for expression and awareness creation. Short films/ documentaries could also be prepared during the course of implementation to feature successes and key thematic processes of the Project.

iii. Publicity Events

PMU will encourage the direct beneficiaries and community institutions to participate in various exhibitions and *melas* (both within state and well as outside state) to display and sell products. Project will support for the participation and hiring of stalls/ space in such events.

iv. Website Development

The website of the Project will be developed to disseminate and share the project details and achievements. Website will also be utilised for real time disclosure of information for enhanced transparency. The reports/ knowledge material published by the Project will be available in digital form as well, and will be shared through the project website to facilitate further information dissemination. The website would serve as means to minimise the use of paper, and aligning with the digital initiatives by the GoI.

The website would be developed to feature the following – photographs and videos, articles and messages, GIS based interactive maps, MIS reports, advertisement and notices, banners, reports and plans, budget and expenditure statements, featured links, comments, page to communicate with the project authorities and registering grievances, FAQs, surveys, newsletters and snapshots of project progress etc.

PMU will be responsible for the task of website design, development and maintenance that could be outsourced to a competent agency, if required.

v. Publications

Publications would be useful to document knowledge material and progress/ results of the Project. Some of the periodic and regular publications would be annual report and APO, quarterly reports, project guidelines & manuals/ handbook, successful cases and stories, paper/ articles, project fliers, IEC material and project registers etc.

3.7.4.4 “Component 4.4: Research”

(1) “Component 4.4.1: Basic Study for Strengthening of ICT at HPFD”

MIS, GIS and other ICT related activities and their outputs to be produced under the Project are expected to be expanded and to be utilised at entire HPFD. Such transfer of project’s assets and resources to entire HPFD is planned to be conducted at the Phase-out phase of the Project and onward. However, in order to make such transition more effectively and to be adopted and retained by the entire HPFD, a study which enable trial usages of project MIS/GIS/ICT in non-project divisions and preparation of an improvement plan to reflect lessons from the trail usages shall be carried out. The study is intended to find out i) existing project GIS/MIS/ICT, and to lay out the procedures and visions ii) for future usages by the entire HPFD. This study shall be initiated in the middle of the project period after the project GIS/MIS/ICT are developed and used for at least one year. The following are key activities to be covered in this study. The actual trail can be conducted by officers/staff of selected divisions, but overall conduct of the study shall be outsourced to concerned subject matter specialists or organisations.

- ◆ Trial application of the project GIS/ MIS /Mobile Applications and other developed ICT methodologies in non-Project divisions (at least one division each from territorial divisions and wildlife divisions) for at least one year.
- ◆ Results of the trial applications in non-project divisions to be analysed and developed as the improvement plans.
- ◆ Of the content of the improvement plans, whatever applicable and advantageous for the project implementation to be reflected and the project GIS/MIS/ICT to be updated (mainly by the concerned staffs/ specialists of PMU).
- ◆ Improvements for expanding the project based systems to entire HPFD to be further elaborated as phase-out/ sustainability mechanism plan.

The preliminary TOR is attached in **Attachment II.3.7.4.7**.

3.7.4.5 “Component 4.5: PMC”

The objective of the consulting service is to provide the technical and managerial assistance to PMU of the Project. PMC team, composed of international and national experts, shall be proposed to bring in the global perspectives and to provide technical and managerial back stopping. The process of procurement shall follow the JICA guideline for procurement of consultants and through international competitive bidding. Unlike preceding JICA assisted forestry sector project, the project is planned in much more structured way which is similar to technical cooperation projects of JICA. This demands project management based on the detailed work plan supported by the enhanced monitoring & evaluation system. Thus, the team leader shall be familiar with the JICA technical cooperation projects. The duration of PMC is scheduled for 36 months starting from the beginning of the second year of the Project. PMC shall be proposed to be based in Shimla or project headquarters to interact with PMU as well as the HPFD PCCF office. The time required for procurement of PMC shall be between 6 to 12 months. The indicative TOR of PMC is attached in **Attachment II.3.7.4.8**.

Table 3.7.4.8 Indicative PMC Team Compositions

| International | National |
|--|---|
| <ul style="list-style-type: none"> - Soil Water Conservation/ Construction Management | <ul style="list-style-type: none"> - Team Leader/ Project Management/ Community Based Sustainable Forest Management & Biodiversity Management - Co-Team Leader/ Community Development - Biodiversity Conservation - Pasture Management - M&E/ MIS - Remote Sensing/ GIS - Institutional Capacity Building and Training - Environmental and Social Consideration/ Environmental Economics/ PES |

Source: JICA Study Team (2017)

3.7.4.6 “Component 4.6: Phase-out/ Sustainability Mechanism”

The following key activities are considered for this component under the Project.

4.6.1 Implementing Agency

4.6.1.1 Preparation of Phase-Out/ Sustainability Mechanism Plan

4.6.1.2 Transfer of Assets and Resources

4.6.2 Community based Organisations (CBOs)

4.6.2.1 Preparation of Phase-Out/ Sustainability Mechanism Plan

4.6.2.2 Revisiting of FEMP and CD&LIP

4.6.2.3 Phase-Out Training

4.6.3 FEMP/ CBMP Fund

Indicative descriptions are provided hereunder.

(1) “Component 4.6.1: Implementing Agency”

i. “Component 4.6.1.1: Preparation of Phase-Out/ Sustainability Mechanism Plan”

Although the institutional capacity development would be an integral part of the Phase-Out/ Sustainability Mechanism activities, the Project would also take the following actions (component 4.6.1.2) to further ensure the sustainability of the project impacts and continuity of activities by HPFD. The phase out/ sustainability mechanism plans to be prepared for the society (PMU).

ii. “Component 4.6.1.2: Transfer of Assets and Resources”

It is important to undertake the asset inventory created at all levels with the project funds. Such assets will be transferred to the responsible institutions/ agencies for the operation and maintenance in the post project period. As per the memorandum of association, the PMU of the Project will close its operation after the transfer of the assets and completion of all the necessary formalities.

(2) “Component 4.6.2: Community Based Organisations”

i. “Component 4.6.2.1: Preparation of Phase-Out/ Sustainability Mechanism Plan”

Similarly to that of the implementing agency (PMU), Phase-Out/ Sustainability Mechanism Plan will be prepared for the concerned community level organisations and the following actions (components 4.6.2.2 and 4.6.2.3) to further ensure the sustainability of the project impacts and continuity of activities by community implementation organisations.

ii. “Component 4.6.2.2: Revisiting of FEMP/ CBMP and CD&LIP”

FEMP/ CBMP and CD&LIP will also be revisited and reinforcement of the capacity of the community level organisations for planning, networking and fund raising process shall be undertaken. This shall be planned during 4th year after the formation of the community level organisations by the Project. The aim of this is to enable such organisations to continue the community level planning process beyond the project period.

iii. “Component 4.6.2.3: Phase-Out Training”

Phase out training of the community implementation organisations will give an opportunity to reconfirm the process of planning, record keeping, process of convergence, organisational management, etc. The programme will be developed by PMU and each community implementation organisation shall be trained.

(3) “Component 4.6.3: FEMP/ CBMP Fund”

As to enhance sustainability of the VFDS and BMC, FEMP/ CBMP Fund shall be parked at VFDS or BMC, which they would utilise to implement activities for sustainable forest ecosystem management and community based biodiversity management. 180,000 INR per VFDS or BMC sub-committee shall be budgeted for.

i. “Component 4.6.3.1: Preparation of Operation Manual of FEMP/ CBMP Fund”

The manual on how to utilise the FEMP/ CBMP Fund shall be prepared by PMU prior to the phase-out training and revisiting of FEMP/ CBMP Plans. The manuals shall be designed to ensure transparency and sustainability of the fund.

ii. “Component 4.6.3.2: Transfer of FEMP/ CBMP Fund”

The fund shall be released to VFDS/ BMC as they complete the revisiting of the FEMP/ CBMPs and phase out training.

CHAPTER 4 PROPOSED INSTITUTIONAL FRAMEWORK

4.1 Analysis of Institutional Arrangements and Options

4.1.1 Historical Transactions of HPFD under PFM Initiatives and Analysis of PFM Institutionalization

The HP state, and HPFD in particular, have experienced over three decades by now of implementing Externally Aided Projects (EAPs) adopting joint/ participatory forest management approach. A snapshot of the participatory forest management (PFM) initiatives undertaken in HPFD is presented in **Part I Section 4.6.3** of this report.

People's participation got initiated with the launch of first externally aided Indo-German project in Dhauladhar mountain ranges (1980-1989) to develop forest resources and to meet demand for fuel, fodder and small timber. Being recognized as the best agents of change in mountain system, the Village Development Committees (VDCs) involving village communities were created. The State of Environment Report (SoER), HP prepared during Tenth Five Year Plan period documents that "no government department recognized these projects created institutions, including HPFD – the key stakeholder in the Project, and so they eventually became defunct after the project ended".

The National Social Forestry (Umbrella) Project (1985-1993) made efforts to form Village Forest Development Committees (VFDCs) that had a representation of one woman from Mahila Mandal, one representative from Scheduled Castes, and one from GP, but could not ensure active participation of an entire village community as the plans were primarily made by ex-officio member secretary of VFDC who represented HPFD, and thus could not fully gain community ownership. With the closure of the project in 1993, these committees also stopped working.

The JFM approach formally got introduced in year 1993 through a JFM notification issued by the HP state government, and first piloted in the Indo-German Changar Eco-development Project: 1993-1999 (Phase-I) and 1999-2006 (Phase-II) both supported by GTZ. The Project attempted two models/ approach – direct implementation by creating a sort of parallel structure as well as by integration of VFDCs with Panchayati Raj Institutions (PRIs). The second approach has evolved as more promising for decentralized power and funding, as well as for having better chances for its long-term continuity, and later has been adopted in other upcoming projects.

HPFD has experienced implementing the National Afforestation Project (NAP) by establishing Forest Development Agencies (FDAs) at division level as registered societies, while JFMCs were formed and registered with the FDAs. All such FDAs were federated with the State FDA.

4.1.2 Way Forward for Evolving Institutional Set-up under the Project

Following the recommendations of the Forest Sector Review (FSR) that was undertaken in year 2000 by International Institute for Environment and Development (IIED) in collaboration with HPFD, it would be foremost and key step to further strengthen “the HP Forest Consultative Forum” which has been already established, and could serve as central forum involving multi-stakeholders not only for taking forward the agenda of sustainable management of ‘ecosystems’ while responsibly drawing its benefits, but also for operationalizing other recommendations of FSR to ensure greater internalization of shared vision of the Sustainable Forest Management (SFM) based on participatory policy processes. This forum is envisaged for enabling both ‘horizontal’ coordination – strategic coherence between sectors, and ‘vertical’ coordination – linking villages to the centre in terms of improving both policy and its implementations.

Since, economic and rural livelihoods in and around forests as well as village areas are concern of the government through its departments including HPFD, it has been well realized in the FSR (2000) document that there is a need of greater “inter-sectoral coherence and coordination between departments both at the state level and at the community level” to support the initiatives in effective and workable manner. Further, more emphasis has been given on evolving Criteria and Indicators (C&I) for SFM through consultative process to be utilized for continuous monitoring and environmental impact assessments of activities that might impact forests as well as ecosystems.

For the furtherance of PFM, the HP state government has already shown its full commitment to JFM principles by issuing “HP PFM Regulations 2001”. Under this regulation, the funds are provided directly to the “Village Forest Development Societies (VFDS)” registered under the Societies Registration Act, 1860 for carrying out the micro-plan activities. Now, HP has its own “HP Societies Registration Act, 2006” that came into force on 20th October 2006, and newly formed VFDSs are registered under 2006 Act.

The state funded, *Sanjhi Van Yojna* introduced from year 1998 is to be implemented through VFDS. Falling in line with the government intentions and policies, and the recommendations of the FSR (2000), it would be imperative to create and strengthen the community level institutions adopting PFM 2001 Rules, that holds good promise not only to fulfil local needs from the forests but for contributing to production of state, national and global forest values as well.

For furtherance of the forest values it would be important to restore and regenerate the natural ecology and enrich the degraded areas as well as enhance quality of forests in harmony with the ecosystems. Thus, the capacity-building and empowerment of the community institutions have to be well conceived, effective and technically backed-up. This would require to make sufficient investments for continuously improving the quality and quantity of public forest assets and to evolve better systems for protected areas management as well as biodiversity conservation outside protected areas while recognizing indigenous knowledge and cultural values.

Now HPFD has to broaden its implementation approach and orient the organizational set-ups more to “capitalize its rich knowledge and experiences for playing enabling role and extending support” as well as “working on comprehensive strategies to produce forests goods and services efficiently”. The opinion about the enabling role of HPFD is to ensure technical guidance and advices, facilitation and monitoring, ensuring safeguards and regulation, etc. Investments will have to be made for organisational capacity development as well to work in partnerships with institutions that get involved in SFM, and to bring about attitudinal change to absorb PFM concepts at the implementation level. The approaches need to be institutionalized to sustainably realize environmental and social benefits.

In an effort to strengthen institutions, the importance of **transparent share of information** cannot be discounted. The critical levels where the information need is most for site specific planning and decision making is Panchayat/ village and range level, and these levels are the most neglected once because of limited investment that often gets consumed either at the state or division/ district levels. Thus, adequate attention has to be laid on developing robust, cost-effective and user-friendly communication and information system.

4.1.3 Options Considered for Institutional Arrangement for the Project.

Considering various factors and past experiences of HPFD in implementing different externally aided projects, the following options for evolving institutional arrangements of the Project is worked out by the Study Team.

- ◆ Option-1: Departmental mode
- ◆ Option-2: Society mode through SFDA (State Forest Development Agency)
- ◆ Option-3: Society mode (conventional forestry loan project)
- ◆ Option-4: Society mode (with district coordination units)
- ◆ Option-5: Society mode (with circle coordination units)

Details of each option as well as suggestions are provided in **Table 4.1.1**.

Table 4.1.1 Comparison of Institutional Arrangement Options and Recommendation

| Levels | Option-1: Departmental mode | Option-2: Society mode through SFDA | Option-3: Society mode (conventional forestry loan project) | Option-4: Society mode (with district coordination units) | Option-5: Society mode (with circle coordination units) |
|--------|---|--|---|---|---|
| State | Utilize existing FD structure by creating dedicated unit within FD | Utilize SFDA as executing agency, a registered autonomous society | Creation of autonomous society within FD, registered under HP Societies Registration Act, 2006 for project implementation | Same as option-3 | Same as option-3 |
| | Implications: The project unit may not get full authority for quick decision making and fund flows. It may be implemented as any other scheme/ programme being implemented by | Implications: The purpose for which SFDA has been created may vary from the project's requirements, and composition may not be | Implications: Well demonstrated and efficient mechanism for JICA assisted projects; the autonomous structure ensures accountability and responsibility that rests with dedicated teams, smooth fund flow and timely release | | |

| Levels | Option-1: Departmental mode | Option-2: Society mode through SFDA | Option-3: Society mode (conventional forestry loan project) | Option-4: Society mode (with district coordination units) | Option-5: Society mode (with circle coordination units) |
|-----------------|---|--|---|--|---|
| | the FD. Fund flows may not be smooth. | suitable for efficient management and decision making in the Project | of funds as per plans, quick decision making, follow-up and timely submission of reimbursement claims. | | |
| Circle | As per departmental line of command | No direct role of circles | Circles will be involved and strengthened for supervision and reviews as per the departmental line of command. | Same as option-3 | Circle level Project Coordination Unit (CPCU) to be created under Conservator in-charge forest circle. DFO (HQ) to be the Member Secretary. |
| | Implications: To be implemented along with other schemes/ programme that may result in lesser focus / priorities for the project interventions. | Implications: May receive lesser focus / priorities for the project interventions. | Implications: This would be in synergy with the departmental functioning within the circle jurisdiction. Strengthening would be done to make them responsible and pay focused attention on project implementation. They would be member in the General Body of the Society created for the Project. | | Implications: Dedicated staff under direct control of the circle will be deployed and capacitated to work on the project priorities and guide, supervise and follow-ups with the divisions as well as Support agencies. This unit will monitor the project works as well as coordinate at district for inter-sectoral linkages. |
| Division | As per departmental line of command | Project to be implemented through existing FDAs, a registered autonomous society | Separate unit with the divisional office will be created and strengthened for the project implementation. | Separate unit at the district level will be created and strengthened for the project implementation. | Separate unit at the division level – Divisional Project Management Unit (DPMU) will be created and strengthened for the project implementation. ACF rank officer to be the Nodal officer. |
| | Implications: Dedicated staff may not be deployed and may result in lesser focus / priorities for the project interventions. | Implications: The policies that governs FDA operations may be in conflict with the norms and requirements of the Project. This may adversely impact project implementation and results. Dedicated staff may not be deployed and may result in lesser focus / priorities for the project interventions. | Implications: Dedicated staff will be deployed and capacitated to work on the project priorities and ensure guidance, supervision and follow-ups with the range as well as Support agencies. | Implications: Dedicated staff under direct control of the PMU will be deployed and capacitated to work on the project priorities and guide, supervise and follow-ups with the divisions as well as Support agencies. This unit will monitor the project works as well as coordinate at district for inter-sectoral linkages. | Implications: Dedicated staff under direct control of the division will be deployed and capacitated to work on the project priorities and guide, supervise and follow-ups with the ranges as well as Support agencies. This unit will monitor the project works as well as coordinate at district for inter-sectoral linkages. |
| Range | As per departmental line of command | As per departmental line of command | Separate unit with the range office will be created and strengthened for the project | Field Technical Unit will be set-up to facilitate the processes and support range and | Range Project Management Unit (RPMU) will be set-up to facilitate the processes. |

| Levels | Option-1: Departmental mode | Option-2: Society mode through SFDA | Option-3: Society mode (conventional forestry loan project) | Option-4: Society mode (with district coordination units) | Option-5: Society mode (with circle coordination units) |
|-------------------|--|---|--|---|---|
| | | | implementation. | community level implementation | |
| | Implications: -ditto- | Implications: May receive lesser focus / priorities for the project interventions. | Implications: Dedicated staff will be deployed and capacitated to work on the project priorities and ensure close coordination at the GP/ community level through FMU/ range offices. | Implications: Dedicated staff under direct control of the PMU/ FCCU will be deployed and capacitated to work on the project priorities and ensure close coordination with the Range as well as the GP/ community level. | Implications: Dedicated staff under direct control of the range will be deployed and capacitated to work on the project priorities and ensure close coordination with the Range as well as the GP/ community level. |
| GP/Village | GP or JFMC institutions could be engaged for implementations | JFMC registered with FDAs | Following the PFM Regulations, 2001 VFDS institutions would be created or existing VFDS would be strengthened. | Same as option-3 | Same as option-3 |
| | Implications: The community institution may confuse it with on-going state programme – <i>Sanjhi Van Yojna</i> , and project may not get desired visibility and attention. | Implications: Since, the JFMC do not have recognized legal status, thus may not be appropriate to handle revolving funds received as grants in the project to support SGHs for livelihood interventions | Implications: These community institutions fall in line with the state policy, and are being created under on-going state programme – <i>Sanjhi Van Yojna</i> . Such institution would be linked with the GP through some arrangements wherein GP would be made responsible for approvals of the micro-plans and constitution of the Society members by calling Gram Sabha meeting. Such institutions may have high probability to sustain beyond project life as they fall under the existing policy framework. | | |
| Suggestion | Not Suggested | Not Suggested | Suggested (Priority C) | Highly Suggested (Priority A) | Moderately Suggested (Priority B) |
| | Not so effective and efficient from the “project” implementation point of view. | Not so effective and efficient from the “project” implementation point of view. | The society mode which is widely practiced in the other states. Since DMUs /FMUs and most of their staff are involved at part-time basis to the Project, effectivity and efficiency from the “project” implementation point of view is less compared to Options 4 and 5. | Having full time personnel/ units at district and range levels, the Project can attain more effectivity and efficiency for reporting, coordination, and fund flow with the project. Having district level units is advantages in district level convergence with other departments. | Similar advantages to the Option 4. However, circle coordination units to be proposed instead of district coordination unit, reflecting the existence of circle level offices within HPFD. District level convergence may be less effective/ efficient compare to Option 4. |

Source: JICA Study Team (2017)

The JICA Study Team suggested the following options as priority options to be further considered for the proposed project.

- ◆ Priority A: Option 4
- ◆ Priority B: Option 5
- ◆ Priority C: Option 3

Indicative institutional arrangements for Options 4, 5, and 3 are described in **Attachment II.4.1.1.**

4.1.4 Further Consideration for Priority Institutional Arrangements

A series of discussions were done between HPFD and the Study Team for the priority options indicated above, and priority A (Option 4) was considered as the priority institutional arrangement to work further for the Project. The Option 4 has been subdivided into two options for further examination

- ◆ Option 4a: Transfer of fund to divisions directly from PMU to the project divisions by way of advice from ‘Forest Circle Coordination Unit (FCCU)’
- ◆ Option 4b: Engaging Gram Panchayats instead of VFDS (Others as same as Option 4a)

As per the HP PFM Regulations 2001, VFDS is the institution to work on participatory forest management. Recently, under externally aided projects, HPFD has engaged the Gram Panchayats at implementation level and experienced better results in terms of ownership, minimization of conflicts and sustainability of institution. It appears that the PFM Regulations has now diminishing relevance, as the state funded *Sanjhi Van Yojna* designed following the PFM Regulations has limited performance (dormant or inactive: **Part 1 Section 4.6.3**). Thus, weighing the experiences of HPFD with the community institutions in the state and the recent impact assessment studies sponsored by JICA in forestry sector projects in India, it would be most appropriate to engage and strengthen Gram Panchayats.

The JICA impact study reports highlighted that there may be certain compliances required for autonomous registered institutions, and if not adequately and timely addressed may attract certain penalties. In the state, VFDS is autonomous institution registered under HP Societies Registration Act 2006, and the current capacities of VFDS is not adequate. Even sustainability and effectiveness of such institution is in question.

In consideration of the above, the practical option to work with the communities is Gram Panchayat. Justification of considering Gram Panchayat has been further provided in **Attachment II.4.1.2.**

Thus, under given conditions, it is evaluated that suitable and workable institutional arrangement that would sustain even beyond the project life would be the option 4b.

The option 4b provides an opportunity to strengthen not only the departmental structure and functioning, but also gives due focus to strengthen the Gram Panchayats and to build social capital. Furthermore, though the option 4b does not adopt VFDS as the community level

implementing unit, the option 4b enables to comply with essences of the PFM Regulations which is better understood by HPFD and its officers.

HPFD and the study team had the consensus that the option 4b to be the most realistic option among the considered options for the project implementation and the institutional arrangements based on the option 4b has been incorporated in the Interim Report of the study in September 2017. The description of the institutional arrangements based on the option 4b is presented in **Attachment II.4.1.3.**

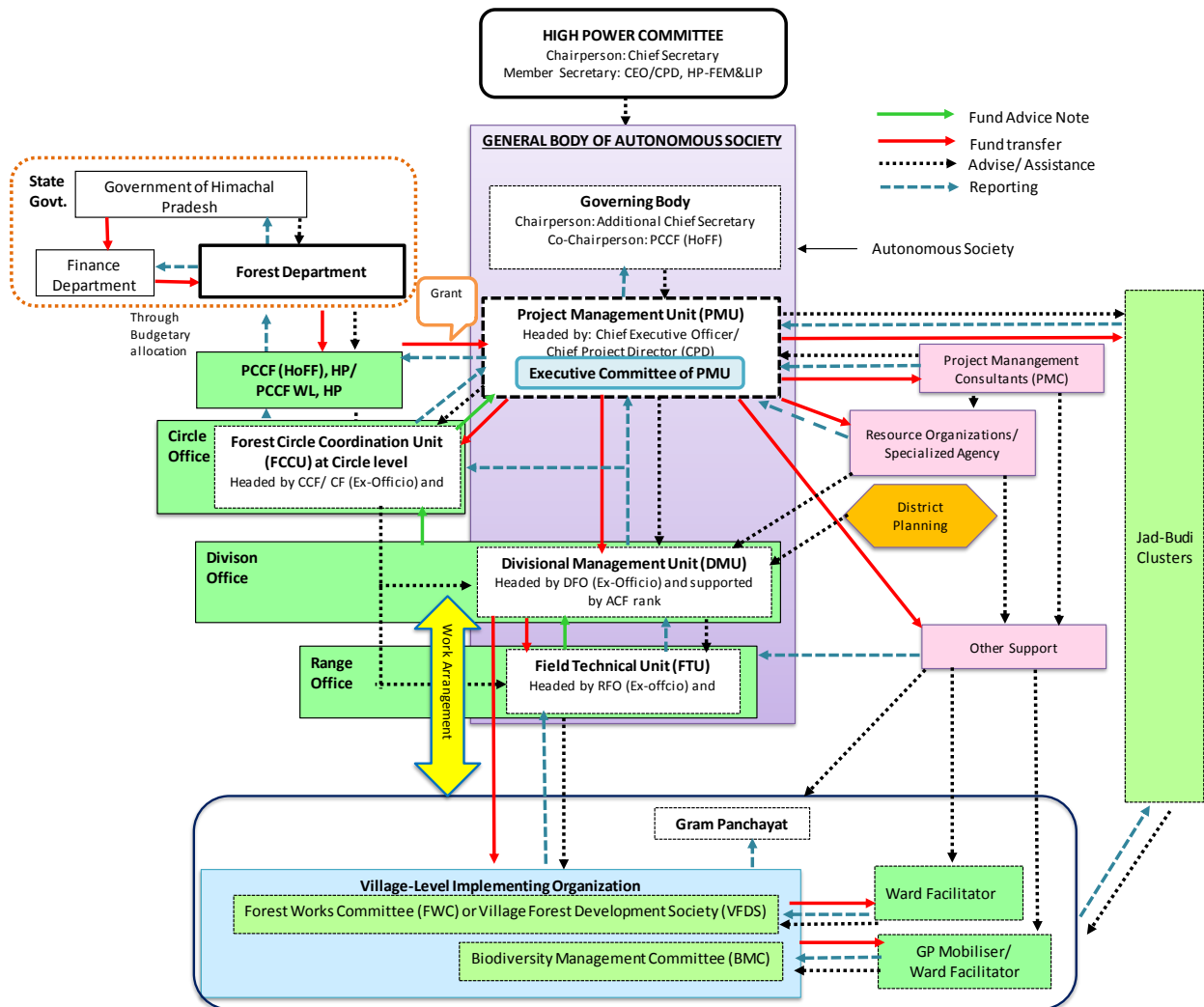
During the JICA Fact Finding Mission 2 (October 23~31, 2017) the institutional arrangements proposed in consultation with the HPFD were deliberated, and further changes in the Option 4b were proposed. The major changes were – a) to place FCCU at Circle level instead of district level, and CF/ CCF to head it as ex-officio in-charge; b) FCCU to be kept out of society; c) DFO (HQ.) to be actively engaged with the FCCU operations as ex-officio in-charge for assisting project implementation, d) divisional management units (DMUs) to be established at project forest divisions, e) the fund should flow directly to the village institutions through project divisions instead of routing the funds from PMU to the community based forest management institution through Gram Panchayat's 'Panchayat Fund'; and f) HPFD would work with VFDS instead of proposed community based forest management institution to be constituted under Gram Panchayat through a resolution. Accordingly, based on the suggested changes after the Fact Finding Mission 2, the institutional arrangements has been modified as Option 4c, and is being further detailed in the subsequent sections.

Considering the current capacities of the VFDS institutions already formed in HP, the study team would like to highlight implications for engaging VFDS as implementing institution. The VFDS may need to address regular compliances on the taxation liabilities/ exemptions occurring by virtue of being a registered society. During the preparatory phase, the Project shall examine this fact prior to designing details of project implementation units/ activities and engaging VFDS institutions as implementing institution at the field level.

4.2 Overview of Proposed Institutional Arrangements for the Project

4.2.1 Overall Framework

The proposed arrangements are based on the review of the institutional arrangements adopted in the on-going externally aided projects as well as the projects that have been implemented by the forest department in the past including the state funded *Sanjhi Van Yojna*. Views and suggestions from HPFD and other stakeholders are also considered for the proposed arrangements. **Figure 4.2.1** shows the detailed institutional arrangement envisaged for the implementation of the Project. Overviews of the roles and responsibilities of various institutions within the arrangements is summarised in **Attachment II.4.2.1.**



Source: JICA Study Team (2017)

Figure 4.2.1 Proposed Institutional Set-up of the Project

The Project Management Unit (PMU) of the Project would be established as autonomous registered society within HPFD, and be made responsible to manage, coordinate, implement and monitor the proposed activities. All offices created for this Project will exclusively work to assist and facilitate implementation of the proposed activities following the project implementation schedule, annual plan of operations and envisaged processes.

The High Power Committee (HPC) created for the Project will act as highest decision-making body for the Project at the state government level, and will not form a part of the autonomous society to be created for project implementation. The Governing Body (GB) and the General Body of the Project would be the decision-making bodies for the Project within Society as per the provisions in the HP Societies Registration Act, 2006.

To support project implementation at the field level, PMU will create and coordinate with two key offices viz., Divisional Management Units (DMUs) and Field Technical Units (FTUs) those will work as extended arms for the PMU. In addition, Forest Circle Management Units (FCCUs) to be created outside the society will provide overall guidance and supervise the project works at

divisional and field levels. The PMU including DMUs and FTUs will implement the project as well as assist and play facilitative roles. The main responsibility for project implementation will remain with the regular structure of HPFD, and in no way the project offices created within autonomous society will duplicate or substitute roles and responsibilities of HPFD. The existing divisional and range offices will operate within their respective jurisdictions for the project implementation, and will be supported and assisted by DMUs and FTUs respectively. The implementing arrangements would be through the forest divisions (DFOs) and through the Village Forest Development Society (VFDS) or Biodiversity Management Committee (BMC).

As required, resources organizations/ support agency will be engaged by PMU to support divisional and range project offices. Community level organisations (VFDS/ BMC) will also be supported by mobilisers and facilitators, to be identified from within the respective project Gram Panchayats/ wards by the community level institutions.

PMU will have a comprehensive operation manual that would prescribe guidelines, policies, protocols, procedures and rules on finance, accounting, administration, management for smooth implementation of the Project. The operation manual shall include gender policy and checklist to ensure gender mainstreaming in the Project. The operation manual will convey the internal policy of the PMU to manage the Project and would be approved first by GB and subsequently by HPC during first year of operations of the Project prior to adoption. PMU would evolve mechanism for tracking the project implementation, progress reporting and fund flow, for the project interventions.

HPFD and PMU will enter into a formal arrangement (e.g. by way of government notification) to vest the project management responsibilities to society (PMU), and after project completion, HPFD would own responsibility of assets and institutions created under the Project to further support and maintain under routine HPFD functioning. PMU shall prepare a phase-out/ sustainability plan during the preparatory phase of the project implementation as a road map to attain sustainability, which exercise would also help PMU and HPFD to bear in mind that the project is time bound. This draft phase-out/ sustainability plan shall be finalised by phase-out phase with mutual agreement between the two entities and executed accordingly.

During JICA Fact Finding Mission 2 (October 23~31, 2017), it was firmed up that the PMU headquarter would be located nearby Shimla for effective coordination and administrative ease, and the two offices –in Kullu (Shamshi) and Rampur would be treated as regional offices.

The following sections of this report describe, details of proposed institutional arrangements as of 8 December, 2017.

4.3 Details of Proposed High Power Committee and Management Bodies of PMU

4.3.1 High Power Committee (HPC) of the Project

High Power Committee (HPC) will be established within the HP state government at project initiation, and will act as the highest decision-making body for the Project at the state level. HPC will be outside the autonomous structure to be created as registered Society at state level for project implementation.

Since, there would be many stakeholders in management of ecosystems and ecosystem services, it would be appropriate to include some key stakeholders to ensure better coordination and inter-sectoral convergence. In DPR, a 13-member committee (being referred as Steering Committee in DPR) headed by Chief Secretary is proposed as a part of the Society, whereas now 14 members HPC having additional 3 members as special invitee is being proposed outside the society (PMU), to be created for the purpose of the Project. As per the current responsibilities of the state government secretaries, the proposed composition of HPC is given in **Table 4.3.1**.

Table 4.3.1 Proposed Composition of HPC for the Project

| No. | Position | Proposed Members in DPR | Remarks by JICA Study Team | Finalised Proposal |
|-----|-------------|---|--|--|
| 1 | Chairperson | Chief Secretary | Also responsible for Tribal Development and Disaster Management | As proposed in DPR |
| 2 | Member | Principal Secretary, Forest | Additional Chief Secretary (Forests, Environment, Science & Technology, Food, Civil Supplies & Consumer Affairs); currently existing; Proposed as Vice-Chairperson | As proposed in DPR |
| 3 | Member | Principal Secretary, Finance | Additional Chief Secretary (Finance, Planning, Economics & Statistics, Twenty Point Programme); Currently existing | Additional Chief Secretary |
| 4 | Member | | Proposed; prospective stakeholder in Ecosystem Management | Additional Chief Secretary (Agriculture, Fisheries, Training & FA) |
| 5 | Member | Principal Secretary, Ayurveda | Additional Chief Secretary (Ayurveda); Currently existing | Additional Chief Secretary (Ayurveda) |
| 6 | Member | Principal Secretary, Tribal Development | To be deleted; currently not existing; responsibilities with the Chief Secretary | Deleted |
| 7 | Member | Principal Secretary, Rural Development and Panchayati Raj | Also responsible for Animal Husbandry | As proposed in DPR |
| 8 | Member | | Proposed; prospective stakeholder to address health & gender issues | Principal Secretary, Health & Family Welfare |
| 9 | Member | | Proposed; prospective stakeholder in Ecosystem Management | Principal Secretary (Horticulture, Information Technology) |
| 10 | Member | PCCF (HOFF), Forest Department | | As proposed in DPR |
| 11 | Member | Chief Wildlife Warden/ PCCF (Wildlife), Forest Department | | As proposed in DPR |
| 12 | Member | Representative of MoEF & CC, GoI | Special Invitee | Special Invitee |
| 13 | Member | Representative of JICA | Special Invitee | Special Invitee |
| 14 | Member | NGOs (2 nos.) to be nominated by State Govt. | One member proposed; Head of Organization of repute to attend the meeting; to be nominated by the state govt. for two years; | One Member only |

| No. | Position | Proposed Members in DPR | Remarks by JICA Study Team | Finalised Proposal |
|-----|------------------|--|--|---------------------------|
| 15 | Member | | Proposed; one member by rotation from the project districts; to be nominated by the state govt. for one year | Zilla Panchayat President |
| 16 | Member | | Proposed for providing independent views on project implementation; Special Invitee; | Special Invitee; |
| 17 | Member-Secretary | Chief Project Director, / Ex-officio CEO Society (PMU) | | As proposed in DPR |

Source: JICA Study Team (2017)

The indicative i) frequency of meetings, ii) agenda circulation and quorum, iii) roles and responsibilities of HPC is described in the following box.

| |
|---|
| <p>i) Frequency of Meetings and representation HPC will meet at least once in six months or more frequently if the situation arises in a year, particularly during preparatory phase of the Project. In case the members are not available on the day of the HPC meeting, they may nominate senior rank officers in the state government/ state department as their representatives to the meetings with authorisation for decision making.</p> <p>ii) Agenda Circulation and Quorum A minimum of 2/3rd members would form the quorum for the HPC meetings. Agenda of the meeting and proposals should be circulated by the Member-Secretary well in advance to all members, at least seven days ahead of the meeting date. The proceedings of the HPC meetings will be circulated to all the members/ attendees within reasonable timeframe, after the meeting is concluded.</p> <p>iii) Roles and Responsibilities HPC will regularly oversee and review the performance of the project implementation, and will be responsible for giving directions to the PMU for ensuring smooth and efficient project implementation. HPC will pursue the matters relating to policy and annual budget with the state government, and also facilitate inter-departmental coordination and convergence The operation manual of the Project, to be developed by PMU during its first year of operation, will be approved by HPC, and will ensure that the approved operation manual is well disseminated and adopted at all levels of project implementation. If a need arises, the approved operation manual could be reviewed by HPC at mid-term of the Project (after 4th year) and PMU needs to have prior discussions with JICA before the approval of amendment by HPC. The amended operation manual could be utilized for remaining project period. HPC will also approve annual plans and budgets of the Project at the beginning of each financial year, and review the project progress at least every-six months on regular basis. For the Project, approvals by HPC for budgetary outlays and actions will be the final decision. HPC will accord administrative and financial approvals/ sanctions of all individual schemes, proposals or procurement of goods & services amounting to 50 million INR and above.</p> |
|---|

4.3.2 Society mode for Project Implementation

For efficient management of a time-bound project, it is very important and essential to have efficient flow of funds, else implementation may suffer delays. As a consequence, desired results may take little longer time or may not be satisfactorily achieved within given time-frame and resources.

To have efficient flow of funds as per the annual plans, and for timely submissions of reimbursement claims, adequate authority has to be entrusted with the project personnel who are

made responsible for managing and implementing the project activities. Creation of an autonomous structure while having dedicated project specific administrative set-up is one of the ways to achieve it.

Thus, taking lessons from completed and on-going JICA assisted forestry projects in the country that are being or have been implemented by adopting the society mode approach, institutional arrangements for the Project has been proposed. This delegation of power and authority will ensure the project management to take timely decisions, plan, release funds, execute and facilitate project processes in an effective manner.

(1) Creation of the Society Project Management Unit (PMU)

The project implementation structure will be created through a State Resolution (Government Order/ Notification) and would get registered as autonomous society under Himachal Pradesh Societies Registration Act, 2006, applicable in the state, with its Memorandum of Association and Bye-laws to be framed as stipulated in the Societies Act, 2006 including the following:

- ◆ Name of Society
- ◆ Location and area of operation
- ◆ Aims and objectives of the society
- ◆ List of membership of the society (General Body)
- ◆ List of members of the Governing Body
- ◆ Executive Offices, officers and their functions
- ◆ Operation of Funds and Accounts of the society
- ◆ Audit of accounts
- ◆ Amalgamation/ Dissolution of Society and Asset Transfer after Project closure

To support project implementation at the field level, PMU (an autonomous society) at the state level will directly coordinate with two levels of offices, DMUs and FTUs, to be created within divisional and range offices respectively to function as extended hands for the PMU, and will operate to assist and facilitate project implementation within the jurisdictions of the project divisions and ranges. The circle offices under HPFD will house the FCCU, and will be involved for regular supervision, facilitation and review of project works within their jurisdiction as per the administrative structure of HPFD and following the project guidelines.

The bye-laws of the Society shall specify the frequency and the manner in which the meetings of the Governing Body and general body shall be held. The Governing Body shall meet at least once in every three months, and the General Body of the PMU (society) shall meet at least once in a financial year. Provision for convening special general body meetings should also be made.

HPFD being the executing agency will first receive funds from the state government through budgetary provision, and pass on to the PMU. HPFD will also be committed to support project implementation through various established offices located at state, circles, divisions, range etc. as per administrative structure of HPFD.

(2) Highest Decision Making of the Society: Governing Body

GB would be the highest decision-making body within the society. In the DPR, 17-member committee (being referred as Executive Committee in DPR) is proposed, whereas now 19 members are proposed for GB. The proposed composition of GB is given in **Table 4.3.2**.

Table 4.3.2 Proposed Composition of Governing Body

| No. | Position | Proposed in DPR | Remark by JICA Study Team | Finalised Proposal |
|-----|------------------|--|--|---|
| 1 | Chairperson | PCCF (HOFF), Forest Department | | Additional Chief Secretary |
| 2 | Co-Chairperson | | | PCCF (HOFF), Forest Department |
| 3 | Member | Chief Wildlife Warden/ PCCF (Wildlife), Forest Department | | As proposed in DPR |
| 4 | Member | Representative of MoEF&CC, GoI | Proposed for deletion (will serve as special invitee for HPC) | Deleted |
| 5 | Member | Representative of JICA | Proposed for deletion; (will serve as special invitee for HPC) | Deleted |
| 6 | Member | Additional PCCF (Finance & Planning), Forest Department | PCCF (Finance & Planning), Forest Department; currently existing | PCCF (Finance & Planning), |
| 7 | Member | Additional PCCF (M&E), Forest Department | PCCF (M&E), Forest Department; currently existing | PCCF (M&E), |
| 8 | Member | Additional PCCF (PFM & FDA), Forest Department | PCCF (PFM & FDA), Forest Department; currently existing | PCCF (PFM & FDA), |
| 9 | Member | Additional PCCF (Working Plans), Forest Department | | Additional PCCF (Working Plans) |
| 10 | Member | Additional PCCF (Research), Forest Department | | Additional PCCF (Research), |
| 11 | Member | | Proposed; prospective stakeholder in Ecosystem Management | Member-Secretary, State Biodiversity Board, HP |
| 12 | Member | Director (Ayurveda) | | Director (Ayurveda) |
| 13 | Member | CCF (Project Formulation), Forest Department | | CCF (Project Formulation), |
| 14 | Member | CCF (IT), Forest Department | | CCF (IT), |
| 15 | Member | CCF in field posting | All project circles; | CCF in field posting |
| 16 | Member | Convener, SLBC or its representative | Proposed for inter-sectoral convergence; senior rank officer | Convener, SLBC or its representative |
| 17 | Member | Representative from NABARD | Proposed for inter-sectoral convergence; senior rank officer | Representative from NABARD |
| 18 | Member | Project Director in PMU | Proposed | Project Director in PMU |
| 19 | Member | Representative of Academia (2 nos.) to be nominated by the state govt. | One member proposed; Head of Organization of repute to attend the meeting; to be nominated by the state govt. for two years; | One member |
| 20 | Member | NGOs (2 nos.) to be nominated by State Govt. | Proposed for deletion; (will be a member for HPC) | Deleted |
| 21 | Members | GP/ FWC Chairperson | Proposed; One member of good performing GP/ FWC by rotation from the project divisions; to be nominated by the Chief Project Director for one year | One member of good performing GP/ FWC by rotation |
| 22 | Member-Secretary | Chief Project Director, / Ex-officio CEO Society (PMU) | | As proposed in DPR |

Source: JICA Study Team (2017)

The indicative i) frequency of meetings, ii) agenda circulation and quorum, iii) roles and responsibilities of GB is described in the following box.

| |
|---|
| <p>i) Frequency of Meetings GB will meet at least once every quarter (starting as per financial year), or more frequently if the situation arises, particularly during preparatory phase of the Project.</p> <p>ii) Agenda Circulation and Quorum A minimum of 2/3rd members would form the quorum for the GB meetings. Agenda of the meeting and Proposals should be circulated by the Member-Secretary well in advance to all members, at least seven days ahead of the meeting date. The proceedings of the GB meetings should be circulated to all the members/ attendees within reasonable timeframe, after the meeting is concluded.</p> <p>iii) Roles and Responsibilities GB would rigorously review the project progress vis-à-vis annual plans, and would also monitor the disbursement status. It will review the functioning of PMU (society) regularly and guide to prepare proposals for HPC, whenever necessary for the smooth implementation of the Project. GB will accord administrative and financial sanctions of all individual schemes, proposals or procurement of goods & services amounting to 2 million INR and above, but not exceeding 50 million INR.</p> |
|---|

(3) Management Decision Making of the Society: General Body

General Body will be a decision-making body of the Society on all matter as required under the HP Societies Registration Act, 2006. The General Body of the Society will comprise of the members of the Governing Body, PMU officers in the rank of DFO and above, Forest Circle Coordination Unit (FCCU) Officers in-charge of all the Circles, and Divisional Management Unit (DMU) Officers in-charge where the project activities will be undertaken. The General Body will meet once in a year to conduct the Annual General Meeting (AGM) of the Society. Proceedings of the AGM meetings will be circulated to all the members/ attendees within reasonable timeframe, after the meeting is concluded.

(4) Management of the Project: Executive Committee of PMU

Since the Governing Body of the Society would be meeting on quarterly basis, it would be essential to have some institutional arrangements in place at the operation level for quick decision making, close supervision, guidance and follow-ups. Thus, Governing Body will entrust day-to-day responsibilities with the Executive Committee that will be constituted at the state level within PMU. The composition of the Executive Committee is given in **Table 4.3.3**.

Table 4.3.3 Proposed Composition of Executive Committee of PMU

| No. | Position | Designated Person |
|-----|------------------|--|
| 1 | Chairperson | Chief Project Director |
| 2 | Member | all Additional/ Joint Project Directors of PMU |
| 3 | Member-Secretary | Project Director (Administration & Finance) |

Source: JICA Study Team (2017)

State programme managers may participate as ‘Special Invitees’ in the EC meetings for providing insights and/or to share views or concerns in the interest of the project implementation.

The indicative i) frequency of meetings, ii) agenda circulation and quorum, iii) roles and responsibilities of the Executive Committee of PMU is described in the following box.

i) Frequency of Meetings

The Executive Committee will meet at least once every month, or more frequently if the situation arises, particularly during preparatory phase of the Project.

ii) Agenda Circulation and Quorum

As far as possible efforts would be made that all of the members participate in EC meetings, however minimum of 2/3rd members would form the quorum of the EC meetings. Agenda of the meeting and proposals should be circulated by the Member-Secretary well in advance to all members, at least three days ahead of the meeting date. Proceedings of the EC meetings should be circulated to all the members/ attendees within reasonable timeframe, after the meeting is concluded.

iii) Roles and Responsibilities

EC will provide environment for sharing proposals on any areas of project functioning, and will encourage the members to provide ideas, views, and concerns. Member-Secretary of EC will keep systematic records and the proceedings of all such meetings.

EC would keep track of the project implementation, and would be responsible to guide, issue instructions, prepare guidelines, execute capacity development plan, establish and operate M&E, GIS/ MIS systems, undertake field visits, disseminate project information and provide hand-holding support in field, in almost all respect to ensure efficient implementation of the Project.

The EC will also be responsible for timely submitting reimbursement claims, and institute concurrent audits as well as statutory audits on regular basis.

A designated officer in PMU will systematically maintain records of all meetings (HPC, GB, EC and AGM), and will make it available to reviewing authorities as per requirements. Falling in line with the authorities entrusted by the Governing Body, Executive Committee (EC) may accord administrative and financial sanctions of all individual schemes, proposals or procurement of goods & services not exceeding 2 million INR.

4.4 Details of Proposed Project Implementation Units

4.4.1 Proposed Structure of Project Management Units (PMU)

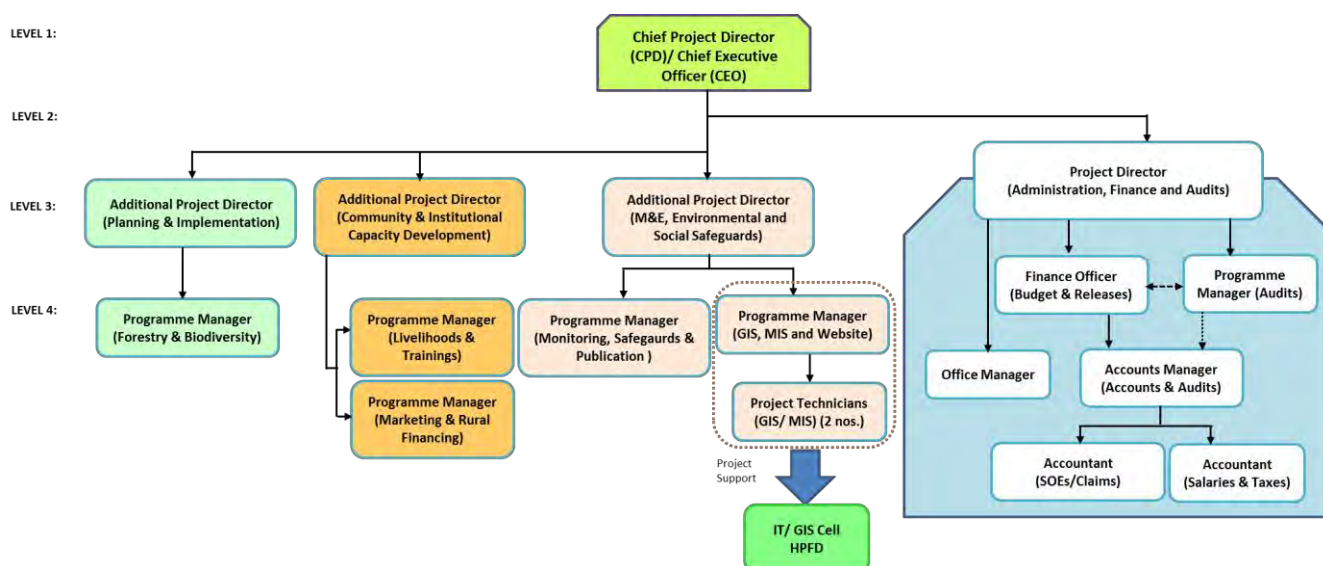
The autonomous society (PMU) would be headed by chief project director (CPD) in the rank of CCF or above. S/he would also act as CEO of the Society and would chair the Executive Committee. S/he would be member-secretary to the Governing Body of the Society as well as to HPC constituted for the Project.

At the state level, CPD would be supported by a team officers and professionals that would include project director in the rank of CF or deputy conservator of forests (DCF), additional project directors (APDs) in the rank of DFO, finance officer, programme managers (PMs) and other support staff hired from open market including MIS and GIS professionals, accountants and ministerial staff. To augment various skill sets, PMU would further be supported by a team of experts constituting project management consultants (PMC). As a part of the society, PMU would also establish DMUs and FTUs to work as extended arms and support project implementation

and supervision while working along with the project divisions and the VFDSs/ BMCs.

PMU will manage the project funds, extend funds to the implementing units – project divisions and VFDSs/ BMCs, guide and supervise project implementation to achieve results within stipulated timeframe adopting the prescribed processes, collate and consolidate the expenditure statements from divisional and field project offices, and prepare Statement of Expenditures (SOEs) for getting reimbursement of claims from JICA.

All the officers in PMU would either be on deputation from HPFD/ Finance Department for minimum of three years or as per existing deputation tenure specified in government rules or hired on contract from open market directly or recruited through a qualified and reputed placement/ govt. outsourcing agency. PMU would adopt the existing government orders for outsourcing staff for hiring ministerial staff (steno/ computer operators, drivers, security/ utility persons etc.). Female candidates would be encouraged by PMU to join at different operational levels of the Project. The proposed structure of PMU is given in **Figure 4.4.1**.



Source: JICA Study Team (2017)

Figure 4.4.1 Proposed Structure of PMU

The proposed composition of the PMU will be as follows:

Table 4.4.1 Proposed PMU Staffing

| Level | Rank | Position | Number | Source | Mode | Engagement |
|------------------|------------------|---------------------------------------|--------|--------------------------|------------|------------|
| Key Staff | | | | | | |
| Level 1 | CCF & above | Chief Project Director | 1 | State Forest Department | Deputation | Full Time |
| Level 2 | CF/ DCF | Project Director | 1 | State Forest Department | Deputation | Full Time |
| Level 3 | Controller (SAS) | Finance Officer | 1 | State Finance Department | Deputation | Full Time |
| Level 3 | DFO | Additional Project Director | 3 | State Forest Department | Deputation | Full Time |
| Level 3 | | Program Manager/ Chartered Accountant | 1 | Open Market | Contract | Full Time |
| Level 4 | | Program Manager | 5 | Open Market | Contract | Full Time |
| Level 5 | | Technicians | 2 | Open Market | Contract | Full Time |
| Level 6 | | Accounts Manager | 1 | Open Market | Contract | Full Time |
| Level 6 | | Office Manager | 1 | Open Market | Contract | Full Time |

| Level | Rank | Position | Number | Source | Mode | Engagement |
|---------------------------------------|----------------|--------------------|-----------|-------------|-------------|------------|
| Level 7 | Clerical Staff | Accountants | 2 | Open Market | Contract | Full Time |
| Total Key Staff | | | 18 | | | |
| Supporting Staff - Outsourcing | | | | | | |
| Level 7 | Clerical Staff | Personal Secretary | 1 | Open Market | Outsourcing | Full Time |
| Level 8 | Clerical Staff | Personal Assistant | 1 | Open Market | Outsourcing | Full Time |
| Level 9 | | Stenographers | 4 | Open Market | Outsourcing | Full Time |
| Level 10 | | Computer Operators | 6 | Open Market | Outsourcing | Full Time |
| Level 10 | | Drivers | 0 | Open Market | Outsourcing | Full Time |
| Level 11 | | Security Staff | 4 | Open Market | Outsourcing | Full Time |
| Level 12 | | Peon | 4 | Open Market | Outsourcing | Full Time |
| Level 12 | | Housekeeping | 2 | Open Market | Outsourcing | Full Time |
| Total Support Staff | | | 22 | | | |
| Total PMU Staffing | | | 40 | | | |

Source: JICA Study Team (2017)

Tentative responsibilities for the key staff positions in the PMU is given in Table 4.4.2.

Table 4.4.2 Responsibilities of Key Staff in PMU

| No | Position | Rank | Number | Key Responsibilities | Remarks |
|--|---|------------------|--------|---|--|
| Key Staff | | | | | |
| 1 | Chief Project Director | CCF & above | 1 | Overall technical, financial and administrative; ensure Time-Bound Action Plan, Overall project Implementation Plan; GB, HPC and Inter-sectoral convergence meetings; annual budgets, releases and Reimbursement Claims | Full Time; From FD on deputation for minimum 3 years |
| A. Administration, Finance and Audits Unit | | | | | |
| 1 | Project Director (Administration, Finance and Audits) | DCF/ CF | 1 | Overall supervision, administration & finance aspects; managing contracts - human resources, outsourcing, procurement of goods & services; annual budget & releases, expenditure; claims and fund disbursement, facilitate statutory and concurrent audits; RTI and Grievance redressal issues | Full Time; From FD on deputation for minimum 3 years |
| 2 | Finance Officer | Controller (SAS) | 1 | Supervising Accounts Manager, implement accounting software based double-entry system; monitoring financial progress and expenditures, ensure timely budget/ releases, utilization and SOEs/ claims & tax returns, coordinate with FCCUs/ FTUs; coordinate with other stakeholders; in addition, would assist PD to prepare agenda for EC, GB, HPC, AGM meetings; | Full Time; From FD on deputation for minimum 3 years |
| 3 | Programme Manager (Audits) | Sr. Manager | 1 | Assist in establishing financial control systems, establish financial management and project accounting systems, facilitate statutory audits, conduct/ supervise Internal/ Concurrent audits, capacity development of stakeholders, coordinate with other stakeholders | Full Time Chartered Accountant; Open Market |
| 4 | Office Manager | Manager | 1 | Assist in logistics and protocols; O&M of vehicles, office, equipment, security, store; organizing meetings & events; meeting letters & communications, document and maintain proceedings & all records and contracts, | Full Time; Open Market |
| 5 | Accounts Manager (Accounts & Audits) | Manager | 1 | Assist and maintain project accounts; bank operations, reconciliation of funds, seeking Utilization Certificates and assist audits, supervise Accountants | Full Time; Open Market |
| 6 | Accountant (SOEs/ Claims) | Clerical Staff | 1 | Assist in day-to-day accounting activities; preparation and maintain SOEs; prepare claims for submission to CAAA/ JICA; reconciliation of annual budgets and disbursements; facilitate and assist audits | Full Time; Open Market |
| 7 | Accountants (Salaries & Taxes) | Clerical Staff | 1 | Assist in day-to-day accounting activities; preparation and maintain salary/ remunerations details and payments; computation and deposit of taxes; assist | Full Time; Open Market |

| No | Position | Rank | Number | Key Responsibilities | Remarks |
|---|--|----------------|-----------|--|--|
| | | | | audits | |
| B. Planning & Implementation Unit | | | | | |
| 1 | Additional Project Director (Planning & Implementation) | DFO | 1 | Overall planning & implementation of interventions; annual plan, budget and approvals, technical guidance, biodiversity/ ecosystems conservation; ecosystem health card and supervision and coordinate with DFOs/ circle and FCCUs | Full Time; From FD on deputation for minimum 3 years |
| 2 | Programme Manager (Forestry and Biodiversity) | Sr. Manager | 1 | Assist in annual planning and implementation of PFM and Non-PFM Models and promotion of Forestry models and NTFP interventions in project areas, creation of people's biodiversity register, micro planning, design templates, guidelines and manual, monitoring & reporting and capacity building; coordinate with other stakeholders | Full Time; Open Market |
| C. Community and Institutional Capacity Development Unit | | | | | |
| 1 | Additional Project Director (Institutional and Capacity Development) | DFO | 1 | Overall planning & implementation of interventions; annual plan, technical guidance and supervision, coordinate for inter-sectoral convergence; support to leverage funds; strategize gender mainstreaming and women/ vulnerable group empowerment, develop partnerships & networks; and coordinate with DFOs/ circle and FCCUs | Full Time; From FD on deputation for minimum 3 years |
| 2 | Programme Manager (Livelihoods & Training) | Sr. Manager | 1 | Assist in annual planning and implementation of livelihood promotion; design small business/ enterprise for community institutions for income generation, cluster promotion; capacity building and trainings, design templates, guidelines and manual, monitoring & reporting and capacity building, coordinate with other stakeholders | Full Time; Open Market |
| 3 | Programme Manager (Marketing & Rural Financing) | Sr. Manager | 1 | Assist in annual planning and implementation of livelihood promotion; value chain and market analysis, facilitate rural financing, design templates, guidelines and manual, monitoring & reporting and capacity building, coordinate with other stakeholders | Full Time; Open Market |
| D. M&E, Environment and Social Safeguards Unit | | | | | |
| 1 | Additional Project Director (M&E, Environmental and Social Safeguards) | DFO | 1 | Overall M&E – GIS/ MIS and research; study contract management, develop and supervise ToRs for studies; Guidelines and capacity building on M&E initiative, progress tracking and reporting on performance indicators; coordinate with DFOs/ circles and supervise & guide FCCUs | Full Time; From FD on deputation for minimum 3 years |
| 2 | Programme Manager (Monitoring, Safeguards & Publication) | Sr. Manager | 1 | Assist in monitoring and safeguards compliances, preparing quarterly and annual reports; preparing guidelines and manuals; project publicity and information dissemination, events/ workshops; develop knowledge material, publish newsletters, reports; coordinate with other stakeholders | Full Time; Open Market |
| 3 | Programme Manager (GIS, MIS and Website) | Sr. Manager | 1 | Assist in GIS based M&E, maintain GIS systems and equipment, software inventory & maintenance, procurement of imageries and spatial analysis, map production for planning & decision making, monitoring & reporting; establish GIS operations at all levels; coordinate with IT Cell of HPFD; coordinate for progress tracking and reporting; coordinate with other stakeholders | Full Time; Open Market/ Deputation |
| 4 | Project Technicians (GIS/ MIS) | Profession als | 2 | Assist in maintaining systems, GIS/ MIS operations at all levels, computer generated analytical GIS maps, MIS reports, website and digital repository, software inventory & maintenance; coordinate with other stakeholders | Full Time; Open Market |
| | Total Key Staff | | 18 | Deputation/ Direct Hire | Full Time |
| | Total Support Staff | | 22 | Outsourcing | Full Time |
| | Total PMU Staff | | 40 | | |

Source: JICA Study Team (2017)

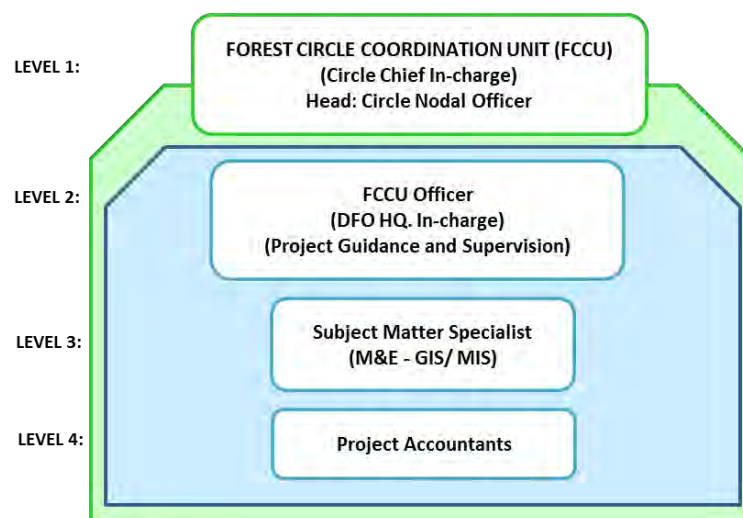
Indicative TORs for project managers and project technicians to be hired at PMU are presented in **Attachment II.4.4.1.**

4.4.2 Proposed Structure of Forest Circle Coordination Unit (FCCU)

Forest Circle Coordination Unit (FCCU) will be created at Circle level where the Project would be implemented, and would function as support and facilitation unit of the PMU for project implementation. The FCCU would not form the part of the society. The FCCU would be housed within the Circle Office, and would be headed by CCF rank officer and would be designated as ‘Circle Nodal Officer’. He would be assisted by a DFO rank officer (e.g. DFO (HQ.) and would be designated as FCCU officer. S/he will coordinate and facilitate project implementation at the division level, and would extend all technical inputs and guidance to the forest divisions at requirement basis and through regular review meetings which frequency to be determined during the preparatory phase of the Project. Officer Order/ Notification to effect this arrangement would be brought out by HPFD during the project implementation.

FCCU will receive funds from PMU for regular operation of FCCU. FCCU will operate and report expenses to PMU through Circle Nodal Officer, and will act as the controlling and supervising unit for the project implementation. In addition, FCCU would also be involved to channelize funds to project divisions through as system of ‘Fund Advice Note’ to be reviewed and recommended by FCCU officer and forwarded by Circle Nodal Officer to PMU for release of funds as per annual plan to project DMUs both for departmental mode and as well PFM mode activities. FCCU team will be guided by the Project Operation Manual as well as PMU.

FCCU officer will be supported by one subject matter specialist (SMS-M&E and GIS/ MIS) will be responsible for the data processing, coordination, supervision and guidance, monitoring, and support MIS/ GIS requirements. S/he will also be responsible to assist DFO (HQ) for supervising and guiding project implementation, and facilitate convergence at the district level.



Source: JICA Study Team (2017)

Figure 4.4.2 Proposed Structure of FCCU

The structure of FCCU is given in **Figure 4.4.2**. Female candidates would be encouraged to join the Project at various positions. The proposed composition of FCCU is presented in **Table 4.4.3**.

Table 4.4.3 Proposed FCCU Staffing (Deputation/ Direct Hire/ Outsourcing)

| Level | Rank | Position | Number | Source | Mode | Engagement |
|----------------------------|---------|---------------------------|--------|-------------------------|-------------|------------|
| Key Staff | | | | | | |
| Level 1 | CF/ CCF | Circle Nodal Officer | 1 | State Forest Department | In-charge | Part-Time |
| Level 2 | DFO | FCCU Officer | 1 | State Forest Department | In-charge | Full Time |
| Level 3 | | Subject Matter Specialist | 1 | Open Market | Contract | Full Time |
| Level 4 | | Project Accountant | 2 | Open Market | Contract | Full Time |
| Total Key Staff | | | 5 | | | |
| Supporting Staff | | | | | | |
| Level 5 | | Computer Operator | 1 | Open Market | Outsourcing | Full Time |
| Total Support Staff | | | 1 | | | |
| Total FCCU Staffing | | | 6 | | | |

Source: JICA Study Team (2017)

Tentative responsibilities for the key staff positions in FCCU is given in **Table 4.4.4**.

Table 4.4.4 Responsibilities of Key Staff in FCCU

| | Position | Rank | Nr | Key Responsibilities | Remarks |
|----------------------------|--|---------|----|---|------------------------|
| Key staff | | | | | |
| 1 | Circle Nodal Officer | CF/ CCF | 1 | Overall technical and administrative, annual plan, facilitate fund release, project reviews; coordination with the project divisions, facilitate inter-sectoral convergence at district level, monitoring & reporting | Part-Time; In-charge |
| 2 | FCCU officer | DFO | 1 | Assist in technical and administrative, annual plan, facilitate fund release, project reviews; coordination with the project divisions, facilitate inter-sectoral convergence at district level, monitoring & reporting | Full Time; In-charge |
| 4 | Subject Matter Specialist (M&E and GIS/ MIS) | | 1 | Assist in monitoring annual plan; MIS/ GIS data compilation, progress monitoring based on MIS and GIS, reporting and capacity building; coordinate with other stakeholders | Full Time; Open Market |
| 6 | Project accountant | | 2 | Assist in fund management & releases, expenditure tracking, utilization certificates, SOEs, tax filing, audits etc.; coordinate with DMUs and FTUs for financial progress reporting | Full Time; Open Market |
| Total key staff | | | 5 | Deputation/ Direct Hire | Full Time |
| Total support staff | | | 1 | Outsourcing | Full Time |
| Total FCCU staff | | | 6 | | |

Source: JICA Study Team (2017)

Indicative TOR for the subject matter specialist to be hired at FCCU is presented in **Attachment II.4.4.2**.

4.4.3 Proposed Structure of Divisional Management Unit (DMU)

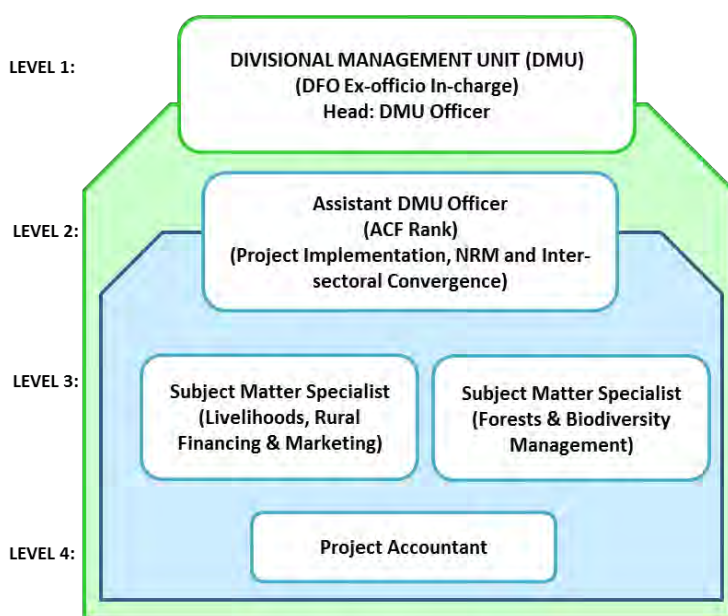
As a sub-office of PMU (society) the Divisional Management Units (DMUs) will be created at divisional level where the Project would be implemented, and would function as the dedicated and extended wing of the PMU for project implementation. The DMU would be housed within the divisional office, and would be headed by DFO rank officer designated as ‘DMU Officer’.

The DMU within the jurisdiction of division will supervise, plan, implement, and review the project implementation in the project ranges along with their respective regular and designated

overseeing responsibilities, and would provide vital link between the Project and regular departmental activities. The DMU will also be responsible for cross-checking project works vis-à-vis financial and physical progress reporting, maintain project accounts, seek assistance from FCCU, and would participate in project events. S/he will coordinate and facilitate project implementation at the division level, and would extend all technical inputs and guidance on day-to-day basis both to the DMU and FTUs.

An officer in the rank of ACF will be designated as ‘Assistant DMU Officer’ for coordinating and steering the project activities, will also act as forestry expert. Officer Order/ Notification to effect this arrangement would be brought out by HPFD during implementation phase. He would also be assisted by ‘Subject Matter Specialists’ to be hired on contract by PMU and placed with the DMU for supporting project implementation and assisting DMU/ Assistant DMU officers.

DMU will receive funds from PMU for regular operation of DMU as well as FTUs. DMU will operate and report expenses to PMU through Circle Nodal Officer, who will act as the controlling and supervising unit for the project implementation. In addition, DMU would also be involved to channelise funds to project FTUs as well as VFDSs/ BMCs through as system of ‘Fund Advice Note’ to be prepared and recommended by DMU officer and forwarded by Circle Nodal Officer to PMU for release of funds as per annual plan to project DMUs both for departmental mode and as well PFM mode activities.



Source: JICA Study Team (2017)

Figure 4.4.3 Proposed Structure of DMU

and guiding project implementation as well as the works carried out by NGOs and resource organisations, and facilitate convergence at the district level.

SMS (Forests & Biodiversity Management) would be responsible for extending assistance and guidance and supervision of forestry & biodiversity interventions, whereas SMS (Livelihoods,

Under guidance from the Circle Nodal Officer, DMU will also coordinate with the district administration for inter-sectoral convergence, participate in meetings at circle and district level, and extend support for planning, preparing estimates, monitoring, supervision and follow-ups, documentation and reporting the physical and financial progress. DMU team will be guided by the Project Operation Manual as well as PMU.

DMU/ Assistant DMU officers will be supported by the subject matter specialists (SMSs) for supervising

Rural Financing and Marketing) would be responsible for guiding and supervising livelihoods initiatives, coordinating with financial institutions, product designing, packaging and marketing, facilitating licensing, etc.

Project Accountants will coordinate with project divisions and FTUs, and assist in maintaining the project accounts adopting double-entry accounting system using accounting software, and timely prepare SOEs for onward submission. Female candidates would be encouraged to join the Project at various positions. The structure of DMU is given in **Figure 4.4.3**.

The proposed composition of DMU is presented in **Table 4.4.5**.

Table 4.4.5 Proposed DMU Staffing (Deputation/ Direct Hire/ Outsourcing)

| Level | Rank | Position | Number | Source | Mode | Engagement |
|-----------------|------|---------------------------|--------|-------------------------|------------|------------|
| Key Staff | | | | | | |
| Level 1 | DFO | DMU Officer | 1 | State Forest Department | Ex-Officio | Part-Time |
| Level 2 | DFO | Assistant DMU Officer | 1 | State Forest Department | Ex-Officio | Part Time |
| Level 3 | | Subject Matter Specialist | 2 | Open Market | Contract | Full Time |
| Total Key Staff | | | 4 | | | |

Source: JICA Study Team (2017)

Tentative responsibilities for the key staff positions in DMU is given in **Table 4.4.6**.

Table 4.4.6 Responsibilities of Key Staff in DMU

| | Position | Rank | Nr | Key Responsibilities | Remarks |
|---|--|------|----------|--|---------------------------|
| | Key staff | | | | |
| 1 | DMU Officer | DFO | 1 | Overall technical, financial and administrative, annual plan, SOEs, facilitate fund release, project reviews; coordination with the project divisions, facilitate inter-sectoral convergence at district level, monitoring & reporting and capacity building | Part-Time; Ex-Officio |
| 2 | Assistant DMU officer | ACF | 1 | Assist in technical, financial and administrative, annual plan, SOEs, facilitate fund release, project reviews; coordination with the project divisions, facilitate inter-sectoral convergence at district level, monitoring & reporting and capacity building | Part Time; Ex-Officio |
| 3 | Subject Matter Specialist (Forests & Biodiversity Management) | | 1 | Assist in annual plan and implementation; guidance and supervision of forestry and biodiversity interventions, data compilation, reporting and capacity building; coordinate with other stakeholders | Full Time; Open Market |
| 4 | Subject Matter Specialist (Livelihoods, Rural Financing and Marketing) | | 1 | Assist in annual plan and implementation; guide on livelihoods; small business/ enterprise plan, inter-sectoral convergence; assist in value chain and market analysis, rural financing, support cluster development, extend support to leverage funds, monitoring & reporting and capacity building; coordinate with other stakeholders | Full Time; Open Market |
| | Total key staff | | 4 | Deputation/ Direct Hire | Full Time |
| | Total support staff | | 0 | Outsourcing | Full Time |
| | Total DMU staff | | 4 | | |

Source: JICA Study Team (2017)

Indicative TORs for the subject matter specialist to be hired at DMU are presented in **Attachment II.4.4.3**.

4.4.4 Proposed Structure of Field Technical Unit (FTU)

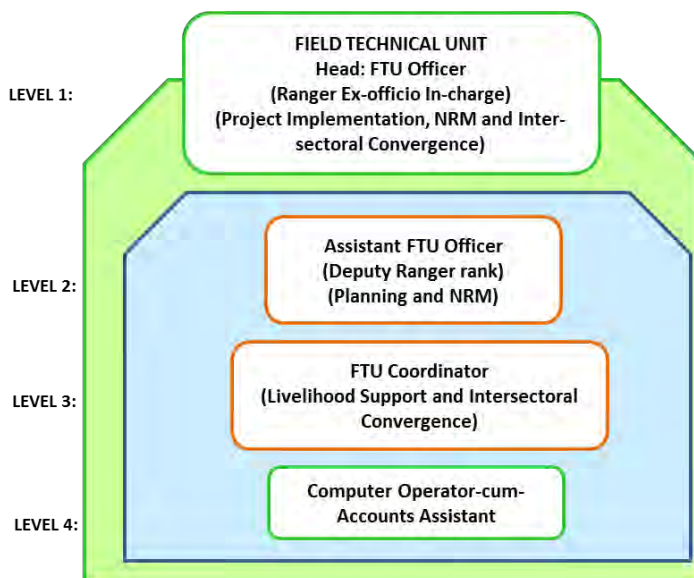
Field Technical Unit (FTU) will be created as an extended arm of PMU and as a part of the autonomous society, and would be housed within the range office. The FTU will function within the range jurisdiction, and will supervise, plan, implement, and review the project implementation in the project community development blocks along with their respective regular and designated overseeing responsibilities, and would provide vital link between the Project and regular departmental activities. The FTU will also be responsible for cross-checking project works vis-à-vis financial and physical progress reporting, maintain project accounts, seek assistance from DMU, and would participate in project events. An officer in the rank of Ranger will be designated as 'FTU Officer' for coordinating and steering the project activities, will also act as forestry expert. Officer Order/ Notification to effect this arrangement would be brought out by HPFD during implementation phase. He would be assisted by Assistant FTU Officer (Deputy Ranger rank officer) and a team to be provided by PMU and placed with the range office for supporting and facilitating project implementation.

The Assistant FTU officer would be on deputation from the Forest Department, and would work full-time in the project. S/he will facilitate project implementation at the range level, and would extend all technical inputs and guidance at field level on day-to-day basis. FTU will be guided and supported by DMU as well as FCCU.

FTU will operate and report expenses to DMU that will act as the controlling and supervising unit for the project implementation. FTU would not be involved to channelize funds to VFDSs/ BMCs, however 'Fund Advice Note' for release of funds to VFDSs/ BMCs as per annual plan would be prepared and recommended by Assistant FTU officer and forwarded by FTU Officer to the DMU, who would in turn release the funds directly to the VFDSs/ BMCs for PFM mode activities.

FTU will coordinate and support forest range level activities and guide and facilitate the VFDSs/ BMCs and community institutions for planning, preparing estimates, monitoring, supervision and follow-ups, documentation and reporting the physical and financial progress. FTU team will be guided by the project operation manual as well as DMU/ PMU.

FTU/ Assistant FTU officers will be assisted by one FTU coordinator and support staff to manage project activities. Female candidates would be encouraged to join the Project at various positions.



Source: JICA Study Team (2017)

Figure 4.4.4 Proposed Structure of FTU

Assistant FTU Officer (Planning and NRM) will be responsible for facilitating Forest & Ecosystems Management Plan (FEMP), and will also be responsible for progress monitoring and reporting including data compilation and ensuring the Project GIS and survey requirements, whereas FTU Coordinator (Livelihood Support and Inter-sectoral Convergence) will guide VFDS/ BMC sub-committees during planning and IGAs initiatives, and facilitate preparation of Community Development and Livelihood Improvement Plan (CD&LIP). S/he will also act as a resource person for village and community institutions for institutional capacity building as well as facilitate or execute the training activities for the village/ community institutions. S/he would also coordinate with NGOs to understand specific training needs, and accordingly plan for capacity development initiatives. Computer Operator-cum-Accounts Assistant will coordinate with the village institutions to maintain the project accounts adopting double-entry accounting system using accounting software, and timely prepare SOEs for onward submission as well as look after project MIS requirements. The structure of FTU is given in **Figure 4.4.4**.

The proposed composition of FTU is described in **Table 4.4.7**.

Table 4.4.7 FTU Staffing (Proposed – Deputation/ Direct Hire/ Outsourcing)

| Level | Rank | Position | Number | Source | Mode | Engagement |
|------------------------|---------------|--|----------|-------------------------|-------------|------------|
| Key staff | | | | | | |
| Level 1 | Ranger | FTU officer | 1 | State Forest Dept | Ex-Officio | Part Time |
| Level 2 | Deputy Ranger | Assistant FTU officer | 1 | State Forest Department | Deputation | Full Time |
| Level 3 | | FTU coordinator | 1 | Open Market | Contract | Full Time |
| Level 4 | | Computer operator-cum-Accounts Assistant | 1 | Open Market | Outsourcing | Full Time |
| Total key staff | | | 4 | | | |

Source: JICA Study Team (2017)

Tentative responsibilities for the key staff positions in FTU is given in **Table 4.4.8**.

Table 4.4.8 Responsibilities of Key Staff in FTU

| | Position | Rank | No | Key Responsibilities | Remarks |
|---|---|------------------------------------|----------|---|--|
| | Key Staff | | | | |
| 1 | FTU officer | Ranger | 1 | Overall technical, financial and administrative, annual plan, SOEs, facilitate fund release, and project reviews & reporting, facilitate inter-sectoral convergence at block level | Part-Time; Ex-Officio |
| 1 | Assistant FTU officer | Dy. Ranger/ Block Officer | 1 | Assist in overall technical, financial and administrative, annual plan, SOEs, facilitate fund release, guide implementation, afforestation, pasture and NTFP interventions, GIS and assist in assessment surveys, monitoring & reporting; coordinate with other stakeholders and facilitate inter-sectoral convergence at block level | Full-Time; From FD on deputation for minimum 3 years or more |
| 3 | FTU coordinator (Livelihood Support and Inter-Sectoral Convergence) | | 1 | Assist in annual planning and implementation; guide and facilitate microplanning, livelihood; small business/ enterprise plans, inter-sectoral convergence; cluster promotion; capacity building, monitoring & reporting; coordinate with other stakeholders | Full Time; Open Market |
| | Total key staff | | 3 | Deputation/ Direct Hire | Full Time |
| | Total support staff | | 1 | Outsourcing | Full Time |
| | Total FTU staff | | 4 | | |

Source: JICA Study Team (2017)

Indicative TOR for the FTU coordinator to be hired at FTU is presented in **Attachment II.4.4.4**.

4.4.5 Other Implementing/ Facilitating Institutions

(1) Project Management Consultants (PMC)

As a part of the project design and institutional arrangements, PMC team will be deployed at state level to assist PMU in managing the Project and extend required technical guidance for limited number of years. The team composition of PMC would carry skill set and experience to complement and supplement PMU initiatives, provide technical support in preparing guidelines and procedures as well as provide an independent view on project implementation.

(2) Specialized Agencies/ Resource Organisations

The areas where the PMU may require additional resources like baseline surveys, evaluations, short films, publications, skill training required for SHGs and cluster level enterprises etc., would be undertaken by the specialized and credible organisations having proven history of delivering the technical training programmes to the similar type of community institutions.

The services of the Specialised Agency/ Resource Organisations will be procured by PMU through a local competitive bidding process, conforming to the applicable procurement guidelines. Quality and cost based selection (QCBS) method will be adopted by PMU as described in **Part II, Section 4.6.6**.

(3) District Planning Committee (DPC)

Inter-sectoral linkages would be ensured through the existing institutions in place at state, district and block level. The 74th Constitutional Amendment Act mandated the establishment of District Planning Committees (DPCs) for consolidating plans prepared by Gram Panchayats and Municipalities in the district into the draft district plan.

The idea is to strengthen existing institutional mechanism rather creating an additional system at district. DFO in a division is already coordinating with district administration on regular basis for issues related with Forest Conservation Act (FCA), Forest Rights Act (FRA), forests related issues, MGNREGS programme etc.

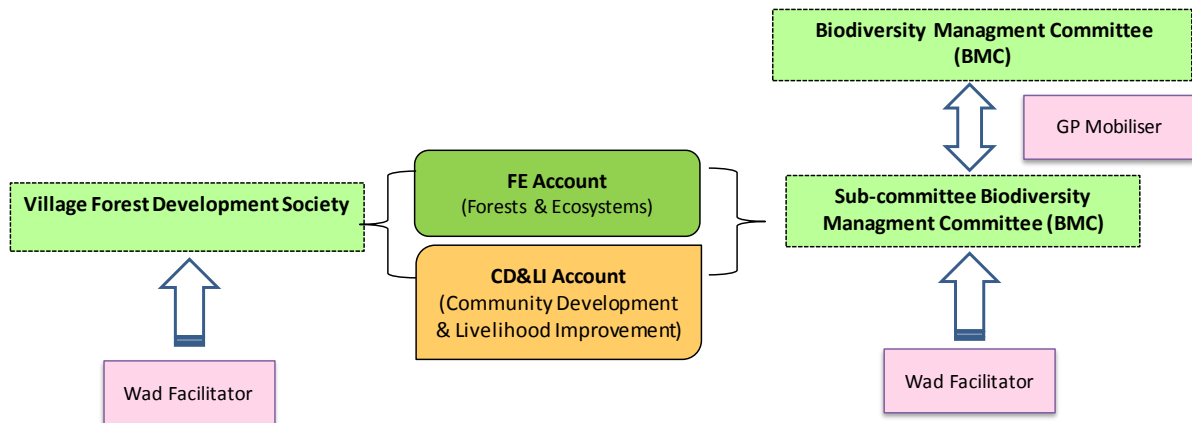
Adopting the system in place for inter-sectoral linkages, PMU at state level will coordinate with the Planning Department, whereas at the division level DMU officer will assist and coordinate with the steering committee chaired by district collector. The steering committee is created to assist DPC for preparing draft district plan considering the development plans prepared by each Community Development Block Level Planning Committee for all Panchayat Samities within their jurisdictions. Similarly, FTU officer will assist and coordinate with Block Level Planning Committee whose Member-Secretary is block development officer.

4.5 Proposed Community Implementation Organisation: Village Forest Development Society (VFDS)

4.5.1 Overview

The key institution to be engaged in the Project would be VFDSs. The constitution of VFDS including its roles and responsibilities are well spelt out in the PFM Regulations 2001.

At the same time, wherever relevant, the Project will take advantage of Biodiversity Management Committee (BMC), which is constituted on the basis of the Biological Diversity Act, 2002 will be engaged for works especially in and around protected areas. For the Project, VFDS and sub-committees of BMC are regarded as ward level implementation organisation. VFDS or sub-committees of BMC shall be selected as the project's community implementation organisation in a flexible manner based on needs and necessities of the project intervention areas. The proposed institutional arrangement at ward level is described in **Figure 4.5.1**.



Source: JICA Study Team (2017)

Figure 4.5.1 Proposed Institutional Arrangements at Community Level

Indicative proposed institutional arrangements for VFDS is presented in **Attachment II.4.5.1**.

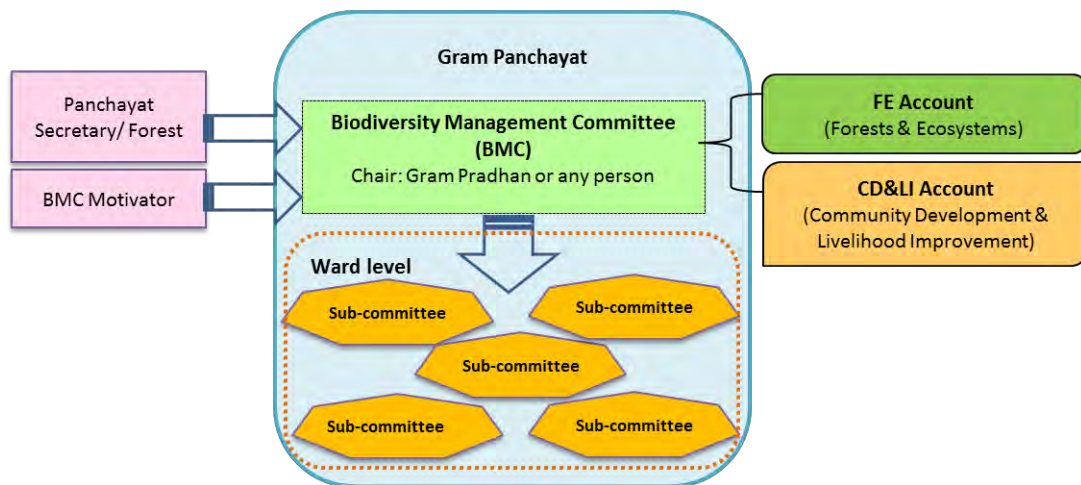
4.5.2 Further Option for Long Term Perspective

Though this will not be the institutional arrangement to be taken up in the Project, as an option, the newly constituted BMC could also be considered as the key and sole implementation body for the Project or any other projects/ schemes under the PRI set-up. Under section 41(1) of the Biological Diversity Act, 2002, it is envisaged that every local body shall constitute BMC for the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats etc. within the territorial jurisdiction of the local body. As per the Biological Diversity Rules, 2004, BMC shall be constituted having maximum 7 members – President being any person from within the Panchayat, and Panchayat Secretary of the Gram Panchayat also to be secretary for the BMC. In HP, normally, Gram Pradhan is being nominated as president of BMC. A new notification has been issued by the state government (notification no. FFE-A(B) 19-2/2017 – 54060609 dated August 8, 2017), according to which forest guards of HPFD is to be nominated as secretary of BMC at Gram Panchayat level. This entrusts responsibility with the forest guards in addition to the regular departmental responsibilities and duties.

As per the provisions in the Act, BMC needs to be consulted while taking any decision relating to the use of biological resources and knowledge associated with such resources occurring within the territorial jurisdiction of the local body. BMC may levy charges by way of collection fees from any person accessing or collecting any biological resources for commercial purposes from areas falling within its territorial jurisdiction. Thus, under the act provisions, BMC have been entrusted with immense responsibilities and powers for conservation and management of biological resources.

Also, Local Biodiversity Fund is to be constituted by the state government where any institution of self-government is functioning. Under this fund a BMC is eligible to receive grants or loans that shall be utilized for conservation and promotion of biodiversity in the areas falling within the jurisdiction of concerned local body and for the benefit of the community in so far such use is

consistent with the conservation of biodiversity. Under the option, the following institutional arrangement for the Project at Gram Panchayat level could be considered.



Source: JICA Study Team (2017)

Figure 4.5.2 Image of Biodiversity Management Committee as Community Implementation Organisation

To operationalise this institutional arrangement, a notification has to be brought in by the state government to undertake forestry and community development interventions as per the requirement of the Project, and could also open and operate separate bank accounts within the domain of Local Biodiversity Fund to have proper accounting with clear distinction of project funds with other funds being received by the BMC.

Within the domain and framework of the PRI functioning the roles and responsibilities of the Panchayat secretary and forest guard also need to be clarified by the HP state government to avoid conflicts and overlap in functions and accountability. As an institutional arrangement, a functional and operational understanding also need to be reached between HPFD and the State Biodiversity Board (SBB) who is mandated to steer the biodiversity agenda of the state.

4.6 Key Managerial Features of Proposed Institutional Arrangements

The following are the key managerial features to be adopted and adhered by PMU, and by HPFD/ state to make the institutional arrangement effective, and to function within the framework of government systems.

4.6.1 Budgetary Provision

HPFD will take all necessary measures to secure the funds required for smooth implementation of the Project, and there would not be any delay in implementation due to insufficient budgetary provisions of the annual project cost including state share. For fund allocations, a sub-budget line will be created in the state budget line of HPFD in name of the Project.

4.6.2 Accounting Procedures









The budget allocations will flow from the HP state government to HPFD to provide the funds further to PMU without any delays as per the annual budget and plan approved by GB and subsequently by HPC. As per the institutional arrangement, the funds received by HPFD from the state will be given to PMU as grants for each financial year. Similarly, PMU will further provide the funds to DMUs both for 'Department' mode and 'PFM' mode interventions, who in turn would further provide funds to VFDSs/ BMCs, the key implementing institutions for PFM, community development and livelihood initiatives. PMU will have no rights to divert the funds received for the Project for any other purposes or other projects.

PMU would open a bank account exclusively for the Project, and will be managed by the CEO/ Chief Project Director as per the bye-laws and Rules & Regulations of the society. PMU would ensure to adopt a unified accounting procedure based on double accounting system at all levels. PMU would create finance and accounting procedure for the Project, and adopt it within first six months of its operation.

To receive project funds, DMUs and village implementing units (VFDSs/ BMCs) will operate separate bank account(s) in the nationalized banks for the purpose of the Project. The funds from the project account with PMU will regularly go to the designated project bank accounts with DMUs as per APO on quarterly or semi-annual basis following the guidelines and procedures mentioned in the operation manual, and utilizing any of the available banking transaction options. DMUs would further provide the funds to FTUs for 'department' mode activities, as well as the funds to the community level institutions both for forestry operations (PFM) and community development & livelihood improvement to /VFDSs/ BMCs project accounts on advice of FTUs without delays and according to respective annual implementation plans (AIP). **Table 4.6.1** provides system of fund flows.

Process of putting forward budget request, fund flow and submission of Statement of Expenditures (SOE)/ Utilization Certificates (UC) by various levels is depicted in **Figure 4.6.1**.

Table 4.6.1 Proposed Fund Flow and Control System for the Project

| Steps | Fund Request Initiator | Control System | Fund Release Authority | Fund Recipients | Nature of Fund | SOE/ Utilization Certificate Issuance | SOE/ Utilization Certificate Submission |
|-------|--|---|--|-------------------------|--|---------------------------------------|---|
| 1 | PCCF (HoFF), HPFD | Annual Budget allocation (line item) | Finance Department, State Govt. | HPFD | Budget from consolidated funds | HPFD | State Finance Department; |
| 2 | PMU  | APO | HPFD  | PMU (Society) | Grant-in-Aid | PMU | CAAA (DEA) |
| 3 | FCCU  | Advice Note based on the Divisional APO | PMU  | DMU | Grant-in-Aid | DMU | PMU with copy to FCCU |
| 4 | DMU  | Advice Note based on the Range APOs | PMU | DMU | Grant-in-Aid | FTU | FCCU with copy to DMU |
| 5 | FTU   | Advice Note based on the Range APO | DMU  | VFDS/ BMC | Grant-in-Aid | VFDS/ BMC | DMU with copy to FTU |
| 6 | VFDS/ BMC | FEMP/ CBMP/ CD&LIP | VFDS/ BMC | VFDS/ BMC sub committee | Block Grant (*) | VFDS/ BMC | FTU |
| | CIG/SHG/ | Business Plan | | CIG/SHG | Block Grant (*) or Financial Institutions/ Banks | | |

Source: JICA Study Team (2017)

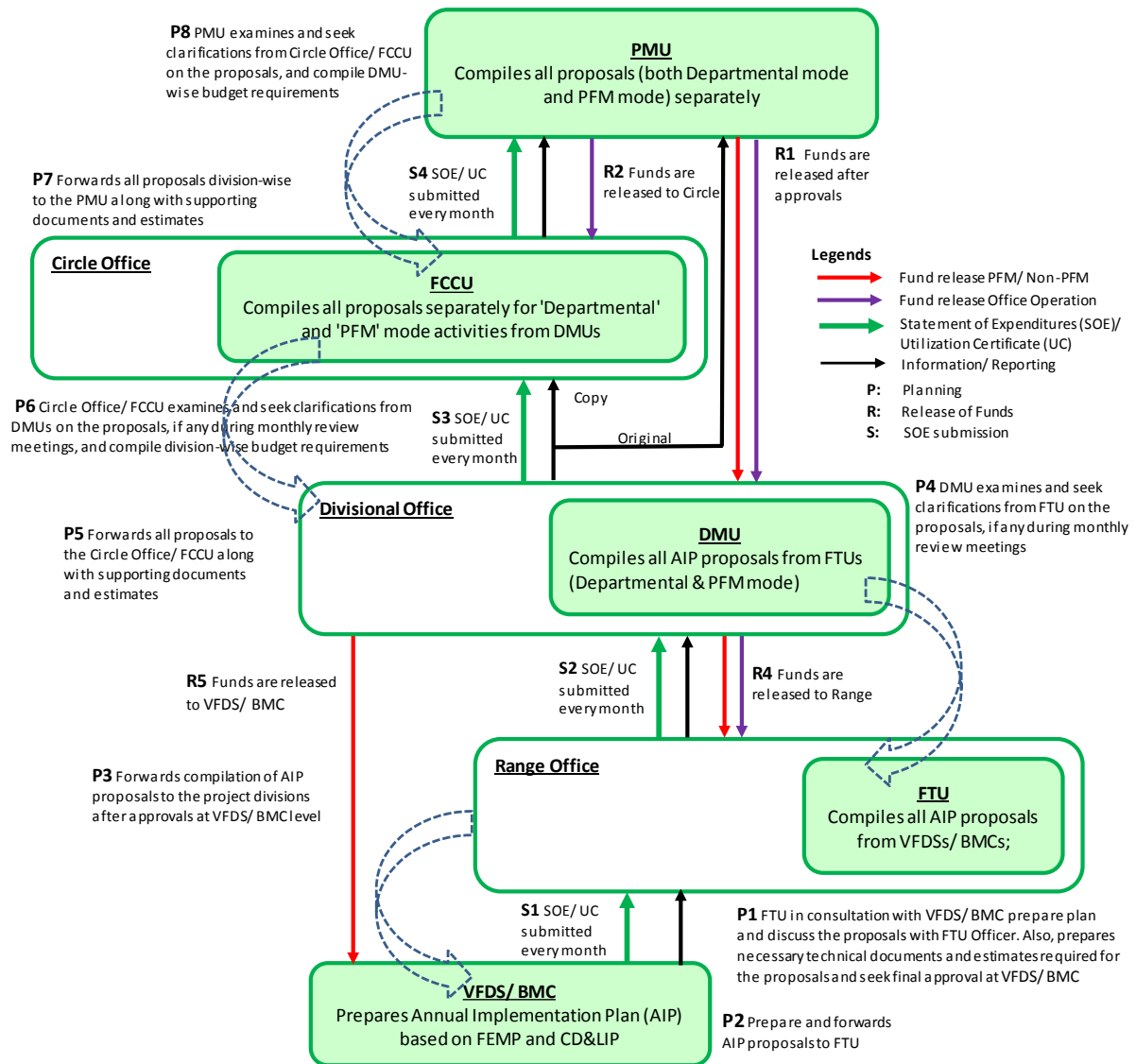
*CIG/SHGs or any such enterprises that are visualized to be supported under the Project should be planned for linking with the financial institutions/ banking system instead of extending loan through Block Grant. To secure the loan project may support refinancing support for these financial institutions in collaboration with NABARD etc. Rather, Block Grant could be utilized for creation of 'Village Common Property'.

4.6.3 Auditing

According to the existing financial procedure the state grants to any registered society extended from the consolidated funds of state/ GOI are liable to Comptroller and Auditor General of India (CAG) audits. CAG derives such powers from the Constitution and the CAG's Duties, Powers and Conditions of Services (DPC) Act, 1971, and its subsequent amendments. Offices of the accountants general in the states form the part of these formations. Thus, financial audits may also be carried out for each financial year by CAG.

Also, according to the Society Registration Act, a society is required to have a statutory annual audit conducted by a chartered accountant (CA). Thus, annual statutory audits by CA would be carried out for the accounts of PMU, and if required further investigate the project accounts at the divisions and with the community level institutions (VFDSs, BMCs and CIGs/SHGs). To establish internal financial discipline and control, concurrent audits would be instituted by PMU, quarterly or biannually. Such concurrent audits would be regularly reviewed by GB.

The community level institutions are also subject to statutory audit, which is elaborated in Attachment II.4.5.1. Audit of BMC would be undertaken as prescribed under clause 46 "Audit of Accounts of Biodiversity Management Committee" of the Biological Diversity Act 2002.



Source: JICA Study Team (2017)

Figure 4.6.1 Budget Request, Fund Flow and submission of SOE/ Utilization Certificates

4.6.4 Compliances of General Financial Rules and General Rules of Business

In order to have smooth compliances with General Financial Rules (GFR) and General Rules of Business (GRB) of Government of HP, PMU must induct experienced Finance Controller/ Finance Officer from the State Finance Service cadre who should have exposure and orientation of managing externally-aided funds. In case state government is not able to provide such eligible officer, equally competent and experienced person from HPFD could be deputed.

The personnel in position will facilitate submission of SOEs to JICA through Central Aids, Accounts and Audit Division (CAAA) under Ministry of Finance, Department of Economic Affairs (DEA) and MoEF&CC, and to the state government. S/he will ensure better coordination with the state Finance Department for smooth project implementation, as well as with the CAAA, JICA and MoEF&CC for getting clearance on reimbursement claims in timely manner. Female candidate in state finance cadre or HPFD will be encouraged to join on the position.

4.6.5 Structural Integrity

The basic purpose of creation of society (PMU) is for the implementation of the JICA assisted project, and thus there is no intention of creating a dual administrative structure within the forestry sector in the state. The existing charges and authorities of HPFD will remain intact regardless of the creation of PMU as an autonomous society. In case, the function of PMU ceases after project completion, the assets/ infrastructure created under the Project will be transferred to HPFD through provisions in its bye-laws as well as following the phase-out strategy agreed with the state government. This will ensure the organisational integrity of PMU (Society) with HPFD.

4.6.6 Procurement

Procurement of goods and services for the Project shall be implemented in accordance with the “Guidelines for Procurement under Japanese ODA Loans” dated April 2012 and selection of consultants shall be in accordance with “Guidelines for Employment of Consultants under Japanese ODA Loans” dated April 2012. PMU may make use of the state procurement rules, but JICA’s guidelines shall overrule whenever such procurement rules are in conflict.

QCBS method will be adopted by PMU that generally has the following stages of selection, viz., a) Publication and invitation for Expression of Interest (EOI), b) Screening of proposals and preparing short-list, c) Inviting technical and financial proposals through Request for Proposal (RfP), d) Technical evaluation of proposals, e) Opening and evaluation of financial proposal based on the qualifying technical score, and f) Based on the combined technical and finance score, inviting top ranked agency/ organization for negotiations. Before, evaluation of technical proposals, sometimes presentation on the technical proposal is also requested by the client, and accordingly reflected in the ‘Special Conditions’ of the RfP.

The procurement plan, to be taken up during the first year of the project implementation, has been suggested and indicated in the project implementation plan. The procurement plan will be updated at least annually or as required, to reflect the actual project implementation needs and improvements in institutional capacity.

As per the HP state government notification (no. Fin.1-C(14)1/83 dated September 6, 1995), approval is required from the Council of Ministers for purchase of new vehicles. Thus, in case vehicles are not procured, the allocations for purchase of vehicles could be utilized for hiring vehicles during the project implementation period.

4.6.7 Corpus/ Revolving Fund

For the effective usage of any corpus/ revolving fund provisioned under the Project, PMU would develop policy/ procedure/ guidelines for accessing and utilizing of corpus/ revolving funds (interest and principle amount, and its rotation), at the time of developing the operational manual for the Project. These policy/ procedures/guidelines would be approved by GB and HPC along with the operation manual, and systematic records of utilization of such funds will be maintained

at PMU. The approved guidelines to be disseminated amongst project stakeholders, especially for the community level institutions.

CHAPTER 5 PROPOSED IMPLEMENTATION SCHEDULE

Assuming that the loan agreement (L/A) would be signed during fourth quarter of Year 0, a project implementation schedule is tentatively planned between the second quarter of Year 1 and goes till third quarter of Year 9. However, some of the activities would get initiated from first quarter of Year 1 on a retroactive reimbursement basis given an understanding between the JICA and the state government. The project duration is 10 years, starting from year 2018/19. The key project activities will be carried out in three (3) batches each with its own timeline.

Not later than first quarter of Year 1, PMU and its implementing Units (DMUs and FTUs) would be constituted within a society (HPFELIPS) through a government order (GO). HPFD would start identifying key personnel to be deployed in PMU, DMUs and FMUs accordingly to the institutional arrangements. Chief Project Director would be the first appointment at PMU, and would take lead to complete all necessary amendments and GOs/ notifications required as per the time bound action plan soon after a pledge has been made. Notice for procurement of consulting services would also be announced soon after signing of the L/A.

The preparatory phase is assumed for around two years starting from Year 1, however utilising the past experience of project implementation of earlier JICA assisted projects, PMU will be required to expedite and advance on the planned activities as much as possible. It would be necessary for the PMU to ensure that while expediting initial activities, envisaged steps and processes do not get diluted.

During first quarter of Year 1, PMU would start preparing the tenders and contracts to be floated for procuring required goods & services, and for initiating construction/ extension of civil works as well. PMU would follow the procurements guidelines and processes envisaged as per the Minutes of Discussions (MoD).

PMU would also start working on the preparation of operation manual for the Project based on experiences by HPFD and similar loan projects in other states. PMU may also start working on preparation of other guidelines and manuals. Project guidelines and manuals would be most critical and important activities including orientation of the key project staff on the project processes. Thus, timely hiring of the consulting services would be of immense importance. The duration of the project management consultant (PMC) would be 36 months, and is tentatively planned from April 2019.

Besides setting up offices, initiating building extension/ renovation, hiring of vehicles, purchasing of furniture and fixtures, hiring of human resources (direct hiring as well as outsourcing), focus of PMU would also be on identification of potential intervention areas as well as potential Gram Panchayats/ wards (VFDSs, BMC subcommittees), and will prepare the exhaustive list at the earliest. Shortly after, identification of implementation modes (PFM mode/ departmental mode), survey and mapping, mobilisation of potential communities, selection of target communities, and planning by target communities will be followed. These activities would get aligned with the selection and identification of VFDS/BMC batches.

PMU will make efforts to complete all critical and important preparatory activities that are linked with the initiation of PFM, community based biodiversity management and livelihood interventions, and would be prerequisite for works in forest areas as well. Other component activities would get aligned with the pace of the preparatory phase progress. It would also be important to initiate the capacity development interventions as scheduled to prepare the project staff and other stakeholders well to execute the planned interventions. A summary of the proposed project implementation schedule has been prepared and is presented in **Table 5.1.1**. Proposed detailed project implementation schedule is given in **Attachment II.5.1.1**.

Table 5.1.1 Summary of Proposed Project Implementation Schedule

| Item | Year 0 2017/18 | | | | Year 1 2018/19 | | | | Year 2 2019/20 | | | | Year 3 2020/21 | | | | Year 4 2021/22 | | | | Year 5 2022/23 | | | | Year 6 2023/24 | | | | Year 7 2024/25 | | | | Year 8 2025/26 | | | | Year 9 2026/27 | | | | Year 10 2027/28 | | | | Yr 11 | Yr 12 |
|---|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|-------------------|----|----|----|--------------------|--|--|--|-------|-------|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | | | | | |
| L/A Period | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Period | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Implementation Period | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Appraisal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pledge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signing of L/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pre-Qualification of Consultation Services | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Consultation Services | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Component 1: Sustainable Forest Ecosystem Management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 Preparatory Works for Participatory Forest Management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 Participatory Forest Management (PFM) Mode | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 Training of VFDSs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.4 Departmental Mode | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.5 Training of Project related staff of HPPD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.6 Research | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Component 2: Biodiversity Conservation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 Scientific Biodiversity Management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.2 Training of Project related Staff of HPPD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.3 Research | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 Community Based Biodiversity Management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Component 3: Livelihood Improvement Support | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1 Community Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2 NTFP based Livelihood Improvement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3 Non NTFP based Livelihood Improvement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Component 4: Institutional Capacity Strengthening | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 Preparatory Works | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.2 Capacity Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.3 M&E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.4 Research | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.5 PMC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.6 Phase Out | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Source: JICA Study Team (2017)

CHAPTER 6 PROPOSED PROCUREMENT AND IMPLEMENTATION METHOD

The proposed project activities can be roughly categorised into the following three kinds:

- i) Departmental works conducted directly by PMU, DMUs, and FTUs
- ii) Works conducted by community based organisations (CBOs) such as VFDSs, BMC sub-committees, CIGs and SHGs
- iii) Works conducted by resource organisations, support organisations, and other contracted organisations/individuals

Procurement and implementation methods for the above three categories of activities in the Project are summarised in **Table 6.1.1** and project activity-wise procurement and implementation methods are described in **Attachment II.6.1.1**.

Table 6.1.1 Overall Procurement and Implementation Methods

| Implementer (Type of work) | Procurement/ Implementation Method |
|---|--|
| i) Departmental Works | Mainly by direct work (partially on a contractual basis and by price quotation) |
| ii) Works by CBOs | Contractual basis through MOU (direct work by CBOs) |
| iii) Works by Resource Organisations and Others | Contractual basis |

Source: JICA Study Team (2017)

Departmental work would be implemented by PMU, DMUs and FTUs on a direct undertaking work basis or a contractual basis. Recruitment of members of local communities and project related CBOs for labourers or any other capacities for departmental works, is encouraged. Procurement of equipment and goods will be conducted through bidding based on price quotations or in accordance with the existing procurement rules and regulations in HP.

In principle, CBOs will implement all project related activities on the basis of a Memorandum of Understanding (MOU) or other forms of agreement/contract with the DMUs through which the accountability of the works would be entrusted to CBOs.

For procurement of category iii) stated above, the PMU will call for expressions of interest (EOI) by advertisement in local newspapers of the State as well as the division. A free, unbiased and fair process of resource organisation selection shall be ensured. A selection/appraisal committee will be formed by members of the PMU and other stakeholders concerned. Criteria for selection of resource organisations will be prepared by PMU that include experience, organisational staff and strengths.

The Project Management Consultant (PMC) will be selected through international competitive bidding in accordance with the JICA's guidelines.

CHAPTER 7 OPERATION AND MAINTENANCE

The operation and maintenance framework for the Project is described below.

Table 7.1.1 Operation and Maintenance Framework

| Item/ Institutions | Operator | Maintenance Mechanism |
|--|-----------|---|
| PFM assigned area | VFDS | During the phase out period, FEMP shall be revised and the records of the assigned areas including maps with GPS reading of boundaries shall be handed over to VFDS. The area shall be maintained by the VFDSs. In case the financial assistance is required, FEMP fund shall be created by the Project to facilitate the operation and maintenance of the areas. |
| Treatment area by Departmental mode | HPFD | Prior to the completion of the Project, the inventory of the treated areas along with the maps depicting the treatment areas shall be handed over to HPFD. It shall continue to operate and maintain the areas treated by the Project in the post project period. Necessary human resource/ financial arrangement shall be made by HPFD. |
| Nurseries under Departmental mode | HPFD | The certificate of work completion shall be prepared by the Project and handed over to HPFD. It shall be the owner of the nurseries assisted by the Project and thus, responsible for their operation and maintenance during the post project period. |
| Infrastructures created under the Scientific Biodiversity Management | HPFD | The inventory of the assets created by the Project for sustainable biodiversity management shall be prepared and handed over to HPFD. It shall be responsible for operation and maintenance of the infrastructures created under the scientific biodiversity management sub-component. Necessary financial arrangement shall also be made by HPFD. |
| Assets Created Under Community Based Biodiversity Management | BMC | Some infrastructures may be established using the CBMP fund or CD&LI fund. Such assets shall be owned by the respective BMC who would also be responsible for the Operation and Maintenance in the post project period. PMU shall carry out the inventory of the assets created under Community Biodiversity Management Component and chalk out the O&M mechanism during the phase out period. |
| VFDS | VFDS | VFDS is to be registered as an autonomous society and shall continue to operate for the interest of its members. |
| BMC | BMC | The Project shall work with the existing BMCs and to enhance their capacities. Thus, the BMCs continue to operate of their own in the post project period. The Project shall support revisiting of the CBMP and CD&LIP during the phase-out phase. |
| CD&LIP Fund (Revolving) | VFDS/ BMC | A part of CD&LIP Fund operates as a revolving fund to be used by the VFDS/ BMC members to be used for livelihood related activities. When the Project completes, the fund shall be handed over to VFDS/ BMC and thereafter, the fund can be made available to all the registered users of VFDS/ BMC. The operation and maintenance of the fund shall rest with the respective VFDS/ BMC. The operation modality in the post project period shall be defined by PMU/ PMC during the phase out period. |
| FEMP/ CBMP Fund | VFDS/ BMC | To enhance the financial sustainability of VFDSs/ BMCs, FEMP/ CBMP Fund shall be created by the Project. The fund shall be transferred during the phase out period to each VFDS/ BMC's FEMP/ CBMP account. The operation modality shall be defined by PMU/ PMC prior to the transfer of the fund. VFDS/ BMC shall be responsible for operating the fund as per the prescribed procedure. In case, VFDS/ BMC decides to use one part of the fund as revolving, the management and maintenance of the fund shall remain as the responsibility of VFDS/ BMC. |
| Hydro cultural fodder production unit | VFDS | These fodder production units shall be handed over to the VFDS that have participated in the pilot research project. The maintenance of the unit shall be made the responsibility of the participating VFDS. |

| Item/ Institutions | Operator | Maintenance Mechanism |
|---|--|--|
| NTFP/ Non NTFP Cluster Organisations | Cluster Organisations | The cluster based organisations are organized to aggregate produces and facilitate marketing for better profitability. Once the Project is completed, these organizations shall be come self sustaining. Especially for NTFP based cluster organizations may continue to be assisted by Him Jadi-Buti cooperative society/ producer group in case such entity is organized. |
| Him Jadi-Buti Cell | Him Jadi-Buti Cell | Him Jadi-Buti Cell is to be established within PMU for facilitation and promotion of NTFP cultivation and marketing. The cell will be assisted by the Project for the initial 5 years and thereafter, depending on its performance, it shall be proposed to become a cooperative society or producer group. Once they acquire the status of cooperative or producer group, it shall operate of its own. |
| CIG/ SHG | CIG/ SHG or HPRLM or Cluster Organisations | CIGs/ SHGs are organized at the community level for livelihood improvement. CIGs seeking to further advance their activities and having cluster organisations nearby shall approach such cluster organisations to obtain technical and managerial support. SHGs under the Project shall be made NRLM compliant and thus, these groups shall be integrated as SHGs of HPRLM. Otherwise, CIGs/ SHGs intend to continue their activities shall manage their activities on their own or pass the resolution to dissolve. |
| GIS/ MIS established by Project | HPFD | GIS/ MIS shall be designed by the Project to be made compatible with the existing GIS/ MIS system of HPFD. During the phase out period, PMU shall be responsible for ensuring the compatibility in coordination with HPFD. The system shall be handed over to HPFD upon completion of the Project and thus, the ownership and responsibilities of O&M shall also be transferred to HPFD. |
| Assets created under the Project for Project Management | HPFD | An inventory of the assets created under the Project shall be prepared during the phase out stage of the Project and handed over to the HPFD. All the ownership of such assets shall be transferred to HPFD and thus, the responsibilities of operation and maintenance shall rest with HPFD. |
| HPFEM&LIP PMU | HPFD | HPFEM&LIP PMU will be established as an autonomous society and shall dissolve after the project completion. The officers/ staffs on deputation basis shall return to the respective offices whereas the contractual staffs shall be relieved. |

Source: JICA Study Team (2017)

CHAPTER 8 OPERATION AND EFFECT INDICATORS

Operation and Effect Indicators are developed for each component of the Project. According to the JICA Operation and Effect Indicators Reference for Loan Projects (July 2014), the former is defined to assess whether the project outputs are operated or used as intended and the latter is to measure the effects on the project beneficiaries as well as in the project areas. The indicators shall be monitored during implementation on a regular basis by PMU and reported in its quarterly and annual report. Apart from the indicators listed here, the Project also adopts the indicators listed in the Project Log Frame (II.3.5) and gender monitoring indicators as in **Attachment II.3.7.4.2**. The target shall be fixed by PMU during the initial phase of the project implementation. Depending on the practicability of the methods of establishing indicators, PMU may finalise the Operation and Effect Indicators with assistance from PMC and concurrence of JICA shall be sought when revising.

Table 8.1.1 Operation Indicators

| Project Component | Indicator | Method of establishing indicator | Target | Purpose |
|--|--|---|---|---|
| 1. Sustainable Forest Ecosystem Management | PFM Mode | | | |
| | Survival percentage of trees planted by the Project | (Count of plants survived/ count of seedlings planted) x 100; in 1st and 3rd year after planting; to be done species wise | xx % (1st year); xx% (3rd year) | To assess the quality of seedlings supplied and SMC works. |
| | Number of seedlings planted | Counts of seedlings planted in the treatment area; species wise | xx nos | To verify the plantation models adopted |
| | Number of seedlings replaced | Counts of seedlings replaced in the treatment area; species wise | xx nos | To assess whether the loss of saplings is compensated as required. |
| | Area treated by ANR and plantation | Area of treatment area (ha) based on the GPS boundary data; species wise | xx ha | To assess the areas treated by the Project |
| | Number of VFDS established | Counts of VFDS established (recorded by the Project) or MOU exchanged | xx nos | To verify the existence of the community institutions that would be responsible for the management of the treated areas |
| | No of VFDS members trained and participated in the exposure visits | Counts of the VFDS members trained/ participated in the exposure visits; (gender segregated) | xx nos Gender target: Women participants to be minimum 40% | To assess the capacity of the community institutions that would be responsible for the management of the treated areas |
| | Number of Ward Facilitators engaged | Counts of Ward Facilitators (gender segregated) | xx nos Gender target: 50 % of Ward facilitators shall be women. | To assess whether the sufficient handholding is given to the community institutions |
| | Departmental Mode | | | |
| | Survival percentage of trees planted by | (Count of plants survived/ count of seedlings planted) | xx % (1st year); xx% (3rd year) | To assess the quality of seedlings supplied and |

| Project Component | Indicator | Method of establishing indicator | Target | Purpose |
|-----------------------------------|--|--|---|--|
| | the Project | x 100; in 1st and 3rd year after planting; to be done species wise | | SMC works. |
| | Number of seedlings planted | Counts of seedlings planted in the treatment area; species wise | xx nos | To verify the plantation models adopted |
| | Number of seedlings replaced | Counts of seedlings replaced in the treatment area; species wise | xx nos | To assess whether the loss of saplings is compensated as required. |
| | Area treated by ANR and plantation | Area of treatment area (ha) based on the GPS boundary data; species wise | xx ha | To assess the areas treated by the Project |
| | Production capacity of nursery | Counts of saplings produced and areas improved (ha) | xx no of saplings produced per ha | To assess the operation of the nursery assisted by the Project |
| | Number of PMU/ FCCU/ DMU/ FTU officers/ staffs took part in the training programmes/ exposure visits | Counts of the PMU/ FCCU/ DMU/ FTU officers/ staffs took part in the training programmes/ exposure visits (Gender segregated) | xx nos | To assess the capacity of the PMU/ FCCU/ DMU/ FTU officers/ staffs to undertake sustainable forest management operations |
| 2. Biodiversity Conservation | Number of infrastructure established for habitat improvement | Counts of the assets established per site | xx no per site | To assess whether the planned facilities are established |
| | No of participants attended the awareness programmes for biodiversity conservation | Counts of number of participants to the awareness programmes | xx no per programme (gender segregated) | To assess the community level awareness created for biodiversity conservation |
| | No of BMCs took part in the project activities | Counts of MOUs exchanged with BMC | xx nos | To assess whether the community level institutions are established |
| | No of BMC members trained and participated in the exposure visits | Counts of the BMC members trained/ participated in the exposure visits; (gender segregated) | xx nos Gender target: Women participants to be minimum 40% | To assess the capacity of the community institutions that would be responsible for the management of the treated areas |
| | No of PMU/ FCCU/ DMU/ FTU officers/ staffs took part in the training programmes/ exposure visits | Counts of the PMU/ FCCU/ DMU/ FTU officers/ staffs took part in the training programmes/ exposure visits (Gender segregated) | xx nos | To assess the capacity of the PMU/ FCCU/ DMU/ FTU officers/ staffs to undertake sustainable forest management operations |
| 3. Livelihood Improvement Support | Assets created using CD&LIP fund | Inventory of the assets, site verification | xx site/ set (type wise) | To assess the utilization of CD&LIP fund |
| | Amount of CD&LIP revolving fund used and repaid | Counts of borrowers, financial record of VFDS/ BMC through project FMIS | xx nos of borrowers; INR xxx on loan, % recovery | To assess the proper operation of the CD&LIP fund |
| | Areas brought under NTFP plantation | Areas planted (ha); species wise | xx ha | To assess the planned NTFP species are planted |
| | No of NTFP saplings planted | Counts of saplings planted; species wise | xx nos | To assess the planned NTFP species are planted |

| Project Component | Indicator | Method of establishing indicator | Target | Purpose |
|---|---|--|-----------|---|
| | No of clusters developed for NTFP/ Non NTFP based livelihoods | Counts of NTFP clusters based on the record of PMU | xx nos | To assess whether the community institutions for NTFP based livelihoods are established |
| | No of members of NTFP and Non NTFP clusters | Counts of NTFP cluster members (gender segregated) | xx nos | To assess the level of participation amongst the community members |
| | No of CIGs/ SHGs formed | Counts of CIGs/ SHGs from the project records | xx nos | To assess the establishment of community level groups for livelihoods |
| | No of CIG/ SHG/ Cluster organization members trained/ took part in exposure visits | Counts of participants (gender segregated) | xx nos | To assess the activities to enhance the resilience of community institutions towards livelihood shocks are conducted. |
| 4. Institutional Capacity Strengthening | Number of persons participated in training/ workshop/ exposure visits (PMU/ FCCU/ DMU/ FTU) | Counts of participants (gender segregated) | xx nos | To assess whether the capacity of project personnel are strengthened. |
| | Number of technical guidelines/ manuals developed for dissemination | Counts of copies prepared (topic wise) | xx copies | To assess whether the materials are prepared for capacity enhancement of the implementing agency |
| | Spatial database of the project area is established and operationalised | Verification of the establishment | xx set | To assess the facilities are in place to assist PMU in project management |
| | Number of government orders and notifications issues in relation to the Project | Counts of orders/ notifications issued | xx nos | To assess whether the necessary facilitation was given to PMU for smooth and effective project management |

Source: JICA Study Team (2017)

Table 8.1.2 Effect Indicators

| Project Component | Indicator | Method of establishing indicator | Target | Purpose |
|--|--|---|---|--|
| 1. Sustainable Forest Ecosystem Management | Increase in areas having multi-layered/ multi-species forest cover | Assessment of the sample plots and satellite imageries/ site verification | xx% and xx ha brought under the multi-layered/ multi species forest cover | To assess the effectiveness of the PFM/ Department Mode forestry operation |
| | Improvement of forest cover density in the project areas | Assessment of the sample plots and satellite imageries/ site verification | xx% and xx ha brought under different density classes | To assess the effectiveness of the PFM/ Department Mode forestry operation |
| | Areas of pastures/ grassland improved for quality grass production | Assessment of the sample plots; interview with the grassland users | xx ha of area improved, xx kg harvested from the area, | To assess the effectiveness of the grassland related interventions To improve palatable species |
| | Reduction of time spent for collection of fodder grass/ fuel wood | Interviews with the VFDS members; baseline to be established before intervention | xx % of time spent for fodder/ fuel wood collection reduced | To assess the effectiveness of the fodder grass/ fuel wood related interventions |
| | Reduction in incidences of fire and grazing in forest areas | Reports of HPFD | xx% reduction in incidences of fire and inappropriate grazing | To assess the effectiveness of the project interventions related to fodder/ grass and forest fire prevention |
| | No of labourers engaged and wages paid | Muster roll, project FMIS (gender segregated data) | xx person days (gender and origin segregated) | To assess the economic improvement as a result of project interventions |
| 2. Biodiversity Conservation | Reduction of areas infested by exotic species | Areas in the monitoring plots that are affected by the exotic species; monitoring plots are to be established before treatment on a sample basis. | xx ha of treated areas | To assess the effectiveness of the project intervention to mitigate exotic species |
| | Reduced incidences and compensation for human-wildlife conflicts | Counts of incidences recorded by HPFD | reduced number of incidents in project areas | To assess the effectiveness of habitat improvement, awareness creation and capacity enhancement of BMCs |
| | Reduction of incidences of poaching reported to HPFD | Counts of incidences recorded by HPFD | ditto | To assess the effectiveness of awareness creation and enhancement of BMCs |
| | No of BMCs exercising ABS | Records of BMCs | xx nos | To assess the effectiveness of the capacity enhancement interventions for BMCs |
| 3. Livelihoods Improvement Support | Reduction in per capita fuel wood consumption | Household survey (baseline, midterm, end term etc.) | xx% | To assess the effectiveness of the community development and livelihood interventions |
| | Increase in per capita | Household survey | xx % | To assess the effectiveness |

| Project Component | Indicator | Method of establishing indicator | Target | Purpose |
|---|--|--|---------------------------------------|--|
| | household income | (baseline, midterm, end term etc.) | | of the livelihood interventions |
| | Volume of NTFPs harvested and marketed | Species wise record of cluster organizations | xx kg (species wise) | To assess the effectiveness of NTFP cluster organisations |
| | Changes in value of NTFP market price | Species wise record of cluster organizations | xx% (species) | To assess the effectiveness of NTFP cluster organisations |
| | Profits of the cluster based organizations | Cluster wise profit based on the financial report/ project MIS | xx INR | To assess the effectiveness of the cluster organisations |
| | Profits earned by CIGs/ SHGs by livelihood activities using CD&LIP | CIG/ SHG wise profit earned based on the financial report/ project MIS | xx INR | To assess the effectiveness of the small scale/ household level livelihood interventions |
| 4. Institutional Capacity Strengthening | PMU can prepare and execute the sustainability plan on its own. | Verification of sustainability plan and progress record | Number of plans prepared and executed | To assess the capacity of PMU to execute the project sustainability plan |
| | Number of VFDS/ BMC revised FEMP and CD&LIP | Counts of revised FEMP and CD&LIP | 100 % | To assess the capacity of community level institutions to plan for the post project period |

Source: JICA Study Team (2017)

CHAPTER 9 ENVIRONMENT AND SOCIAL CONSIDERATIONS OF THE PROJECT

9.1 Overview

The funding agency, JICA, demands all the projects to adopt JICA Guidelines for Environment and Social Consideration and place sufficient safeguard measures to prevent and mitigate adverse environmental and social impacts that are induced by the project activities. Although the prioritised Project (the Project) does not anticipate to induce significant adverse environmental impacts nor will it require loss of land, resettlement or livelihoods, the possibilities of causing negative environmental and social impacts cannot be denied until when the detail activities of sub-projects are defined at the project detailed preparation/ implementation phase. Therefore, in this chapter, capacities of implementing agency (IA) for environmental and social consideration is assessed and institutional arrangement with roles and responsibilities of each concerned institution is proposed. Then the following three draft frameworks are prepared by the Study Team to facilitate and ensure the proper application of the necessary safeguard measures by IA.

- a) Draft Environmental and Social Assessment Framework (ESAF)¹
- b) Draft Vulnerable Scheduled Tribes Planning Framework (VSTPF)²
- c) Draft Involuntary Resettlement Plan Framework (IRPF)

9.2 Institutional Arrangement and Capacities of Implementing Agency for Environmental and Social Consideration

9.2.1 Overview

HPFD will be the IA for this Project and HPFD proposes to establish a Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project Society (HPFEMLIPS), through which it will execute the proposed activities. All activities of the Project shall be implemented in accordance with the legislation system at national and state level which provides clear guidelines and procedures for environmental and social safeguard. However, HPFD does not have dedicated units or personnel for implementation of environmental procedures such as screening, categorisation and environmental review as per prevalent laws and regulations.

In this regard, Environmental Social Assessment Framework (ESAF) and Vulnerable Scheduled Tribes Planning Framework (VSTPF) shall be the principal documents, which provide the basis for detail procedures for screening, categorisation and environmental review of the Project and its activities. Under the proposed project concept, the IA does not intend to hire companies to implement sub-projects; however, it may hire companies to implement specific infrastructure construction of some sub-projects, if required.

¹ The TORs of the Study from JICA request to draft Environmental Assessment Framework (EAF). Considering the nature of the framework is not only focused on the environmental aspects, rather social perspective is also required, the name of the framework is changed into "Environmental and Social Assessment Framework (ESAF)".

² The TORs of the Study from JICA request to draft Indigenous People Planning Framework (IPPF). After examining its target groups to be covered in the project targeted area, the name of "Vulnerable Scheduled Tribes Planning Framework (VSTPF)" is applied. Please refer **Section 11.3.3** for more detail explanation.

9.2.2 Institutional Arrangement

In the Project, most of the environment and social issues and protection are managed through the institutions responsible for forest management i.e. HPFD, is responsible for overall planned intervention in the Project, legal/policy development, ensuring adequate consultation and participation, inclusion of vulnerable groups such as STs, poor/ women headed households, in planning and implementation and the equitable distribution of benefits associated with site-level project interventions. Other agencies would also be involved in different environment and social safeguard aspects or issues. The district administration is the designated agency responsible for land administration, land acquisition and disbursement of compensation and providing Resettlement and Rehabilitation (R&R) benefits to the project-affected families.

ESAF will be implemented through the institutional structure of the Project and a director/ officers at each administrative level shall be appointed as focal persons for ESAF compliance.

Table 9.2.1 highlights the institutional structure for ESAF with key environmental and social management roles and responsibilities.

Table 9.2.1 Institutional Structure for ESAF Implementation and Monitoring

| Institution | Role in the Project | (Additional) Role and/or Responsibility in ESAF |
|---|---|---|
| High Power Committee/ Governing Body | <ul style="list-style-type: none"> - Highest decision-making body - Lay-down the broad policy framework for functioning of HPFEMLIP Society - Review the Society's performance - All administrative and financial powers - Monitor utilisation of funds | <ul style="list-style-type: none"> - Overall supervision on ESAF and its implementation and M&E - Facilitation and coordination with various line departments and other agencies - Provide directions/advice to PMU to ensure smooth/ efficient project operation on environment and social consideration - Periodical checks and due diligence on safeguards reports, monitoring data etc. |
| Project Management Unit (PMU) | <ul style="list-style-type: none"> - Project implementation, supervision and monitoring of all activities. - Documentation and reporting | <ul style="list-style-type: none"> - Owner and implementation of ESAF - Report to concerned departments in the state government as well as to JICA in relation to environmental and social consideration - Information disclosure through project information brochures and project homepage, etc. - Consultation and guidance to FCCU/DMU/FTU, and field level officers on information disclosure and consultation - Ensure FPIC consultation - Technical guidelines on beneficiary selection, safeguard checks/ guidelines for particular activities (if required) - Development of planning/ monitoring forms, review of monitoring data, reporting, assistance with evaluations - Finalise criteria for categorisation (Category B or C) as per JICA Guidelines as well as exclusion criteria - Review of participatory Environmental and Social Assessments - Performance of due diligence follow-up - Guide, instruct, prepare guidelines, establish and operate M&E, dissemination of project information, hand-holding support in the field for all project activities |
| Forest Circle Coordination Unit (FCCU) | <ul style="list-style-type: none"> - support and facilitate the PMU for project implementation at circle level, and would extend all technical inputs and guidance to the forest division level at requirement basis and through regular review meetings which frequency to be determined during the preparatory phase of the Project - FCCU would not form the part of the society | <ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at circle level, including the screening and selection of sub-projects and determination of the required procedures for specific sub-projects following the guidance/instruction of PMU, - Liaise with other line departments at the appropriate level, for inter-sector convergence - Provided any specific support required for implementation and monitoring of the Project |
| Division Management | <ul style="list-style-type: none"> - function as the dedicated and extended wing of the PMU for project implementation at division | <ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at division level, - Conduct the screening and selection of sub-projects and |

| Institution | Role in the Project | (Additional) Role and/or Responsibility in ESAF |
|-------------------------------------|---|---|
| Unit (DMU) | level and as a subordinate office of the autonomous society. - facilitate project implementation at division level, and would extend all technical inputs and guidance to the FTUs | determine the required procedures for specific sub-projects following the guidance/instruction of PMU, - Liaise with other line departments at the appropriate level, for inter-sectoral convergence - Provided any specific support required for implementation and monitoring of the Project - Coordinate with subject matter experts |
| Field Technical Unit (FTU) | - facilitate project implementation at the range level, and would extend all technical inputs and guidance at field level on day-to-day basis | - Coordinate with range-level implementing organisation to select sub-projects with screening procedures and to conduct participatory Environmental and Social Assessments - Support range-level implementing organisation with monitoring and reporting, logistical support for independent evaluations. - Regularly undertake site visits at construction areas to ensure compliance of ESAF. |
| Gram Panchayat Level | | |
| Village-Level Implementation Bodies | - Assist in selecting target beneficiaries - Clarify local needs and expectations on the Project | - Conceive and raise awareness in the locality on environmental and social considerations. - Provision of support in micro planning activities at ward level to GP level. - Participating in Environmental and Social Assessments - Support HPFEMLIPS for FPIC consultation, and due diligence checks. |

Source: JICA Study Team (2017)

The Project Management Unit (PMU) headed by the CPD shall be responsible for project administration, programme management, procurement, financial management, supervision of field units, project implementation, monitoring and evaluation, and providing direction and support to the Project. Thus, the overall responsibility of the implementation of ESAF shall be vested with PMU. Under PMU, one Director (Position: Additional Project Director (M&E, Environmental and Social Safeguards)) is required to be given a responsibility to ensure implementation and monitoring and compliance of environment and social safeguards, and provide technical advice on environmental and social safeguard during the project implementation. And FCCU/ DMU/ FTU officers shall be responsible for ensuring implementation and monitoring of ESAF at circle level, division level and range level respectively.

However, as mentioned earlier, HPFEMLIPS or HPFD does not have any dedicated units or personnel for the purpose of ESC. Hence, one specialist in PMC and subject matter experts will support PMU for the compliance of the environmental and social safeguards for its smooth and efficient implementation such as environmental and social assessment, management and monitoring of the environmental and social aspects within the ambit of the Project, which are proposed as follows.

- ◆ (PMC member) Environmental and Social Consideration/ Environmental Economics/ PES Specialist: The specialist is planned to be deployed under the Project Management Consultant (PMC) to assist PMU on ESC issues of the Project. He/she is expected to support PMU to review the project activities with focus on the compliance on ESAF, provide guidance and technical advice to PMU for required environment and social safeguard measures, as well as reporting to JICA to ensure smooth and efficient implementation of environment and social safeguard measures.

- ◆ (Subject Matter Expert) Environmental and Social Consideration Expert (ESCE): ESCE shall/ could be engaged as contract basis with PMU from the initial Preparatory Phase of the Project. This is to assist the PMU in head start with the safeguard related actions while waiting for the PMC specialist to be placed. Once the project implementation begins, ESCE shall fulfil the gaps that may occur, while the PMC specialist is absent from the field. ESCE will report to the Director under PMU who would be vested with additional charge to ensure the compliance of ESC. ESCE will assist PMU for the following aspects:
 - i) To facilitate and coordinate with various implementation and line departments
 - ii) To update and finalise ESAF/VSTPF
 - iii) To develop appropriate training materials on environmental and social safeguards, following the requirements in ESAF
 - iv) To provide training courses and capacity enhancement at the different levels of stakeholders who will be designated with the responsibilities to ensure implementation of environment and social safeguards
 - v) To supervise/ manage the project activities to ensure that the required procedures indicated in ESAF are followed properly. The expert may also be required to follow-up in the field where particular issues are identified and report to the specialist/ PMU.
- ◆ (Subject Matter Expert) Environmental and Social Consideration Field Expert (ESCFE): ESCFE will also be engaged as contract basis with PMU, and will assist ESCE to provide the relevant trainings at respective administrative level such as preparation of the training materials, record minutes of meeting of the relevant consultation meeting, etc. Therefore, the expert shall be mainly allocated with focused on the training period, which are depicted in ESAF.

The institutional arrangement for monitoring system is basically same as the project component monitoring system. At the ward/GP level, monitoring and reviews will be conducted by respective level implementing organisation assisted by Ward Facilitators/ GP Motivators and report to FTU. Then, FTU officer shall compile monitoring results and reviews regularly, thereafter, DMU shall compile and report to PMU (CC: FCCU), which analyse the result and share to concerned departments in the state government as well as annual report to JICA.

9.2.3 Draft Environmental and Social Management System Checklist

As mentioned above, PMU shall mobilise ESCE at Preparatory Phase of the Project and the expert shall support PMU for the finalisation of ESAF document which fully addresses all issues arising under the Project and its activities/sub-projects. Mitigation measures will be built into project component design and implementation. Under the Project, as mentioned above, the overall coordination and support for ESAF will be provided through PMU headed by CPD and the Director vested with additional responsibility to ensure implementation and monitoring and compliance of ESAF during the project implementation. Under the supervision of PMU, his/her deputies will hold position as Environmental and Social Safeguard Managers for their activities in each designated work field. In order to examine the proposed institutional arrangement and enhance its system, the draft Environmental Social Management System (ESMS) Checklist for the Project has been prepared and depicted in **Table 9.2.2**.

Table 9.2.2 Draft ESMS Checklist

| No. | Questions | Answer | Improvement Plan |
|---|--|--|---|
| 1. Policy (Environmental and Social Policy) | | | |
| 1.1 | Does the financial intermediary/ executing agency have any formal environmental policy or procedures? If yes, please describe them and provide appropriate documentation. If no, does the financial intermediary /executing agency have any plan to set such policy or procedures? | No: The Executing Agency (EA), HPFD does not have formal environmental policies or procedures to avoid negative impact on the natural and social environment. However, all activities undertaken by EA must be implemented in accordance with the relevant environmental laws, policies and procedures of GoI (defined by MoEF&CC and others) and the state government of HP. | The existing Indian and HP state legal/policy framework is sufficient for eliminating and mitigating serious adverse environmental and social impacts. The Project may involve certain sub-projects which may have minor environmental impacts (e.g. small-scale community infrastructure development and constructions). Such activities would not require environmental clearance as per the legislations. ESAF and the VSTPF, to be prepared which are the principal documents to define measures to avoid adverse environmental and social impacts. |
| 1.2 | Are there any types of sub-projects in which the financial intermediary / executing agency will not take part due to the environmental risks? (e.g., sub-projects involving handling of hazardous wastes or endangered plants or animals). | No: The Project and its activities and sub-projects are not anticipated to have any such environmental risks (e.g., handling of hazardous wastes or endangered plants or animals). Moreover, the Project will involve local communities in some sub-projects which will be in participatory manner as nature and therefore there is some flexibility for appropriate interventions in accordance with the ground situations. | Activities associated with the Project with serious environmental impacts beyond the mitigation capacity of HPFEM&LIP will be eliminated or avoided. ESAF/VSTPF are the principal document which defines measures to avoid environmental and social adverse impact. Activities with serious environmental risks which are beyond the mitigation capacity of the natural environment will be avoided under the above frameworks. |
| 2. Procedures (screening, category classification and review procedures) | | | |
| 2.1 | Does the financial intermediary / executing agency have any environmental procedures such as screening, categorisation and environmental review? If yes, please describe. | No: The Indian legislation system provides clear guidelines and procedures for environmental safeguard. The EA shall not responsible for implementation of environmental procedures such as screening, categorisation and environmental review as per prevalent laws and regulations. | ESAF/ VSTPF shall be the principal document, which will clarify the basis for detail procedures for screening, categorisation and environmental review of the Project and its activities. Additional supplemental documents to be prepared during the preparatory stage of the Project. |
| 2.2 | Please describe how you ensure that your sub-project companies and their sub-projects are operated in compliance with the national laws and regulations and applicable JICA's requirements. | Under the proposed project concept, basically, the EA shall implement sub-projects by themselves including the small community and forest infrastructures with support and assistance from communities and/or NGOs. EA shall hire companies to implement specific infrastructure construction of some sub-projects, if required. | ESAF will be prepared to address issues arising under the Project and its activities/sub-projects. VSTPF will be also prepared to cover instances where the Project will directly impact or involve forest dependents including vulnerable ST and forest dwellers. Mitigation measures will be built into project component design and implementation. |
| 2.3 | How are environmental considerations taken into account in the credit review and approval process for project loans or equity investments? | In the proposed ESAF, sub-project exclusion criteria are prepared. The sub-project review, selection and approval will be conducted in accordance with the set sub-project exclusion criteria. | N/A |
| 2.4 | How are environmental issues taken into account in deciding whether to offer or | These issues shall not arise during project implementation, as the EA will not offer or extend any commercial credit, | N/A |

| No. | Questions | Answer | Improvement Plan |
|---|--|--|---|
| | extend commercial credit, working capital finance, trade finance, payment services and other financial services to a company? | working capital finance, trade finance, payment services and other financial services to any company under the Project. | |
| 3. Organisation and Staff (institutional framework and staff allocation) | | | |
| 3.1 | Please provide us with the organisation chart of the financial intermediary/ executing agency's Environmental and Social Management System (ESMS). | The EA does not have ESMS, as it is not required for their present role and responsibility, therefore the organisational chart is not available at the moment. | Organisational structure for ESAF/VSTPF implementation in the Project will be clarified at the initial stage of the Project. The organisational chart will be prepared accordingly. The recommended institutional arrangement is proposed in ESAF/VSTPF. |
| 3.2 | Who is responsible for environmental and social management within the financial intermediary / executing agency? (name/role and title) | Chief Project Director of HPFELPS, and under CPD, a Director would be vested with additional responsibility to ensure implementation and monitoring and compliance of ESAF. | N/A |
| 3.3 | Are there any staffs with training for environmental and social considerations in the financial intermediary / executing agency? If so, describe. | Key officers are well-trained in the application of the Forest Conservation Act relating to forest clearance procedures, and other regulations specific to different aspects of forest protection and conservation in HP state. Also, some officers involved in other donor funded projects such as Mid Himalayan Watershed Development Project by World Bank, as environmental and social safeguard officers, are trained through their capacity development programme. However, in most of cases not trained in environmental and social impact assessment procedures and risk management. | Under the HPFELPS, CPD is assisted by directors at the PMU level. A director will serve as Environmental and Social Safeguard director for activities in each designated work field and in charge of overall monitoring and management of ESAF related information for the Project. Officers in charge of environmental and social safeguard will be selected at the divisional as well as range level. Training will be provided by EA to improve understanding of environmental and social safeguards/ assessments, screening, monitoring procedures. If required, PMU will hire the services of an external agency/ experts in the field of environment and social consideration so as to assist EA and ensure implementation of the Project. |
| 3.4 | Are there any technical staffs with an engineering/industry background responsible for technical analysis of credit proposals? | Officers are trained in basic engineering for small scale infrastructures relevant to the tasks (forest roads, soil and conservation measures, slope stabilisation measures (small check dams, drainage line treatments etc.), small buildings etc.). | For small scale community infrastructures development, technical training will be provided to EA staff and other key stakeholders accordingly. |
| 3.5 | What experience, if any, do the financial intermediary / executing agency have of hiring or dealing with environmental consultants? | So far, the EA has not hired environmental consultants, as their activities has had minimal environmental impacts. | It is anticipated, under the given organisational structure for implementation of activities of HPFELPS, that an Environmental Social Consideration Specialist/Expert(s) may be required to be hired by EA. Thus, preparation and finalisation of terms of reference for the expert at the initial stage of the Project are required. In the preparatory stage, Environmental and Social Consideration Specialist is planned to be directly hired by PMU, to support PMU for preparation and updating of ESMF/VSTPF, and to assist PMU on environmental and social |

| No. | Questions | Answer | Improvement Plan |
|---|---|---|---|
| | | | consideration issues of the Project. |
| 3.6 | What was the budget allocated to the ESMS and its implementation during a year? Please provide budget details including staff costs and training as well as any actual costs. What was the budget allocated to the ESMS and its implementation during a year? | At present, EA does not have an ESMS and therefore no budget has been specifically allocated to it. | All costs associated with matters related to environmental and social safeguard will be covered by addressing relevant issues in the Project's approach or technical methodologies, thus, it normally does not incur as separate budget allocations. However, some budget allocation towards environmental and social considerations under the Project, mainly in the form of capacity building costs and cost for hiring agency/experts in the field of environment and social consideration may be additionally required. |
| 4. Monitoring and Reporting (Reporting procedures and monitoring) | | | |
| 4.1 | Do you receive environmental and social monitoring reports from sub-project companies that you finance? | N/A | It is anticipated that there will be very limited or no usage of sub-project companies during project implementation. However, environmental and social monitoring of sub-project activities will be conducted as part of the regular project monitoring. |
| 4.2 | Please describe how you monitor the sub-project company and their sub-projects' social and environmental performance. | N/A | The Project's framework for M&E system will serve as the basis for carrying out environmental and social monitoring/ evaluation of sub-project activities. |
| 4.3 | Is there an internal process to report on social and environmental issues to senior management? | Yes: There is no systematic monitoring and reporting process for environmental and social issues. However, for issues arising from field-based programmes are reported to senior management as and when required. Particular issues may be highlighted when necessary and dealt with accordingly. | The Project will develop M&E system including MIS for monitoring and reporting on project progress, processes and impacts, and also Grievance Redress Mechanism which are proposed in the ESAF. Safeguards monitoring and reporting will be built into this system. |
| 4.4 | Do you prepare any social and environmental reports? - For other multilateral agencies or other stakeholders - E&S reporting in the Annual Report | No: Environmental and social reports have not been prepared systematically by EA. Only impacts assessments on donor funded projects have been prepared by external consultants. | EA will prepare and submit monitoring reports to JICA on a regular basis. These reports shall contain designated sections on environmental and social aspects. The Project will include independent evaluations which will also assess the Project's implementation of the ESAF/VSTPF and environmental and social issues related to the Project. |
| 5. Experience (results of the environmental and social management) | | | |
| 5.1 | Has the financial intermediary / executing agency signed any national or international agreements or declarations concerning environmental issues? | No: International agreements or declarations on environmental issues have been signed by the Government of India and are thus applicable to the Project. The EA has not signed any such agreement/ declarations. | N/A |
| 5.2 | Has the financial intermediary / executing agency ever received any criticism of its environmental record? If so, what was the | No: EA has not received any such criticism so far. | ESAF/VSTPF is the principal document which defines measures to avoid adverse environmental and social impacts, therefore to avoid criticism. Potential areas of criticism against EA includes the following. |

| No. | Questions | Answer | Improvement Plan |
|---|--|---|--|
| | criticism? | | <ul style="list-style-type: none"> - Eviction/resettlement of peoples, particularly ST, from Reserved Forest and other protected areas. - Persecution of forest dependent peoples living inside or fringe of Reserved Forests. - Inability to control wildlife which inflicts damages on forest inside/fringe communities. <p>These areas will require further efforts to avoid any criticism in future. The Project will also build the EA's capacity for more collaborative and participatory approaches to include social safeguards for protecting communities and especially the vulnerable segments of society, ensuring that they are properly consulted and are able to participate and benefit from the Project in appropriate ways.</p> |
| 5.3 | Does the financial intermediary / executing agency carry out environmental audits of its properties to analyse health and safety issues, waste disposal, etc.? | No: The EA itself is not responsible for environmental audit. | N/A |
| 5.4 | Please state any difficulties and/or constraints related to the implementation of the ESMS. | The EA, as an organisation, still lacks experience in managing and monitoring environmental and social risks in a systematic way will be the principal challenge. | Through implementing the Project, establishing the proposed safeguards frameworks and measures assisted by relevant expert/specialist(s), and through specific trainings, EA will build their capacity and experience for managing and monitoring environmental and social risks. |
| Need of Capacity Development and Improvement Plan (Improvement and the need for capacity building measures) | | | |
| ESMS requires different knowledge and skills sets at different management levels (i.e. field skills as well as administrative/management skills) The indicative capacity development programmes are proposed in the ESAF. | | | |

Source: JICA Study Team (2017)

9.3 Management and Mitigation of Environmental and Social Risks

9.3.1 Draft Environmental and Social Assessment Framework (ESAF)

(1) Overview

Unlike a typical infrastructure project, this Project is anticipated to have multi-sectoral interventions and activities, being implemented at several sites with many sub-projects and many of these sub-projects are yet to be defined in detail (site location, size/scope of the activity). In these circumstances, it would be inappropriate at this stage of project preparation to assess the environmental and social impacts and propose detailed management and mitigation measures. However, the Study Team assessed the broad types of activities proposed and outlined procedures to manage and mitigate potential risks associated with the activity during the project implementation. Accordingly, ESAF which provides guidance on the appropriate management and mitigation measures against environmental and social risks was prepared as the main safeguards instrument considering the existing environmental and social management systems in Indian and HP state as well as the JICA requirements.

(2) Structure

ESAF of the Project is structured as follows and the full ESAF with detailed measures and procedures is presented in **Attachment II.9.3.1**;

- i) **Project Summary Description** will describe the project objectives, project components and expected outcomes, phasing of Project, etc.
- ii) **Environmental and Social Safeguard Policies of JICA:** briefly describes JICA's environmental and social safeguard policies, and clarifies how the Project shall be categorised and what types of measures will be required.
- iii) **Existing Environmental and Social Management Systems:** Outline the legal and policy context for environmental and social safeguard in India as well as in the HP state.
- iv) **Environmental and Social Considerations and Potential Impacts:** details-out the environmental and social considerations within the Project and assessment of positive and negative impacts.
- v) **Environmental and Social Management Measures and Monitoring:** explains the procedures to be followed to manage and monitor environmental and social aspects.
- vi) **Environmental Management Plan and Environmental Monitoring Plan:** describes the management measures adopted for various environmental concerns, risks associated with the Project/ sub-project activities and monitoring plans to address environmental concerns.
- vii) **Institutional Arrangement and Capacity Development for ESAF:** identifies the recommended institutional arrangement and capacity development and training requirements for effective implementation of the ESAF.
- viii) **Consultations and Participation:** describes the mechanisms for consultations and participation.

- ix) **Grievance Redress Mechanism:** identifies the available and suggested mechanisms for grievance redress, and
- x) **Cost Estimation and Budget Allocation:** identifies the required cost to implement ESAF, with the estimation of the necessary human resources and capacity development programme, and its budget allocation.

(3) Target Social Groups

ESAF shall be applicable to all communities and peoples within the project area. The draft framework is designed to ensure their participation in the course of the project implementation and include as beneficiaries as well as to avoid/mitigate any impacts affected by the Project. **Table 9.3.1** indicates the key groups identified in ESAF to address environmental and social considerations. It should be noted that an individual or household may be categorised into more than one of the categories below;

Table 9.3.1 Key Social Groups for ESAF

| Social Groups | Definition/ Description |
|--------------------------------------|--|
| Scheduled Tribes (STs) | According to the Article 342 of the Constitution, STs are the tribes or tribal communities or part of or groups within these tribes and tribal communities which have been declared as such by the President through a public notification. As per 2011 Census, tribal population in the country is about 8.6% of the total population, while in HP state, they represent 5.71% of the total population of the state. Eight tribal communities are notified in HP state, namely, i) Bhot, Bodh, ii) Bhot, Bodh, Gaddi, iii) Gujjar, iv) Jad, Lamba, Khampa, v) Kanaura, Kinnaura, vi) Lahaula, vii) Pangwala, and viii) Swangla, and all of these groups reside in the project area, in which the highest concentration is found in districts of Kinnaur, Lahaul and Spiti and blocks of Bharmour and Pangi of Chamba district. Also, three areas are nominated as Scheduled Areas by Constitution Order 102, dated 21st November 1975; 1) Lahaul and Spiti district, 2) Kinnaur district, and 3) Pangi tehsil and Bharmour sub-tehsil in Chamba district. |
| Scheduled Castes (SCs) | Traditionally, there are four main castes and one category of the society falls outside the caste system, and occupy the lowest rank in the ritual hierarchy of Indian society. These communities were notified as the SCs as per provisions contained in Clause 1 of Articles 341 and 342/ Clause 24 of Article 366 under the Constitution of India which require special consideration for safeguarding their interests and to accelerate their socio-economic development. In HP state, there are 65 notified communities belonging to SCs. Unlike STs who live in isolated region, major portion of the SC population lives in scattered households or concentrated colonies with people of other caste groups, although there exists an invisible social segregation. The SCs in the project area comprise about 27% of the total population in the project area, and about 8.2% of the total population of the state. Highest distribution of SCs is in districts Sirmour (30.34%), Solan (28.35) and Shimla (26.51%). |
| Other Backward Classes (OBCs) | Other Backward Class (OBC) is a collective term used by the GoI to classify castes which are socially and educationally disadvantaged; the Constitution of India describes OBCs as “socially and educationally backward classes”. All tribal communities and castes deemed under article 341 and 342 of the constitution of India are considered backward classes and there are OBC, which are not scheduled. According to the Department of Social Justice and Empowerment and the Himachal Backward Classes Finance and Development Corporation, 48 communities belong to OBC. Social and educational backwardness has been identified as reasons due to which the OBCs also need special attention. OBC population constitutes about 13.51% of the total population of the state. |
| Transhumance | Transhumance is a type of controlled nomadism or pastoralism, a seasonal movement/ migration of people along-with their livestock between fixed summer and winter pastures, i.e., higher pastures in summers and lower pastures in winters. In the state, Gaddi and Gujjar are two nomadic communities which account for 69% of the total ST population in the state (Census of India 2011). - Gaddi: a semi nomadic tribe and usually have a permanent homestead either in the valleys of Kangra, Kullu or in the foothills of Una. During summer months, May-June to August, these |

| Social Groups | Definition/ Description |
|---|--|
| | <p>people move to the higher areas in district Lahaul & Spiti. Before the on-set of winter, usually by end-August, the Gaddis along with flock, usually comprising of sheep and goats, travel back to their respective destinations or beyond to the foot-hills of Una, where they engage in agricultural activities; they own small parcels of land. Gaddi women engage in the weaving of wool.</p> <ul style="list-style-type: none"> - Gujjar: a pastoral nomadic tribe, who move to high alpine regions during summer in search of good pastures. Their herds comprise of sheep, goats, buffaloes and a few cows. Typically, the Gujjars migrate in groups (known as kafila or convoy) of several households, and carry all essential household items that serve as protection from the elements, utensils, etc., on horseback. By September, the Gujjars start moving towards the plains, where they spend the winters. |
| Forest Dwellers | <p>The term “forest dweller” refers to the Forest Dwelling Scheduled Tribes (FDST) and the Other Traditional Forest Dwellers (OTFD)” as members or communities who primarily reside in and who depend on the forests or forest lands for bona fide livelihood needs, as per “The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006” known as FRA.</p> <p>As per a FAO Working Paper No: APFSOS/WP/27³, forest dwellers have been classified into 3 categories:</p> <ul style="list-style-type: none"> - People living inside forests, often as hunter-gatherers or shifting cultivators, and heavily dependent on forests for their livelihood on a subsistence basis - often consisting of scheduled tribe or people from minority ethnic groups - People living near forests, usually engaged in cultivation outside the forest, who regularly use forest products (timber, fuelwood, bush foods, medicinal plants etc) partly for their own subsistence purposes and partly for income generation - People engaged in commercial activities such as trapping, collecting minerals or forest industries such as logging, may be part of a mixed subsistence and cash economy, depend on income from forest-dependent labour <p>If a person is certified as a “Forest Dweller” legally, he/she has all right over the forestland. However, in practical, the progress of the administrative procedures is very slow in HP state. As per the FRA status report of February 2016 of Ministry of Tribal Affairs (MOTA), GoI, 346 titles were distributed including 108 community claims, but objections were raised by the MOTA on the constitution of Forest Rights Committees (FRCs) at the Gram Panchayat level and process of claim settlement, therefore, these titles were not given.</p> |
| Poor Households | <p>Poor households tend to be more dependent on forest resources and are thus disproportionately impacted by forest protection and development activities. For various reasons, they may also be excluded from decision-making processes.</p> <p>In HP state, 23.87% of the rural population is considered to be below poverty line. The highest incidences of poverty are observed in Chamba district (54.15%), followed by Lahaul-Spiti (43.50%). Followed by Shimla (29.07%), Sirmaur (19.44%), Una (16.92%) and Kullu (16.24%) indicated the lowest figures. “Scaling the Heights (World Bank, 2015)”, mentions successful reduction of the poverty rate regardless of gender and caste, both in the rural and urban areas. The report has highlighted that the poverty level in the rural areas of the state has declined from 36.8 % in 1993 to 8.5 % in 2011. This is better than any other states in the country, but still consideration on poor households are required as one of the marginalised groups in the society.</p> |
| Landless Households | <p>According to “The Himachal Pradesh Tenancy and Land Reforms Act, 1972” by Revenue Department, HP government, “Landless person” means a person who holding no land for agriculture purposes, whether as an owner or a tenant, earns his/her livelihood principally on manual labour on land and intends to take the profession of agriculture and is capable of cultivating the land personally. The landless households are often dependent on forest resources for their daily subsistence needs and as a safety net in times of duress, but neglected from development interventions as targets are often focused on farmers who have land and assets.</p> |
| Women and Female Headed Households | <p>Women play a specific and differentiated role in terms of agricultural production and forest management (e.g. sowing, tending/weeding, marketing/selling produce, collection of NTFPs, craft production). In HP state, many women collect fodder grasses from the forest areas and feed their cattle and collect fuelwoods to be used for cooking and warming the houses which not having LPG.</p> |

³ “People and Forests in Asia and the Pacific: Situation and Prospects”, Asia-Pacific Forestry Sector Outlook Study Working Paper Series, Regional Community Forestry Training Centre Kasetsart University, Bangkok, Thailand, by R.J. Fisher Somjai, Srimongkontip, Cor Veer assistance of Michael Victor Nitiya Kijtewachakul, December 1997

| Social Groups | Definition/ Description |
|-----------------------------------|--|
| | <p>In the recent past, along with the economic growth, literacy, education access to communication, banking services have improved amongst women. The proportion of women who have gone through ten or more years of education are much higher than the national average. On the other hand, women’s work participation and ownership of a house/land still significantly behind in comparison to rest of India so that females traditionally have not inherited any lands.</p> <p>Female Headed Households should also be a key target group as they are a particularly vulnerable sub-group with typically limited asset/livelihood options.</p> |
| Affected Persons/ Families | <p>Criteria to be defined as “Affected Persons/ Families” are as follows;</p> <ul style="list-style-type: none"> a) Whose land or other immovable property has been acquired, b) Which does not own any land, but family may be agricultural laborers, tenants with any form of tenancy or usufruct rights, share croppers or artisans, residing in the affected area for the last three years before acquisition of land, and who primary source of livelihoods has been affected due to acquisition of land, c) STs and other traditional forest dwellers who have lost their forest rights recognised by the FRA due to acquisition of land, d) Whose primary source of livelihood, three years prior to acquisition of land, is dependent of forests or water bodies, including gatherers of forest produce, hunters, fisher folk, boatman, etc., and whose livelihood is affected due to acquisition of land, and e) Member of family who has been assigned land by the government (central/ state) under any scheme, and such land has been acquired. |
| Displaced Families | <p>Displaces Families mean any family, that has to be relocated and resettled from the affected areas to a new resettlement site (<i>* Family will include a person with his/her spouse, minor children, minor brother and sister dependent on him/her</i>)</p> |

Source: Prepared by JICA Study Team (2017)

9.3.2 Draft Vulnerable Scheduled Tribes Planning Framework (VSTPF)

(1) Overview

In the Indian context, the term “Scheduled Tribe (ST)” is applied to refer “Indigenous Peoples” as used by JICA and other multilateral funding agencies, such as World Bank, Asian Development Banks, etc. And this framework shall be particularly applied to **individuals/communities who could be severely affected their daily lives by project activities among Scheduled Tribes (STs) and Forest Dwellers as defined in The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**. Among the two social groups, the number of forest dwellers would be quite small considering the progress of the implementation of FRA in the state as mentioned in **Table 9.3.1**, therefore, the name of the framework is replaced as “Vulnerable Scheduled Tribes Planning Framework” (VSTPF).

For the above targeted social groups, guidance for specific measures shall be provided under the framework which may be required in addition to the provisions of ESAF. Other vulnerable groups including poor households, the landless, women as well as deprived classes, such as the Scheduled Castes (SCs) and Other Backward Classes (OBCs) population are considered well in ESAF to ensure the opportunities for effective consultation, participation, receive appropriate benefits and are overall not adversely harmed by the Project.

The main objectives of VSTPF are (i) to ensure that the targeted social groups, affected by any additional project interventions, will receive culturally appropriate social and economic benefits from the Project, (ii) to ensure their participation in the entire process of project activities, and

(iii) to prevent any adverse impacts on the concerned individuals and communities as a result of the Project.

(2) Structure

The composition of the draft VSTPF prepared during the Study is listed below and described in **Attachment II.9.3.2.**

- i) **JICA’s Requirements on Safeguard:** briefly describes JICA’s requirements on social safeguard, and clarifies the measures which Project shall be addressed,
- ii) **Definition of the Target Social Groups under VSTPF:** analyses and defines the appropriate target social groups as the scope of VSTPF to ensure particular consideration in the course of the project design and implementation,
- iii) **Legal and Policy Framework for ST and Forest Dwellers:** Outline of the legal and policy context for ST and Forest Dwellers,
- iv) **Environmental and Social Risks and Mitigation Measures:** describes the environmental and social risks on the targeted vulnerable ST and Forest Dwellers and procedures to be followed to manage/mitigate and monitor the social aspects,
- v) **Framework and Procedures of Scheduled Tribes Plan:** indicates the required procedures for the VSTP preparation, including Free, Prior and Informed (FPIC) Consultation, Social Assessment (SA), micro planning, selection and screening of sub-project, Monitoring and Evaluation (M&E), and Grievance Redress Mechanism (GRM), and
- vi) **Institutional Arrangement and Capacity Development:** identify the required intentional arrangement and capacity development programme for preparation and implementation of VSTP.

(3) Target Social Groups under VSTPF

Table 9.3.2 summarises two rationales which help to determine the target social groups under VSTPF.

Table 9.3.2 Rationales to Determine the Target Social Groups under VSTPF.

| Item | Description |
|--|---|
| World Bank Safeguard Policy (Operational Policy 4.10) | <p>There is no widely accepted definition of indigenous peoples. The World Bank’s official position is that “because of the varied and changing contexts in which Indigenous Peoples live and because there is no universally accepted definition of Indigenous Peoples, this policy does not define the term. The OP 4.10 describes Indigenous People in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:</p> <ul style="list-style-type: none"> - self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; - collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories - customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and - an indigenous language, often different from the official language of the country or region. <p>The OP 4.10 also indicates that Indigenous Peoples may be referred to in different countries by such terms as ‘indigenous ethnic minorities,’ ‘aboriginals,’ ‘hill tribes,’ ‘minority nationalities,’ ‘scheduled tribes,’ or ‘tribal groups’. And in the Indian context, the term of Scheduled Tribes (STs) appears to be more in the line with the “Indigenous Peoples” described in the World Bank’s generic definitions. Degrees of social, cultural, ethnical,</p> |

| Item | Description |
|---|---|
| | linguistically, institutional and geographical distinctions fluctuate among STs. |
| The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA) 2006 | <p>The Forest (Recognition of Forest Rights) Act 2006 defines “the Forest Dwelling Scheduled Tribes (FDST) and the Other Traditional Forest Dwellers (OTFD)” as members or communities who primarily reside in and who depend on the forests or forest lands for bona fide livelihood needs (Section 2 Part c of the Act). The criteria and evidence required for a FDST and OTFD to claim rights under the Act are described as below.</p> <p>FDST:</p> <ol style="list-style-type: none"> 1) Must be a Scheduled Tribe in the area where the right is claimed; 2) Primarily resided in forest or forest land prior to 13-12-2005; and 3) Depend on the forest or forests land for bonafide livelihood needs <p>OTFD:</p> <ol style="list-style-type: none"> 1) Primarily resided in forest or forests land for three generation (75 years) prior to 13-12-2005; 2) Depend on the forest or forests land for bonafide livelihood needs <p>It is noteworthy to mention that the term “Forest Dweller” has a specific meaning in the context of the Indian forest legislation. If a person is certified as a “Forest Dweller” legally, he/she has all right over the forestland, however, in practical, the progress of the administrative procedures is very slow in HP state. As per the FRA status report of February 2016 of Ministry of Tribal Affairs (MOTA), GOI, 346 titles were distributed including 108 community claims, but objections were raised by the MOTA on the constitution of Forest Rights Committees (FRCs) at the Gram Panchayat level and process of claim settlement, therefore, these titles were not given.</p> |

Source: Prepared by JICA Study Team (2017) based on World Bank Safeguard Policy (Operational Policy 4.10) and The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA) 2006

Considering the World Bank’s OP 4.10, the FRA 2006 and actual socio-economic conditions in the state, the two social groups, i.e. **Scheduled Tribes (STs) and Forest Dwellers under FRA with only focused on the individuals/communities who could be severely affected their daily lives by project activities** are identified as the target social groups under the framework. The defined targeted social groups shall be identified at the stage of screening and selection of the sub-projects which further explained within ESAF.

In fact, STs in HP state are categorised into relatively “well-off” compared to other states. The number of STs in the state, having completed secondary or higher levels of schooling, in rural and urban areas is higher than other states (World Bank 2015) and Census of India (2011) provides that the literacy rate of STs in the state is 83.2% for male and 64.2% for female while the rate among STs as national average is 68.5% and 49.4% respectively. Also, work participation rate of STs in the state is much higher than average rate at union level and the rate in the state is ranked the third highest (53.5%) in the country. Considering the above situation, all STs as well as Forest Dwellers in project area are not necessarily required to be covered under VSTPF.

In HP state, “transhumance” is also one of the distinct social groups to be defined as “Indigenous People” according to the criteria of WB, and “Gujjar” and “Gaddi” are two nomadic communities in the state. Since, these two groups are declared as STs, and majority of STs, 69% are composed of these two tribes, VSTPF does explicitly refer to the transhumance as they are already a part of STs.

It should be also noted that SCs and OBCs who are often considered within a similar framework together with STs in the Indian constitution and legal framework are not treated as “Indigenous People” (except “Forest Dwellers” within the groups) in the framework since they are seen in all parts of India and throughout Indian society. These groups are more related to social status than a separate or distinct indigenous cultural group. For SCs and OBCs, appropriate and necessary

safeguard measures are already dealt with under ESAF to the above two groups as well as other vulnerable groups, such as landless poor households, women/female headed households.

9.3.3 Draft Involuntary Resettlement Plan Framework (IRPF)

(1) Overview

The Project will not involve any physical relocation nor involuntary resettlement as long as ESAF is fully applied for the project preparation and its implementation. However, there might be certain sub-projects that might require physical relocation or involuntary resettlement, especially for entry point activities or other project activities which could potentially lead to acquisition of lands for afforestation, soil and moisture conservation structures, creation of combined civil and bio-engineering structures, etc. Therefore, the Involuntary Resettlement Plan Framework (IRPF) has been designed to clarify the required procedures when any acquisition of private lands for construction activities related to the Project and its sub-projects are required which cause (i) loss of assets, (ii) restrictions to the use of or loss of access to places of interest, (iii) loss of existing sources of income and livelihood, and (iv) depreciation of adjacent property value, thus resulting in adverse impacts on the sustenance and livelihoods of the displaced persons. Following IRPF, the government is required to ensure: (i) there is a legitimate and bona fide public purpose involved, (ii) potential benefits and bona fide public purpose out-weighs the social impacts and social costs, (iii) only minimum land is being acquired, (iv) there is minimum displacement of people, (v) minimum adverse impacts on individuals affected, (vi) minimum disturbance to infrastructure, ecology, and (vii) no unutilised, previously acquired lands exist in the area.

The processes of consultations, grievance redressal mechanisms as well as the monitoring system are required to be followed as depicted in ESAF.

(2) Structure

IRPF is composed from the following contents and the full IRPF is described in **Attachment II.9.3.3;**

- i) Principles of Resettlement Plan (RP)**
- ii) Legal Framework**
- iii) Process of RPs Preparation**
- iv) Project Affected Population (PAPs) and its Eligibility**
- v) Evaluation of Affected Properties, Disbursement of Compensation and Resettlement Benefits**
- vi) Grievance Redress Mechanisms**
- vii) Funding/ Resettlement Budget**
- viii) Consultation**
- ix) Monitoring**

CHAPTER 10 PROJECT RISKS AND ASSUMPTIONS

For the effective and smooth implementation of the Project, the following external conditions and requirements shall be met, otherwise there may be significant impacts to project implementation.

1. Political stability during the Project so that the establishment of a proper implementing organisation will be supported by the political will of the HP state government, and the necessary budget for the human resources and other administrative costs are made.
2. No delay in fund disbursement during the implementation
3. No delay in procurement, approval and any other decision making by the High Power Committee and the Governing Body of the Project
4. No change in strategies, policies, plans, and organizational structures in the forest sector
5. Cooperation from other relevant line departments and Panchayat Raj Institutions
6. No critical social conflicts or disputes occurring in the target divisions
7. No drastic economic recession in the national and regional economy

The following external conditions and requirements shall also be met for the project investment and activities to achieve the desired and expected effects and impacts.

1. The macro-economy of the country will be stable.
2. No large-scale natural disasters, such as large-scale forest fire, landslides, severe flooding or earthquakes.
3. Climatic conditions in the target divisions are stable.
4. Employment conditions in rural areas in the regions are not drastically changed.
5. The prices of NTFPs and other forest products do not drastically drop.

The project risks are further analysed by using the risk management sheet provided by JICA. **Attachment II.10.1** shows the results of the risk analysis.

Part II: Attachments

Attachment II.2.3.1 Range-wise Permanent Forest Nursery Status in Proposed Project Divisions

| Division | Range | No of Ranges in Division | No of Nurseries | Average No of Nursery per Range | Total area of Nurseries (ha) | Average Area Per Nursery (ha) | Seedling Production 2016-17 | Seedling Production 2015-16 | Average Production Per Year | Average Production Per Nursery |
|---------------------|-----------|--------------------------|-----------------|---------------------------------|------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------|
| Bilaspur | Total | 7 | 13 | 1.9 | 7 | 0.52 | 402,000 | | 402,000 | 30,923 |
| | Sadar | | 2 | 2.0 | 2 | 0.85 | 100,000 | | 100,000 | 50,000 |
| | Swargaht | | 1 | 1.0 | 1 | 1.00 | 40,000 | | 40,000 | 40,000 |
| | Jhandutta | | 2 | 2.0 | 1 | 0.50 | 66,000 | | 66,000 | 33,000 |
| | Kalol | | 3 | 3.0 | 0 | 0.13 | 87,000 | | 87,000 | 29,000 |
| | Ghumarwin | | 2 | 2.0 | 1 | 0.38 | 46,000 | | 46,000 | 23,000 |
| | Bharari | | 1 | 1.0 | 0 | 0.10 | 11,000 | | 11,000 | 11,000 |
| Shree Naina Devi Ji | | 2 | 2.0 | 2 | 0.88 | 52,000 | | 52,000 | 26,000 | |
| Mandi | Total | 5 | 18 | 3.6 | 12 | 0.64 | 513,218 | 351,665 | 432,442 | 24,025 |
| | Panarsa | | 3 | 3.0 | 2 | 0.67 | 187,370 | 104,520 | 145,945 | 48,648 |
| | Kataula | | 5 | 5.0 | 5 | 0.90 | 139,880 | 136,955 | 138,418 | 27,684 |
| | Kotli | | 3 | 3.0 | 1 | 0.33 | 50,878 | 36,818 | 43,848 | 14,616 |
| | Drang | | 3 | 3.0 | 2 | 0.50 | 70,025 | 34,775 | 52,400 | 17,467 |
| | Mandi | | 4 | 4.0 | 3 | 0.63 | 65,065 | 38,597 | 51,831 | 12,958 |
| Nachan | Total | 4 | 6 | 1.5 | 5 | 0.78 | 400,000 | 400,000 | 400,000 | 66,667 |
| | Nachan | | 2 | 2.0 | 1 | 0.70 | 170,000 | 170,000 | 170,000 | 85,000 |
| | Pandoh | | 2 | 2.0 | 2 | 0.75 | 30,000 | 30,000 | 30,000 | 15,000 |
| | Thachi | | - | 0.0 | - | #DIV/0! | - | - | - | #DIV/0! |
| Seraj | | 2 | 2.0 | 2 | 0.90 | 200,000 | 200,000 | 200,000 | 100,000 | |
| Suket | Total | 6 | 30 | 5.0 | 10 | 0.32 | 621,192 | 684,292 | 652,742 | 21,758 |
| | Suket | | 4 | 4.0 | 1 | 0.33 | 84,817 | 93,157 | 88,987 | 22,247 |
| | Jaidevi | | 7 | 7.0 | 3 | 0.44 | 134,495 | 145,528 | 140,012 | 20,002 |
| | Kangoo | | 5 | 5.0 | 1 | 0.16 | 113,967 | 115,057 | 114,512 | 22,902 |
| | Jhungi | | 8 | 8.0 | 3 | 0.34 | 198,872 | 229,020 | 213,946 | 26,743 |
| | Baldwara | | 2 | 2.0 | 1 | 0.50 | 46,741 | 42,412 | 44,577 | 22,288 |
| | Sarkaghat | | 4 | 4.0 | 1 | 0.19 | 42,300 | 59,118 | 50,709 | 12,677 |

| Division | Range | No of Ranges in Division | No of Nurseries | Average No of Nursery per Range | Total area of Nurseries (ha) | Average Area Per Nursery (ha) | Seedling Production 2016-17 | Seedling Production 2015-16 | Average Production Per Year | Average Production Per Nursery |
|----------------|----------------|--------------------------|-----------------|---------------------------------|------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------|
| Karsog | Total | 4 | 17 | 4.3 | 11 | 0.63 | 621,426 | 543,169 | 582,298 | 34,253 |
| | Seri | | 5 | 5.0 | 2 | 0.47 | 123,839 | 178,952 | 151,396 | 30,279 |
| | Karsog | | 4 | 4.0 | 2 | 0.55 | 135,214 | 51,425 | 93,320 | 23,330 |
| | Pangna | | 4 | 4.0 | 5 | 1.25 | 217,873 | 162,792 | 190,333 | 47,583 |
| | Magroo | | 4 | 4.0 | 1 | 0.30 | 144,500 | 150,000 | 147,250 | 36,813 |
| Jogindernagar | Total | 6 | 14 | 2.3 | 11 | 0.76 | 300,000 | | 300,000 | 21,429 |
| | Dharampur | | 2 | 2.0 | 2 | 0.75 | 40,000 | | 40,000 | 20,000 |
| | Joginder Nagar | | 2 | 2.0 | 2 | 1.00 | 80,000 | | 80,000 | 40,000 |
| | Kamlah | | 2 | 2.0 | 2 | 0.75 | 35,000 | | 35,000 | 17,500 |
| | Ladbhadol | | 2 | 2.0 | 1 | 0.60 | 45,000 | | 45,000 | 22,500 |
| | Tikken | | 3 | 3.0 | 3 | 0.83 | 50,000 | | 50,000 | 16,667 |
| | Urla | | 3 | 3.0 | 2 | 0.67 | 50,000 | | 50,000 | 16,667 |
| Kullu | Total | 5 | 13 | 2.6 | 11 | 0.84 | 395,412 | 661,800 | 528,606 | 40,662 |
| | Kullu | | 4 | 4.0 | 2 | 0.56 | 109,300 | 162,700 | 136,000 | 34,000 |
| | Bhutti | | 4 | 4.0 | 3 | 0.86 | 212 | 29,000 | 14,606 | 3,652 |
| | Patlikuhah | | 3 | 3.0 | 3 | 1.08 | 200,000 | 200,000 | 200,000 | 66,667 |
| | Naggur | | 1 | 1.0 | 1 | 1.00 | 105,900 | 90,100 | 98,000 | 98,000 |
| | Manali | | 1 | 1.0 | 1 | 1.00 | 180,000 | 180,000 | 180,000 | 180,000 |
| Parvati | Total | 4 | 9 | 2.3 | 10 | 1.08 | 900,000 | 900,000 | 900,000 | 100,000 |
| | Bhuntar | | 2 | 2.0 | 3 | 1.38 | 300,000 | 300,000 | 300,000 | 150,000 |
| | Hurla | | 2 | 2.0 | 2 | 0.75 | 200,000 | 200,000 | 200,000 | 100,000 |
| | Jari | | 2 | 2.0 | 2 | 1.13 | 150,000 | 150,000 | 150,000 | 75,000 |
| | Kasol | | 3 | 3.0 | 3 | 1.08 | 250,000 | 250,000 | 250,000 | 83,333 |
| Banjar (Seraj) | Total | 3 | 6 | 2.0 | 6 | 1.02 | 1,421,000 | 1,528,000 | 1,474,500 | 245,750 |
| | Banjar | | 1 | 1.0 | 1 | 1.30 | 454,000 | 363,000 | 408,500 | 408,500 |
| | Tirthan | | 2 | 2.0 | 2 | 0.87 | 349,000 | 692,000 | 520,500 | 260,250 |
| | Sainj | | 3 | 3.0 | 3 | 1.03 | 618,000 | 473,000 | 545,500 | 181,833 |
| Anni | Total | 3 | 20 | 6.7 | 9 | 0.46 | 546,387 | 818,805 | 682,596 | 34,130 |
| | Chowai | | 6 | 6.0 | 3 | 0.45 | 88,855 | 247,450 | 168,153 | 28,025 |
| | Nither | | 6 | 6.0 | 3 | 0.53 | 283,160 | 351,914 | 317,537 | 52,923 |
| | Arsu | | 8 | 8.0 | 3 | 0.41 | 174,372 | 219,441 | 196,907 | 24,613 |

| Division | Range | No of Ranges in Division | No of Nurseries | Average No of Nursery per Range | Total area of Nurseries (ha) | Average Area Per Nursery (ha) | Seedling Production 2016-17 | Seedling Production 2015-16 | Average Production Per Year | Average Production Per Nursery |
|----------|--------------|--------------------------|-----------------|---------------------------------|------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------|
| Kinnaur | Total | 8 | 28 | 3.5 | 20 | 0.71 | 435,000 | | 435,000 | 15,536 |
| | Bhabhanagar | | 3 | 3.0 | 2 | 0.75 | 50,000 | | 50,000 | 16,667 |
| | Nichar | | 4 | 4.0 | 3 | 0.75 | 60,000 | | 60,000 | 15,000 |
| | Kilba | | 4 | 4.0 | 3 | 0.75 | 65,000 | | 65,000 | 16,250 |
| | Katgaon | | 1 | 1.0 | 1 | 1.00 | 30,000 | | 30,000 | 30,000 |
| | Kalpa | | 6 | 6.0 | 4 | 0.67 | 100,000 | | 100,000 | 16,667 |
| | Moorang | | 6 | 6.0 | 4 | 0.67 | 90,000 | | 90,000 | 15,000 |
| | Pooh | | 3 | 3.0 | 2 | 0.67 | 30,000 | | 30,000 | 10,000 |
| | Malling | | 1 | 1.0 | 1 | 1.00 | 10,000 | | 10,000 | 10,000 |
| Shimla | Total | 9 | 9 | 1.0 | 9 | 0.97 | 506,518 | 538,946 | 522,732 | 58,081 |
| | Koti | | 2 | 2.0 | 0 | 0.18 | 99,648 | 85,000 | 92,324 | 46,162 |
| | Bhajji | | 2 | 2.0 | 4 | 1.85 | 110,429 | 116,547 | 113,488 | 56,744 |
| | Dhami | | 2 | 2.0 | 2 | 0.80 | 83,975 | 110,400 | 97,188 | 48,594 |
| | Mashobra | | 1 | 1.0 | 2 | 2.25 | 154,560 | 122,675 | 138,618 | 138,618 |
| | T/Devi | | 2 | 2.0 | 1 | 0.40 | 57,906 | 104,324 | 81,115 | 40,558 |
| Theog | Total | 3 | 7 | 2.3 | 5 | 0.66 | 342,750 | 171,375 | 257,063 | 36,723 |
| | Theog | | 4 | 4.0 | 3 | 0.79 | 266,820 | 133,030 | 199,925 | 49,981 |
| | Balson | | 2 | 2.0 | 1 | 0.50 | 63,930 | 36,700 | 50,315 | 25,158 |
| | Kotkhai | | 1 | 1.0 | 1 | 0.50 | 12,000 | 26,270 | 19,135 | 19,135 |
| Rohru | Total | 7 | 7 | 1.0 | 7 | 1.00 | 1,190,000 | 1,190,000 | 1,190,000 | 170,000 |
| | Rohru | | 1 | 1.0 | 1 | 1.00 | 150,000 | 150,000 | 150,000 | 150,000 |
| | Bashla | | 1 | 1.0 | 1 | 1.00 | 250,000 | 250,000 | 250,000 | 250,000 |
| | Tikkar | | 1 | 1.0 | 1 | 1.00 | 100,000 | 100,000 | 100,000 | 100,000 |
| | Jubbal | | 1 | 1.0 | 1 | 1.00 | 300,000 | 300,000 | 300,000 | 300,000 |
| | Sawra | | 1 | 1.0 | 1 | 1.00 | 200,000 | 200,000 | 200,000 | 200,000 |
| | Khashadhar | | 1 | 1.0 | 1 | 1.00 | 90,000 | 90,000 | 90,000 | 90,000 |
| | Dodra Kaware | | 1 | 1.0 | 1 | 1.00 | 100,000 | 100,000 | 100,000 | 100,000 |
| Chopal | Total | 7 | 6 | 0.9 | 4 | 0.72 | 389,033 | 389,033 | 389,033 | 64,839 |
| | Chopal | | - | 0.0 | | | | | | |
| | Bamta | | 1 | 1.0 | 0 | 0.20 | 52,285 | 52,285 | 52,285 | 52,285 |
| | Tharoach | | - | 0.0 | | | | | | |

| Division | Range | No of Ranges in Division | No of Nurseries | Average No of Nursery per Range | Total area of Nurseries (ha) | Average Area Per Nursery (ha) | Seedling Production 2016-17 | Seedling Production 2015-16 | Average Production Per Year | Average Production Per Nursery |
|----------|-----------|--------------------------|-----------------|---------------------------------|------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------|
| | Sarain | | - | 0.0 | | | | | | |
| | Nerwa | | 1 | 1.0 | 1 | 1.00 | 214,648 | 214,648 | 214,648 | 214,648 |
| | Deiya | | 2 | 2.0 | 2 | 0.90 | 51,000 | 51,000 | 51,000 | 25,500 |
| | Kanda | | 2 | 2.0 | 1 | 0.65 | 71,100 | 71,100 | 71,100 | 35,550 |
| Kotgarh | Total | 2 | 7 | 3.5 | 4 | 0.62 | 368,987 | 352,623 | 360,805 | 51,544 |
| | Kotgarh | | 3 | 3.0 | 1 | 0.42 | 148,410 | 73,285 | 110,848 | 36,949 |
| | Kumarsain | | 4 | 4.0 | 3 | 0.78 | 220,577 | 279,338 | 249,958 | 62,489 |
| | Total | 4 | 24 | 6.0 | 11 | 0.47 | 3,447,789 | 4,174,145 | 3,810,967 | 158,790 |
| | Rampur | | 4 | 4.0 | 2 | 0.60 | 1,500,000 | 2,000,000 | 1,750,000 | 437,500 |

Note: NA: Not Available (at the time of preparation of the report)

Source: Compiled by JICA Study Team (2017) based on the data obtained from HPFD

Attachment II.2.3.2 Status of Timber Distribution (Findings from the Livelihood Survey)

Table 1 Number of Households Received Timber under Timber Distribution to Right Holders Rule of the Government in the Last 20 years

(Unit: Households)

| District | Division | No of Respondents Interviewed | JFM | | | Non JFM | | | Total (b) | | Total (%=b-1/a) | |
|---|------------|-------------------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------|-------------|
| | | | 1 Yes | 2 No | Total | 1 Yes | 2 No | Total | 1 Yes | 2 No | Total no of Responses | 1 Yes |
| Bilaspur | Bilaspur | 60 | | 11 | 11 | | 3 | 3 | 0 | 14 | 14 | 0.0 |
| Chamba | Bharmour | 20 | | 1 | 1 | 1 | | 1 | 1 | 1 | 2 | 5.0 |
| | Chamba WL | 20 | | | 0 | 2 | 2 | 4 | 2 | 2 | 4 | 10.0 |
| | Pangi | 20 | 3 | | 3 | | 1 | 1 | 3 | 1 | 4 | 15.0 |
| Kinnaur | Kinnaur | 40 | 1 | | 1 | 1 | | 1 | 2 | 0 | 2 | 5.0 |
| | Sarahan WL | 20 | | | 0 | 2 | | 2 | 2 | 0 | 2 | 10.0 |
| Kullu | Kullu | 20 | | | 0 | 2 | | 2 | 2 | 0 | 2 | 10.0 |
| | Kullu WL | 20 | | | 0 | 2 | 1 | 3 | 2 | 1 | 3 | 10.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | 1 | | 1 | 1 | 0 | 1 | 5.0 |
| Mandi | Karsog | 20 | | 1 | 1 | 1 | 2 | 3 | 1 | 3 | 4 | 5.0 |
| | Mandi | 20 | | 4 | 4 | 1 | 3 | 4 | 1 | 7 | 8 | 5.0 |
| Shimla | Kotgarh | 20 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| | Rampur | 21 | | 1 | 1 | 2 | | 2 | 2 | 1 | 3 | 9.5 |
| | Theog | 20 | 1 | 2 | 3 | 1 | 1 | 2 | 2 | 3 | 5 | 10.0 |
| Total of Territorial | | 341 | 5 | 20 | 25 | 16 | 13 | 29 | 21 | 33 | 54 | 6.2 |
| Kangra | Baijnath | 3 | | | 0 | 1 | | 1 | 1 | 0 | 1 | 33.3 |
| Kullu | Kullu | 11 | | | 0 | 1 | 2 | 3 | 1 | 2 | 3 | 9.1 |
| Mandi | Mandi | 3 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Kangra | Palampur | 1 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Kullu | Parvati | 10 | | | 0 | 2 | 3 | 5 | 2 | 3 | 5 | 20.0 |
| Kinnaur | Kinnaur | 21 | | | 0 | 3 | 2 | 5 | 3 | 2 | 5 | 14.3 |
| Shimla | Theog | 1 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Solan | Nalagarh | 5 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Shimla | Kotgarh | 2 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Solan | Baddi | 2 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 7 | 7 | 14 | 7 | 7 | 14 | 11.9 |
| Grand Total | | 400 | 5 | 20 | 25 | 23 | 20 | 43 | 28 | 40 | 68 | 7.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 2 Year-wise Number of Households Received Timber (Household Construction (Received in Slippers)/ JFM)

| District | Division | No of Respondents Interviewed | 1996- 2001 | | 2001-2010 | | 2011-2015 | | 2016 | | 2017 | | Total | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|------------------------------|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household |
| Unit | | | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | |
| Chamba | Bharmour | 20 | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | |
| | Pangi | 20 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | | | | | | | |
| | Sarahan WL | 20 | | | | | | | | | | | | |
| Kullu | Kullu | 30 | | | | | | | | | | | | |
| | Kullu WL | 10 | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | | | | | | | | | | | | |
| | Mandi | 20 | | | | | | | | | | | | |
| | Kotgarh | 20 | | | | | | | | | | | | |
| Shimla | Rampur | 21 | | | | | | | | | | | | |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | | | | | | | | | | | | |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | |
| Total of Graziers/ Grassland Users | | 59 | | | | | | | | | | | | |
| Grand Total | | 400 | | | | | | | | | | | | |

* 1 Slipper = 0.025 cubic metre

Source: Livelihood Survey, JICA Study Team (2017)

Table 3 Year-wise Number of Households Received Timber (Household Construction (Received in Slippers)/ Non-JFM)

| District | Division | No of Respondents Interviewed | 1986 | | 1990 | | 1991 - 1997 | | 1998 | | 1999 - 2001 | | 2002 | | 2003 - 2006 | | 2007 | | 2008 - 2015 | | 2016 | | 2017 | | Total | | | |
|---|------------|-------------------------------|-----------|--------------|-----------|--------------|-------------|--------------|-----------|--------------|-------------|--------------|-----------|--------------|-------------|--------------|-----------|--------------|-------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|------------------------------|
| | | | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Total Volume | No of HHs | Average Volume per Household |
| Unit | | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| | Bharmour | 20 | | | | | | | | | | | 1 | 12 | | | | | | | | | | | | | 1 | 12 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Chamba | Pangi | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | 1 | 50 | | | | | 1 | 0 |
| | Kullu | 30 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kullu | Kullu WL | 10 | | | | | | | | | | | | | | | | | | | | | | | 1 | 20 | 1 | 20 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| | Rampur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 50 | 1 | 20 | 3 | 11 |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kullu | Kullu | 11 | 1 | 10 | 1 | 30 | | | 1 | 12 | | | | | | | | | | | | | | | | | 3 | 17 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | 1 | 30 | | | | | | | | | 1 | 30 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Total of Graziers/ Grassland Users | | 59 | 1 | 10 | 1 | 30 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 21 |
| Grand Total | | 400 | 1 | 10 | 1 | 30 | 0 | 0 | 1 | 12 | 0 | 0 | 1 | 12 | 0 | 0 | 1 | 30 | 0 | 0 | 1 | 50 | 1 | 20 | 7 | 16 | | |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 4. Year-wise Number of Households Received Timber (Household Construction (Received in trees)/ JFM)

| District | Division | No of Respondents Interviewed | 1996 | | 1997-1999 | | 2000 | | 2001 - 2002 | | 2003 | | 2004 - 2017 | | Total | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|------------------------------|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household |
| Unit | | | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | 0 | - |
| | Bharmour | 20 | | | | | | | | | | | | | 0 | - |
| | Chamba WL | 20 | | | | | | | | | | | | | 0 | - |
| Chamba | Pangi | 20 | | | | | | | | | | | | | 0 | - |
| | Kinnaur | 40 | | | | | 1 | 1 | | | | | | | 1 | 1 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | 0 | - |
| | Kullu | 30 | | | | | | | | | | | | | 0 | - |
| Kullu | Kullu WL | 10 | | | | | | | | | | | | | 0 | - |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | 0 | - |
| | Karsog | 20 | | | | | | | | | | | | | 0 | - |
| Mandi | Mandi | 20 | | | | | | | | | | | | | 0 | - |
| | Kotgarh | 20 | | | | | | | | | | | | | 0 | - |
| | Rampur | 21 | | | | | | | | | | | | | 0 | - |
| Shimla | Theog | 20 | 1 | 1 | | | | | | | | | | | 1 | 1 |
| Total of Territorial | | 341 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | 0 | - |
| Kullu | Kullu | 11 | | | | | | | | | | | | | 0 | - |
| Mandi | Mandi | 3 | | | | | | | | | | | | | 0 | - |
| Kangra | Palampur | 1 | | | | | | | | | | | | | 0 | - |
| Kullu | Parvati | 10 | | | | | | | | | | | | | 0 | - |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | 0 | - |
| Shimla | Theog | 1 | | | | | | | | | | | | | 0 | - |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | 0 | - |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | 0 | - |
| Solan | Baddi | 2 | | | | | | | | | | | | | 0 | - |
| Total of Graziers/ Grassland Users | | 59 | | | | | | | | | | | | | 0 | - |
| Grand Total | | 400 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 5 Year-wise Number of Households Received Timber (Household Construction (Received in trees)/ Non-JFM)

| District | Division | No of Respondents Interviewed | 1996 | | 1997 | | 1999 | | 2000 | | 2001 - 2002 | | 2003 | | 20012-14 | | 2015 | | 2016 | | 2017 | | Total | | | | | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|------------------------------|----------|----------|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household | | |
| Unit | | | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | 0 | - | | | |
| | Bharmour | 20 | | | | | | | | | | | | | | | | | | | | | | | 0 | - | | |
| | Chamba WL | 20 | | | 1 | 1 | | | | | | | 1 | 1 | | | | | 2 | 2 | | | | | 4 | 1 | | |
| Chamba | Pangi | 20 | | | | | | | | | | | | | | | | | | | | | | | 0 | - | | |
| | Kinnaur | 40 | | | | | 3 | | 1 | 3 | | | | | | | | | | | | | | | 4 | 1 | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| | Kullu | 30 | | | | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| | Kullu WL | 10 | | | | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| | Karsog | 20 | | | | | | | | | | | | | | | 2 | 2 | | | | | | | | 2 | 1 | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| | Rampur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Total of Territorial | | 341 | | | 1 | 1 | 3 | | 1 | 3 | | | 1 | 1 | | | 2 | 2 | 1 | 1 | | | | | 9 | 1 | | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Total of Graziers/ Grassland Users | | 59 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| Grand Total | | 400 | | | 1 | 1 | | | | | | | 1 | 1 | | | | | | | | | | | | 2 | 1 | |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 6 Year-wise Number of Households Received Timber (House Repair (in Slippers)/ JFM)

| District | Division | No of Respondents Interviewed | 1996 | | 1997 - 2001 | | 2002 | | 2003-2004 | | 2005 | | 2006 - 2009 | | 2010 | | 2011 - 2014 | | 2015 | | 2016 | | 2017 | | Total | | | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|------------------------------|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household |
| Unit | | | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| | Bharmour | 20 | | | | | 1 | 1 | | | | | | | | | | | | | 1 | 1 | 1 | 1 | | | 3 | 1 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Chamba | Pangi | 20 | | | | | | | | | | | | | | | | | | | 4 | 4 | | | | | 4 | 1 |
| | Kinnaur | 40 | | | | | | | | | | | | 1 | 1 | | | | 1 | 1 | | | | | | | 2 | 1 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| | Kullu | 30 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Kullu | Kullu WL | 10 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| | Rampur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Shimla | Theog | 20 | 1 | 1 | | | | | | | 1 | 1 | | | | | | | | | | | | | | | 2 | 1 |
| Total of Territorial | | 341 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Total of Graziers/ Grassland Users | | 59 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |
| Grand Total | | 400 | | | | | | | | | | | | | | | | | | | | | | | | | 0 - | |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 7 Year-wise Number of Households Received Timber (House Repair (in Slippers)/ Non-JFM)

| District | Division | No of Respondents Interviewed | 1996 | | 1997 | | 1998-2001 | | 2002 | | 2003-2004 | | 2005 | | 2006 - 2015 | | 2016 | | 2017 | | Total | | | | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|------------------------------|---|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household | |
| Unit | | | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| | Bharmour | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | - |
| | Chamba WL | 20 | | | | | | | 1 | 1 | | | | | | | | | | | | | 1 | 1 | |
| Chamba | Pangi | 20 | | | | | | | | | | | | | | | 1 | 1 | | | | | 1 | 1 | |
| | Kinnaur | 40 | | | 1 | 1 | | | 1 | 1 | | | | | | | | | | | | | 2 | 1 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| | Kullu | 30 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Kullu | Kullu WL | 10 | | | | | | | | | | | | | | | | | | | 2 | 2 | 2 | 1 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | 1 | 1 | | | | | | | | | 1 | 1 | |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| | Rampur | 21 | | | | | | | 1 | 1 | | | | | | | | | | | | | 1 | 1 | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Total of Territorial | | 341 | 0 | | 1 | 1 | 0 | | 3 | 2 | 0 | | 1 | | 0 | | 1 | 1 | 2 | 2 | 8 | 1 | | | |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | 1 | 1 | | | | 1 | 1 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | 0 | - | |
| Total of Graziers/ Grassland Users | | 59 | | | | | | | | | | | | | | | | 1 | 1 | | | | 1 | 1 | |
| Grand Total | | 400 | 0 | | 1 | 1 | 0 | | 3 | 2 | 0 | | 1 | | 0 | | 2 | 2 | 2 | 2 | 9 | 1 | | | |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 8 Timber Received for Cattle Shed Construction and Repair (Cattle shed construction (Received in Slippers)/ JFM)

| District | Division | No of Respondents Interviewed | 1996 - 2005 | | 2006 | | 2007 - 2010 | | 2011 - 2017 | | Total | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|------------------------------|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household |
| Unit | | | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper |
| Bilaspur | Bilaspur | 60 | | | | | | | | | 0 | - |
| | Bharmour | 20 | | | | | | | | | 0 | - |
| | Chamba WL | 20 | | | | | | | | | 0 | - |
| Chamba | Pangi | 20 | | | | | | | | | 0 | - |
| | Kinnaur | 40 | | | 1 | 1 | | | | | 1 | 1 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | 0 | - |
| | Kullu | 30 | | | | | | | | | 0 | - |
| Kullu | Kullu WL | 10 | | | | | | | | | 0 | - |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | 0 | - |
| | Karsog | 20 | | | | | | | | | 0 | - |
| Mandi | Mandi | 20 | | | | | | | | | 0 | - |
| | Kotgarh | 20 | | | | | | | | | 0 | - |
| | Rampur | 21 | | | | | | | | | 0 | - |
| Shimla | Theog | 20 | | | | | | | | | 0 | - |
| Total of Territorial | | 341 | | | 1 | 1 | | | | | 1 | 1 |
| Kangra | Bajjnath | 3 | | | | | | | | | 0 | - |
| Kullu | Kullu | 11 | | | | | | | | | 0 | - |
| Mandi | Mandi | 3 | | | | | | | | | 0 | - |
| Kangra | Palampur | 1 | | | | | | | | | 0 | - |
| Kullu | Parvati | 10 | | | | | | | | | 0 | - |
| Kinnaur | Kinnaur | 21 | | | | | | | | | 0 | - |
| Shimla | Theog | 1 | | | | | | | | | 0 | - |
| Solan | Nalagarh | 5 | | | | | | | | | 0 | - |
| Shimla | Kotgarh | 2 | | | | | | | | | 0 | - |
| Solan | Baddi | 2 | | | | | | | | | 0 | - |
| Total of Graziers/ Grassland Users | | 59 | | | | | | | | | 0 | - |
| Grand Total | | 400 | | | 1 | 1 | | | | | 1 | 1 |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 9 Timber Received for Cattle Shed Construction and Repair (Cattle shed construction (Received in Slippers)/ Non-JFM)

| District | Division | No of Respondents Interviewed | 1996 - 2004 | | 2005 | | 2006 - 2013 | | 2014 | | 2015 - 2017 | | Total | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|------------------------------|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household |
| Unit | | | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper | HH | Slipper |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | 0 | - |
| | Bharmour | 20 | | | | | | | | | | | 0 | - |
| | Chamba WL | 20 | | | | | | | | | | | 0 | - |
| Chamba | Pangi | 20 | | | | | | | | | | | 0 | - |
| | Kinnaur | 40 | | | | | | | | | | | 0 | - |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | 0 | - |
| | Kullu | 30 | | | | | | | | | | | 0 | - |
| Kullu | Kullu WL | 10 | | | | | | | | | | | 0 | - |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | 0 | - |
| | Karsog | 20 | | | | | | | | | | | 0 | - |
| Mandi | Mandi | 20 | | | | | | 1 | 1 | | | | 1 | 1 |
| | Kotgarh | 20 | | | | | | | | | | | 0 | - |
| | Rampur | 21 | | | | | | | | | | | 0 | - |
| Shimla | Theog | 20 | | | | | | | | | | | 0 | - |
| Total of Territorial | | 341 | | | | | | | 1 | 1 | | | 1 | 1 |
| Kangra | Baijnath | 3 | | | | | | | | | | | 0 | - |
| Kullu | Kullu | 11 | | | | | | | | | | | 0 | - |
| Mandi | Mandi | 3 | | | | | | | | | | | 0 | - |
| Kangra | Palampur | 1 | | | | | | | | | | | 0 | - |
| Kullu | Parvati | 10 | | | | | | | | | | | 0 | - |
| Kinnaur | Kinnaur | 21 | | | 1 | 1 | | | | | | | 1 | 1 |
| Shimla | Theog | 1 | | | | | | | | | | | 0 | - |
| Solan | Nalagarh | 5 | | | | | | | | | | | 0 | - |
| Shimla | Kotgarh | 2 | | | | | | | | | | | 0 | - |
| Solan | Baddi | 2 | | | | | | | | | | | 0 | - |
| Total of Graziers/ Grassland Users | | 59 | | | | | | | | | | | 0 | - |
| Grand Total | | 400 | | | 1 | 1 | | | | | | | 1 | 1 |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 10 Timber Received for Cattle Shed Construction and Repair (Cattle Shed Repair (Received in Slippers)/ JFM)

| District | Division | No of Respondents Interviewed | 1996 - 2005 | | 2006 - 2017 | | Total | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|------------------------------|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household |
| | | | HH | Slipper | HH | Slipper | HH | Slipper |
| Bilaspur | Bilaspur | 60 | | | | | | |
| Chamba | Bharmour | 20 | | | | | | |
| | Chamba WL | 20 | | | | | | |
| | Pangi | 20 | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | |
| | Sarahan WL | 20 | | | | | | |
| Kullu | Kullu | 30 | | | | | | |
| | Kullu WL | 10 | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | |
| Mandi | Karsog | 20 | | | | | | |
| | Mandi | 20 | | | | | | |
| Shimla | Kotgarh | 20 | | | | | | |
| | Rampur | 21 | | | | | | |
| | Theog | 20 | | | | | | |
| Total of Territorial | | 341 | | | | | | |
| Kangra | Bajjnath | 3 | | | | | | |
| Kullu | Kullu | 11 | | | | | | |
| Mandi | Mandi | 3 | | | | | | |
| Kangra | Palampur | 1 | | | | | | |
| Kullu | Parvati | 10 | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | |
| Shimla | Theog | 1 | | | | | | |
| Solan | Nalagarh | 5 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | |
| Solan | Baddi | 2 | | | | | | |
| Total of Graziers/ Grassland Users | | 59 | | | | | | |
| Grand Total | | 400 | | | | | | |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 11 Timber Received for Cattle Shed Construction and Repair (Cattle Shed Repair (Received in Slippers)/ Non-JFM)

| District | Division | No of Respondents Interviewed | 1996 - 2005 | | 2006-2017 | | Total | |
|---|------------|-------------------------------|------------------|--------------|------------------|--------------|------------------|------------------------------|
| | | | No of Households | Total Volume | No of Households | Total Volume | No of Households | Average Volume per Household |
| Unit | | | HH | Slipper | HH | Slipper | HH | Slipper |
| Bilaspur | Bilaspur | 60 | | | | | | |
| Chamba | Bharmour | 20 | | | | | | |
| | Chamba WL | 20 | | | | | | |
| | Pangi | 20 | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | |
| | Sarahan WL | 20 | | | | | | |
| Kullu | Kullu | 30 | | | | | | |
| | Kullu WL | 10 | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | |
| Mandi | Karsog | 20 | | | | | | |
| | Mandi | 20 | | | | | | |
| Shimla | Kotgarh | 20 | | | | | | |
| | Rampur | 21 | | | | | | |
| | Theog | 20 | | | | | | |
| Total of Territorial | | 341 | | | | | | |
| Kangra | Baijnath | 3 | | | | | | |
| Kullu | Kullu | 11 | | | | | | |
| Mandi | Mandi | 3 | | | | | | |
| Kangra | Palampur | 1 | | | | | | |
| Kullu | Parvati | 10 | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | |
| Shimla | Theog | 1 | | | | | | |
| Solan | Nalagarh | 5 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | |
| Solan | Baddi | 2 | | | | | | |
| Total of Graziers/ Grassland Users | | 59 | | | | | | |
| Grand Total | | 400 | | | | | | |

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Attachment II.2.4.1 Current Status of Protected Areas of Project Districts Proposed by HPFD

| | Wildlife Division | Shimla | | | Sarahan | | | | Spiti | | |
|---------------------|--|------------|-----------|--------------------|---|---|-------------------|------------|-----------------------------|-----------------------|--|
| PA Status | Name of Protected Area | SWC Dhalli | SWC Chail | Tharoch | Dharanghati | Lippa Asrang | Rakchham Chhitkul | Rupi Bhaba | Chandertal | Kibber | Pin Valley NP |
| | Year of Notification | 2013 | 2013 | 2013 | 2013 | 2013 | 2013 | 2013 | 2013 | 1999 & 2013 | 1987 |
| | Notified Area (sq. Km) | 10.2 | 16.0 | 46.4 | 171.5 | 31 | 304 | 503 | 38.6 | 2,267 | 675 (Core), 1,150 (Buffer) |
| | Boundary Settlement Process Completed? | yes | yes | yes | yes | yes | yes | yes | No, it is in process. | No, it is in process. | No, it is in process. |
| | Number of Divisions Covered | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | Management Plan Prepared? | yes | yes | yes | yes | yes | yes | yes | Being Prepared & in Process | Being Prepared | Being Prepared & in Process |
| | Period of Management Plan | 2022-23 | 2022-23 | 2013-14 to 2023-24 | 1991-2002 (Under preparations for next years) | 1990 to 2001-02 (Under preparations for next years) | 2011 to 2021-22 | 2010-2015 | 2017-2026 | 2017-2021 | 2017-2026 |
| Demographic Details | No. of Villages within PA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 4 (Summer settlements for Thango, Rajgaon, Gechang, kocho) |
| | No. of Villages within periphery of 3km from PA boundary | 20 | 20 | 15 | 37 | 2 | 7 | 20 | 2 (Lossar & Chichong) | 5 | 3 (Sagnam, Kaa, Mudh) |
| | No. of Villages proposed for relocation from PA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 4 (Thango, Rajgaon, Gechang, kocho) |
| | No. of Villages/Families already relocated from PA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | No. of EDC within PA | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | No. of functional EDCs as of August 2017 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | No. of Biodiversity Conservation Committee within PA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Wildlife Division | | Shimla | | | Sarahan | | | | Spiti | | |
|---|---|---------|---|---|------------|-----------|------------|------------|-----------------------------|------------------------------|------------------------------|
| No. of JFMC/VFDS/other participatory forest management organizations within PA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. of JFMC/VFDS/other participatory forest management organizations functional as of August 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. of Functional JFMC/VFDS (FY2016-17) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Names of Ranges externally funded project are currently implemented | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Annual Plan of Operations Details | Total Proposed Cost of APOs | 2014-15 | | | 8,985,850 | 9,480,256 | 11,790,188 | 14,970,855 | | | |
| | | 2015-16 | | | 11,012,000 | 7,772,940 | 13,279,960 | 25,784,710 | | | |
| | | 2016-17 | | | 21,533,074 | 9,522,715 | 8,530,204 | 34,696,268 | | | |
| | Total Sanctioned Amount | 2014-15 | | | 6,674,100 | 8,719,300 | 11,315,300 | 14,797,600 | | | |
| | | 2015-16 | | | 13,082,250 | 7,084,200 | 3,269,700 | 25,503,900 | | | |
| | | 2016-17 | | | 21,314,200 | 7,873,600 | 6,149,900 | 16,489,400 | | | |
| | Total Amount Received | 2014-15 | | | 5,034,500 | 5,749,800 | 11,062,300 | 13,158,800 | | | |
| | | 2015-16 | | | 13,007,600 | 7,084,200 | 3,738,700 | 24,608,900 | | | |
| | | 2016-17 | | | 16,516,900 | 7,037,600 | 5,194,600 | 15,923,800 | | | |
| | Amount Received from other Projects/Programs from Central Funds | 2014-15 | | | - | - | - | - | 506,000 | 5,000,000 | 903,000 |
| | | 2015-16 | | | - | - | - | - | 836,000 | 4,800,000 | 2,175,000 |
| | | 2016-17 | | | - | - | - | - | 760,000 | 921,000 | 1,070,000 |
| | Amount Received from other Projects/Programs from State Funds | 2014-15 | | | - | - | - | - | - | - | - |
| | | 2015-16 | | | - | - | - | - | - | 158,000 (State Share in CSS) | 241,000 (State Share in CSS) |
| | | 2016-17 | | | - | - | - | - | - | 112,000 (State Share in CSS) | 119,000 (State Share in CSS) |
| | | 2014-15 | | | - | - | - | - | - | 500,000 (Tribal Sub Plan) | 300,000 (Tribal Sub Plan) |
| | 2015-16 | | | - | - | - | - | - | 800,000 (Tribal Sub Plan) | 300,000 (Tribal Sub Plan) | |
| | 2016-17 | | | - | - | - | - | - | 1,350,000 (Tribal Sub Plan) | - | |

| | Wildlife Division | | Shimla | | | Sarahan | | | | Spiti | | |
|--|---------------------------|----|--------|--------------|--|--|--|--|---|---------------------------|---|---------------------------|
| | | | | | | | | | | | Plan) | |
| Amount Received from other Projects/Programs from Donors | 2014-15 | | | | | - | - | - | - | | | |
| | 2015-16 | | | | | - | - | - | - | | | |
| | 2016-17 | | | | | - | - | - | - | | | |
| Biodiversity/Wildlife Conservation Related Facilities Present in the PA/Division | Reception Area | No | No | No | No | No | No | No | No | No | No | No |
| | Interpretation Centre | No | No | No | No (Proposed to be constructed in Sarahan Pheasantry during 2017-18) | No (Proposed to be constructed in Sarahan Pheasantry during 2017-19) | No (Proposed to be constructed in Sarahan Pheasantry during 2017-18) | No (Proposed to be constructed in Sarahan Pheasantry during 2017-18) | No | 1 | No | No |
| | Wildlife Rescue Centre | No | No | No | No | No | No | No | No | No | No | No |
| | Veterinary Care Centre | No | No | No | Sarahan Pheasantry | Sarahan Pheasantry | Sarahan Pheasantry | Sarahan Pheasantry | No | No | No | No |
| | Tranquilization equipment | No | No | 2 (22 Rifle) | Division | Division | Division | Division | Only one Tranquilize gun in Division Office | No | Only one Tranquilize gun in Division Office | No |
| | Wildlife Rescue Vehicle | No | No | No | No | No | No | No | No | No | No | No |
| | Forensic Lab | No | No | No | No | No | No | No | No | No | No | No |
| | Museum/Zoo | No | No | No | No | No | No | No | No | No | No | No |
| | Herbarium | No | No | No | No | No | No | No | No | No | No | No |
| | Camera Traps | 4 | 4 | 4 | 28 (WLS), 24 (Division) | 2 (WLS), 24 (Division) | 7 (WLS), 24 (Division) | 16 (WLS), 24 (Division) | Yes | Yes | Yes | Yes |
| | Audio-Visual Equipment | No | No | No | 17 (WLS), 8 (Division) | 8 (WLS), 8 (Division) | 10 (WLS), 8 (Division) | 12 (WLS), 8 (Division) | No | No | No | No |
| | GPS | 2 | 2 | 1 | 9 (WLS), 13 (Division) | 1 (WLS), 13 (Division) | 5 (WLS), 13 (Division) | 10 (WLS), 13 (Division) | Yes | Yes | Yes | Yes |
| | 4WD Vehicle | 0 | 0 | 0 | 1 (Division) | 1 (Division) | 1 (Division) | 1 (Division) | 1 (One Gypsy in Division) | 1 (One Gypsy in Division) | 1 (One Gypsy in Division) | 1 (One Gypsy in Division) |
| | Motor bike | 1 | 1 | 0 | 3 (Division) For Wildlife Ranges Sangla, Rupi and Dofda | 3 (Division) For Wildlife Ranges Sangla, Rupi and Dofda | 3 (Division) For Wildlife Ranges Sangla, Rupi and Dofda | 3 (Division) For Wildlife Ranges Sangla, Rupi and Dofda | No | No | No | No |
| Bicycle | 33 | 33 | 0 | No | No | No | No | No | No | No | No | |

| Wildlife Division | | Shimla | | | Sarahan | | | | Spiti | | |
|-----------------------------------|--|--------|---|---|---|--|--|--|---|---|---|
| Horse / Donkey | | 0 | 0 | 0 | No | No | No | No | No | No | No |
| Conservation Significance / Value | | | | | | | | | | | |
| Human-Wildlife Conflict | Issues (Including concerned species) | 0 | 0 | 0 | Sporadic, Black bear, Snake | Sporadic, Black bear, Snake | Sporadic, Black bear, Snake | Sporadic, Black bear, Snake | Ibex damages agriculture crops of adjoining villages, crop raiding. Snow leopard sometimes prey on domestic animals | Blue sheep & ibex damage agriculture crops of adjoining villages, crop raiding. Snow leopard sometimes prey on domestic animals | Blue sheep & ibex damage agriculture crops of adjoining villages, crop raiding. Snow leopard sometimes prey on domestic animals |
| | Existing Mitigation Measures | 0 | 0 | 0 | | | | | Watch & Ward of agriculture fields, fencing & cattle sheds. Awareness among local people | Watch & Ward of agriculture fields, fencing & cattle sheds. Awareness among local people | Watch & Ward of agriculture fields, fencing & cattle sheds. Awareness among local people |
| Endangered Fauna & Flora | Issues (Including concerned species) | 0 | 0 | 0 | Tragopan, Musk Deer, Serow | Tragopan, Musk Deer, Serow | Tragopan, Musk Deer, Serow | Tragopan, Musk Deer, Serow | Medicinal plants exploitation, pastures land competition between domestic animals & wildlife, prey spp of snow leopard. Spread of communicable diseases | Medicinal plants exploitation, pastures land competition between domestic animals & wildlife, prey spp of snow leopard. Spread of communicable diseases | Medicinal plants exploitation, pastures land competition between domestic animals & wildlife, prey spp of snow leopard. Spread of communicable diseases |
| | Existing Protection, Conservation Habitat Improvement Measures | 0 | 0 | 0 | Tragopan Conservation breeding Programme, Development of anti-poachers, | Tragopan Conservation breeding Programme, Development of anti- | Tragopan Conservation breeding Programme, Development of anti- | Tragopan Conservation breeding Programme, Development of anti- | Protection by staff, educating the local population. Pasture | Protection by staff, educating the local population. Pasture | Protection by staff, educating the local population. Pasture |

Status of PA (Please describe)

| Wildlife Division | | Shimla | | | Sarahan | | | | Spiti | | |
|--|--|--------|---|---|--|--|--|--|--|--|--|
| | | | | | Provision of watch –towers and law training for staff. | poachers, Provision of watch –towers and law training for staff. | poachers, Provision of watch –towers and law training for staff. | poachers, Provision of watch –towers and law training for staff. | improvement, moisture improvement, awareness & vaccination with the help of line department. | improvement, moisture improvement, awareness & vaccination with the help of line department. | improvement, moisture improvement, awareness & vaccination with the help of line department. |
| | Habitation and Usage of PA by People (Status and Issues) | 0 | 0 | 0 | Debarred, accordingly to notification issued during 2013 | Debarred, accordingly to notification issued during 2013 | Debarred, accordingly to notification issued during 2013 | Debarred, accordingly to notification issued during 2013 | In fringe areas for pasture, medicinal plant collection. migratory graziers. | In fringe areas for pasture, medicinal plant collection. migratory graziers. | In fringe areas for pasture, medicinal plant collection. migratory graziers. |
| | Eco-development work (Status and Issues) | 0 | 0 | 0 | Nil | Nil | Nil | Nil | Bunkers, tracking & traditional routes | Bunkers, tracking & traditional routes | Bunkers, tracking & traditional routes |
| | Eco-tourism (Status and Issues) | 0 | 0 | 0 | Eco – tourism Society of circle level is under formation | Eco – tourism Society of circle level is under formation | Eco – tourism Society of circle level is under formation | Eco – tourism Society of circle level is under formation | Tracking routes to Baralachha & Leh. | Tracking routes to Pin Parwati & Mudh Bhawa, camping & tenting in summer months. | Tracking routes to Pin Parwati & Mudh Bhawa, camping & tenting in summer months. |
| | Other Status and Issues related to PA Management | 0 | 0 | 0 | Eco – Sensitive Zones under formation | Eco – Sensitive Zones under formation | Eco – Sensitive Zones under formation | Eco – Sensitive Zones under formation | | | |
| | FRA Application submitted (by August 2017) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | In process | In process | In process |
| | FRA Rights Granted (by August 2017) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | In process | In process | In process |
| Wildlife Census (Number of animals Recorded) | Monal | 2011 | | | - | - | - | - | | | |
| | | 2012 | | | - | - | - | - | | | |
| | | 2013 | | | - | - | - | - | | | |
| | | 2014 | | | - | - | - | - | | | |
| | | 2015 | | | 13 | - | 34 | 98 | | | |
| | Tragopan | 2011 | | | | - | - | - | - | | |
| 2012 | | | | | - | - | - | - | | | |

| Wildlife Division | | Shimla | | | Sarahan | | | | Spiti | | |
|-------------------|------|---------|--|--|---------|----|----|----|-------|----|-----|
| | 2013 | | | | - | - | - | - | | | |
| | 2014 | | | | - | - | - | - | | | |
| | 2015 | | | | 6 | - | - | 6 | | | |
| Koklas | 2011 | 0 | | | - | - | - | - | | | |
| | 2012 | 27 pair | | | - | - | - | - | | | |
| | 2013 | 37 pair | | | - | - | - | - | | | |
| | 2014 | 24 pair | | | - | - | - | - | | | |
| | 2015 | 42 | | | 18 | - | 24 | 56 | | | |
| Kalij | 2011 | | | | - | - | - | - | | | |
| | 2012 | | | | - | - | - | - | | | |
| | 2013 | | | | - | - | - | - | | | |
| | 2014 | | | | - | - | - | - | | | |
| | 2015 | | | | 117 | - | 48 | 85 | | | |
| Chakor | 2011 | | | | - | - | - | - | | | |
| | 2012 | | | | - | - | - | - | | | |
| | 2013 | | | | - | - | - | - | | | |
| | 2014 | | | | - | - | - | - | | | |
| | 2015 | | | | 9 | 15 | 2 | 10 | | | |
| Black bear | 2011 | | | | - | - | - | - | | | |
| | 2012 | | | | - | - | - | - | | | |
| | 2013 | | | | - | - | - | - | | | |
| | 2014 | | | | - | - | - | - | | | |
| | 2015 | | | | 1 | 2 | 4 | 6 | | | |
| Ghoral | 2011 | | | | - | - | - | - | | | |
| | 2012 | | | | - | - | - | - | | | |
| | 2013 | | | | - | - | - | - | | | |
| | 2014 | | | | - | - | - | - | | | |
| | 2015 | | | | 7 | - | 3 | 12 | | | |
| Ibex | 2011 | | | | - | - | - | - | | | 68 |
| | 2012 | | | | - | - | - | - | | | 79 |
| | 2013 | | | | - | - | - | - | 27 | | 122 |
| | 2014 | | | | - | - | - | - | 24 | 73 | 79 |
| | 2015 | | | | - | 13 | 48 | - | | 85 | 102 |
| Snowcock | 2011 | | | | - | - | - | - | | | |
| | 2012 | | | | - | - | - | - | | | |
| | 2013 | | | | - | - | - | - | | | |
| | 2014 | | | | - | - | - | - | | | |
| | 2015 | | | | - | - | 18 | - | | | |
| Leopard | 2011 | | | | - | - | - | - | | | |

| Wildlife Division | | Shimla | | | Sarahaan | | | | Spiti | | | |
|-------------------|------|--------|------|-----|----------|---|----|---|-------|----|---------------------------------------|---------------------------------------|
| | 2012 | | | | - | - | - | - | | | | |
| | 2013 | | | | - | - | - | - | | | | |
| | 2014 | | | | - | - | - | - | | | | |
| | 2015 | | | | - | 6 | 12 | 4 | | | | |
| Brown bear | 2011 | | | | - | - | - | - | | | | |
| | 2012 | | | | - | - | - | - | | | | |
| | 2013 | | | | - | - | - | - | | | | 2 |
| | 2014 | | | | - | - | - | - | | | | |
| | 2015 | | | | - | 1 | 1 | - | | | | |
| Monkey | 2011 | | 0 | 0 | | | | | | | | |
| | 2012 | 453 | 1590 | 168 | | | | | | | | |
| | 2013 | 0 | 0 | 0 | | | | | | | | |
| | 2014 | 0 | 0 | 0 | | | | | | | | |
| | 2015 | 0 | 0 | 0 | | | | | | | | |
| Red fox | 2011 | | | | | | | | | | | 109 |
| | 2012 | | | | | | | | | | | 133 |
| | 2013 | | | | | | | | 18 | | | 88 |
| | 2014 | | | | | | | | 12 | 21 | | 133 |
| | 2015 | | | | | | | | | 9 | | 68 |
| Golden eagle | 2011 | | | | | | | | | | | 10 |
| | 2012 | | | | | | | | | | | 6 |
| | 2013 | | | | | | | | 6 | | | 14 |
| | 2014 | | | | | | | | 6 | 6 | | 6 |
| | 2015 | | | | | | | | | 11 | | 11 |
| Snow leopard | 2011 | | | | | | | | | | | |
| | 2012 | | | | | | | | | | Indirect evidences camera trap images | Indirect evidences camera trap images |
| | 2013 | | | | | | | | | | Indirect evidences camera trap images | Indirect evidences camera trap images |
| | 2014 | | | | | | | | | | Indirect evidences camera trap images | Indirect evidences camera trap images |
| | 2015 | | | | | | | | | | Indirect evidences camera trap images | Indirect evidences camera trap images |

| | Wildlife Division | | Shimla | | | Sarahan | | | | Spiti | | | | |
|------------------|----------------------------------|---------|--------|---|---|---------|-----|-----|-----|--------|------------------------|--------------------|---|--|
| | | | | | | | | | | images | images | | | |
| | Marmot | 2011 | | | | | | | | | | | | |
| | | 2012 | | | | | | | | | | | | |
| | | 2013 | | | | | | | | 10 | | | | |
| | | 2014 | | | | | | | | 10 | - | | | |
| | | 2015 | | | | | | | | | 15 | | | |
| | Pika | 2011 | | | | | | | | | | | | |
| | | 2012 | | | | | | | | | | | | |
| | | 2013 | | | | | | | | | | | | |
| | | 2014 | | | | | | | | 21 | | | | |
| | | 2015 | | | | | | | | 11 | 23 | | | |
| | Blue sheep | 2011 | | | | | | | | | | | | |
| | | 2012 | | | | | | | | | | | | |
| | | 2013 | | | | | | | | | | | | |
| | | 2014 | | | | | | | | | | 105 | | |
| | | 2015 | | | | | | | | | | 107 | | |
| Ruddy Shelduck | 2011 | | | | | | | | | | | | | |
| | 2012 | | | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | | |
| | 2014 | | | | | | | | | 12 | | | | |
| | 2015 | | | | | | | | | | | | | |
| Stilt | 2011 | | | | | | | | | | | | | |
| | 2012 | | | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | | |
| | 2014 | | | | | | | | | | | | | |
| | 2015 | | | | | | | | | 10 | | | | |
| Tourists/Visitor | Indian | 2014-15 | 2687 | 0 | 0 | - | - | - | - | | will be provided later | Data not available | | |
| | | 2015-16 | 4015 | 0 | 0 | - | - | - | - | | | | | |
| | | 2016-17 | 3025 | 0 | 0 | - | - | - | - | | | | | |
| | Foreigner | 2014-15 | 19 | 0 | 0 | - | - | - | - | | will be provided later | | | |
| | | 2015-16 | 64 | 0 | 0 | - | - | - | - | | | | | |
| | | 2016-17 | 55 | 0 | 0 | - | - | - | | | | | | |
| Nature Camps | Number of Nature Camps Organized | 2014-15 | 0 | 0 | 0 | 2 | - | - | - | 3 | 3 | 3 | 3 | |
| | | 2015-16 | 0 | 0 | 0 | 5 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | |
| | | 2016-17 | 0 | 0 | 0 | 2 | 1 | 3 | 4 | 3 | 3 | 3 | 3 | |
| | Total Number of Participants | 2014-15 | 0 | 0 | 0 | 132 | - | - | - | | | | | |
| | | 2015-16 | 0 | 0 | 0 | 610 | 267 | 267 | 207 | | | | | |

| Wildlife Division | | Shimla | | | Sarahan | | | | Spiti | | | |
|---|--|-------------------------|---|---|---------|-----|-----|-----|--|---------------------------------|--|--|
| | 2016-17 | 0 | 0 | 0 | 215 | 250 | 425 | 470 | | | | |
| Eco-clubs | Number of Eco-clubs exist | Number | | | - | - | - | - | Senior Secondary School Lossar | Senior Secondary School Kibber | Senior Secondary School Sagnam | |
| | | Nature of Participation | | | - | - | - | - | Wild Life Week & other awareness programme | | Wild Life Week & other awareness programme | |
| | Number of NGOs Working on issues related with Biodiversity/Environment in and around Sanctuary | Number | 0 | 0 | 0 | - | - | - | One GP of Lossar | Kibber GP | Two Gps Kungri & Sagnam | |
| | | Nature of Participation | 0 | 0 | 0 | - | - | - | Wild Life Week & other awareness programme | | Wild Life Week & other awareness programme | |
| WL Crimes (number of Registered Cases) | Timber poaching | 2014-15 | 0 | 0 | 0 | 5 | | | | | | |
| | | 2015-16 | 0 | 0 | 0 | 3 | | | | | | |
| | | 2016-17 | 0 | 0 | 0 | 2 | | | | | | |
| | Wildlife Poaching/hunting | 2014-15 | 0 | 0 | 0 | - | | | | | | |
| | | 2015-16 | 0 | 0 | 0 | - | | | | | | |
| | | 2016-17 | 0 | 0 | 0 | - | | | | | | |
| | Illegal Encroachments | 2014-15 | 0 | 0 | 0 | - | | | | | | |
| | | 2015-16 | 0 | 0 | 0 | - | | | | | | |
| | | 2016-17 | 0 | 0 | 0 | - | | | | | | |
| | Illegal Mining of minerals and sand | 2014-15 | 0 | 0 | 0 | - | | | | | | |
| | | 2015-16 | 0 | 0 | 0 | 4 | | | | | | |
| | | 2016-17 | 0 | 0 | 0 | - | | | | | | |
| Other (Specify) | 2014-15 | 0 | | | - | - | - | - | | | | |
| | 2015-16 | 0 | | | - | - | - | - | | | | |
| | 2016-17 | 0 | | | - | - | - | - | | | | |
| Other Programs/Project (List Convergence from | Name of Program | | 0 | 0 | 0 | - | - | - | - | CSS | CSS | |
| | Department | | 0 | 0 | 0 | - | - | - | - | Animal Husbandry | Animal Husbandry | |
| | Type of Convergence Done | | 0 | 0 | 0 | - | - | - | - | Vaccination of Domestic Cattles | Vaccination of Domestic Cattles | |
| | Remarks | | 0 | 0 | 0 | - | - | - | - | | | |
| | Name of Program | | 0 | 0 | 0 | - | - | - | - | CSS | CSS | |

| Wildlife Division | Shimla | | | Sarahan | | | | Spiti | | |
|--------------------------|--------|---|---|---------|---|---|---|---------------------------------|--|---------------------------------|
| Department | 0 | 0 | 0 | - | - | - | - | Horticulture | | Horticulture |
| Type of Convergence Done | 0 | 0 | 0 | - | - | - | - | Distribution of Fruit Seedlings | | Distribution of Fruit Seedlings |
| Remarks | 0 | 0 | 0 | - | - | - | - | | | |
| Name of Program | 0 | 0 | 0 | - | - | - | - | CSS | | CSS |
| Department | 0 | 0 | 0 | - | - | - | - | Agriculture | | Agriculture |
| Type of Convergence Done | 0 | 0 | 0 | - | - | - | - | Distribution of Seeds | | Distribution of Seeds |
| Remarks | 0 | 0 | 0 | - | - | - | - | | | |

Source: JICA Study Team (2017) Questionnaire Survey Findings

Attachment II.2.4.2 The New List of the Threatened Plant and Animal Species of HP

Table 1 The List of the Threatened Plant Species of the State

| No. | Scientific Name | Common Name | Family |
|-----|---|---------------------------------|---------------|
| 1 | <i>Aconitum deinorrhizum</i> Stapf | Mohra | Ranunculaceae |
| 2 | <i>Aconitum heterophyllum</i> Wall | Atis | Ranunculaceae |
| 3 | <i>Arnebia benthamii</i> (Wall. Ex G.Don) I. M. Johnst. | Ratanjot | Boraginaceae |
| 4 | <i>Atropa acuminata</i> Royle ex. Lindl. | Jharka | Solanaceae |
| 5 | <i>Berberis aristata</i> DC. | Kashamal | Berberidaceae |
| 6 | <i>Betula alnoides</i> Buch.-Ham. Ex D.Don | Himalayan birch | Betulaceae |
| 7 | <i>Dactylorhiza hatagirea</i> D. Don | Salam panja | Orchidaceae |
| 8 | <i>Eremostachys superba</i> Royle ex Benth | Gajar Mula | Lmiaceae |
| 9 | <i>Fritillaria roylei</i> Hook. | Kakoli/Jangli lasen | Liliaceae |
| 10 | <i>Gentiana kurroo</i> Royle | Kutki | Gentianaceae |
| 11 | <i>Habenaria edgeworthii</i> Hook. F. ex Collett | Jeevak | Orchidaceae |
| 12 | <i>Jasminum parkeri</i> Dunn | Dwarf Jasmine | Oleaceae |
| 13 | <i>Lilium polyphyllum</i> D. Don | Ksheer kakoli | Liliaceae |
| 14 | <i>Malaxis muscifera</i> (Lindl.) Kuntze | Ridhi | Orchidaceae |
| 15 | <i>Nardostachys grandiflora</i> DC | Jatamansi | Boraginaceae |
| 16 | <i>Paris polyphylla</i> Sm. | Dudhia bach | Liliaceae |
| 17 | <i>Sinopodophyllum hexandrum</i> (Royle) T. S. Ying | Bankakri | Berberidaceae |
| 18 | <i>Skimmia laureola</i> (DC.) Siebold & Zucc. ex Walp. | Ner dhoop | Rutaceae |
| 19 | <i>Staphylea emodi</i> Wall. ex Brandis | Himalayan bladdernut/ Nag Danu | Staphyleaceae |
| 20 | <i>Swertia chirayita</i> (Roxb. ex Fleming) Karsten | Chiretta/Chirayata | Gentianaceae |
| 21 | <i>Taxus wallichiana</i> Zucc (Synonym) <i>Taxus contorta</i> Griff. | Rakhal/Birmi | Taxaceae |
| 22 | <i>Trillium govanianum</i> Wall. ex D. Don | Himalayan trillium/ Nag chhatri | Melanthiaceae |

Table 2 The List of the Threatened Animal Species of the State

| No. | Scientific Name | Common Name | Family |
|-----|--|----------------------------|--------------|
| 1 | <i>Aquila nipalensis</i> Hodgson | Steppe eagle | Accipitridae |
| 2 | <i>Canis lupus chanco</i> Gray | Tibetan wolf | Canidae |
| 3 | <i>Capricornis thar</i> Hodgson | Himalayan serow | Bovidae |
| 4 | <i>Catreus wallichii</i> Hardwicke | Cheer pheasant | Phasianidae |
| 5 | <i>Gypaetus barbatus</i> Linnaeus | Bearded vulture | Accipitridae |
| 6 | <i>Gyps bengalensis</i> Gmelin | White-rumped vulture | Accipitridae |
| 7 | <i>Gyps tenuirostris</i> Gray | Slender billed vulture | Accipitridae |
| 8 | <i>Hemitragus jemlahicus</i> C. H. Smith | Himalayan tahr | Bovidae |
| 9 | <i>Moschus chrysogaster</i> Hodgson | Himalayan musk deer | Moschidae |
| 10 | <i>Parnassius charltonius</i> Gray | Regal apollo | Papilionidae |
| 11 | <i>Parnassius stoliczkanus</i> Felder & Felder | Ladakh banded apollo | Papilionidae |
| 12 | <i>Pucrasia macrolopha</i> Lesson | Koklass pheasant | Phasianidae |
| 13 | <i>Sarcogyps calvus</i> Scopoli | Red-headed vulture | Accipitridae |
| 14 | <i>Tragopan melanocephalus</i> Gray | Western tragopan/ jujurana | Phasianidae |
| 15 | <i>Tor putitora</i> Hamilton | Golden Mahseer | Cyprinidae |
| 16 | <i>Uncia uncia</i> Schreber | Snow leopard | Felidae |

Attachment II.2.4.3 Status of Human Wildlife Conflict (Findings from the Livelihood Survey)

Table 1 Family Members Affected by Wildlife

| District | Division | No of Respondents Interviewed | JFM | | | | | Non JFM | | | | | Total | | | | |
|---|------------|-------------------------------|-----------------|-------------------|-----------------|-------------------|----------|-----------------|-------------------|-----------------|-------------------|----------|-----------------|-------------------|-----------------|-------------------|-------|
| | | | 1 Male Adult | 2 Female Adult | 3 Mald Child | 4 Female Child | Total | 1 Male Adult | 2 Female Adult | 3 Mald Child | 4 Female Child | Total | 1 Male Adult | 2 Female Adult | 3 Mald Child | 4 Female Child | Total |
| Bilaspur | Bilaspur | 60 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| | Bharmour | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | | |
| | Chamba WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | | |
| Chamba | Pangi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | | |
| | Kinnaur | 40 | | | | 1 | 1 | | | | | 0 | 0 | 0 | 0 | 1 | |
| Kinnaur | Sarahan WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | | |
| | Kullu | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | | |
| Kullu | Kullu WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | | |
| | Karsog | 20 | | 2 | | | 2 | | | | | 0 | 0 | 2 | 0 | 2 | |
| Mandi | Mandi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| | Kotgarh | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| | Rampur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Theog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Total of Territorial | | 341 | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | |
| Kangra | Bajinath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Kullu | 11 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Mandi | Mandi | 3 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 1 | |
| Kangra | Palampur | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Parvati | 10 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Solan | Nalagarh | 5 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Solan | Baddi | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | |
| Grand Total | | 400 | 0 | 2 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 4 | |

Source: Livelihood Survey, JICA Study Team (2017)

Table 2 Incidences of Damages Caused by Wildlife (Crop Damage)

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | | % to the Total of Counts | | | |
|---|-------------|-------------------------------|-------------|---------------|-------------|------------|-------------|---------------|-------------|------------|-------------|---------------|-------------|------------|--------------------------|---------------|-------------|--------------|
| | | | 1 Monkey | 2 Wildboar | 3 Sambal | Total | 1 Monkey | 2 Wildboar | 3 Sambal | Total | 1 Monkey | 2 Wildboar | 3 Sambal | Total | 1 Monkey | 2 Wildboar | 3 Sambal | Total |
| Bilaspur | Bilaspur | 60 | 14 | 28 | 8 | 50 | 16 | 19 | 16 | 51 | 30 | 47 | 24 | 101 | 29.7 | 46.5 | 23.8 | 100.0 |
| | Bharmour | 20 | 10 | | | 10 | 9 | | | 9 | 19 | 0 | 0 | 19 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | | | | 0 | 14 | | | 14 | 14 | 0 | 0 | 14 | 100.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 10 | | | 10 | 10 | | | 10 | 20 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 15 | | | 15 | 20 | | | 20 | 35 | 0 | 0 | 35 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | 20 | | | | 0 | 19 | | 1 | 20 | 19 | 0 | 1 | 20 | 95.0 | 0.0 | 5.0 | 100.0 |
| | Kullu | 20 | 10 | | | 10 | 2 | | | 2 | 12 | 0 | 0 | 12 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu WL | 20 | | | | 0 | 18 | | | 18 | 18 | 0 | 0 | 18 | 100.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti (W/L) | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| | Karsog | 20 | 8 | | | 8 | 10 | 5 | | 15 | 18 | 5 | 0 | 23 | 78.3 | 21.7 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 6 | 6 | | 12 | 6 | 4 | | 10 | 12 | 0 | 0 | 22 | 54.5 | 45.5 | 0.0 | 100.0 |
| | Kotgarh | 20 | 8 | | | 8 | 8 | | | 8 | 16 | 0 | 0 | 16 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | 21 | 10 | | | 10 | 10 | | | 10 | 20 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 7 | | | 7 | 9 | | | 9 | 16 | 0 | 0 | 16 | 100.0 | 0.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 98 | 34 | 8 | 140 | 151 | 28 | 17 | 196 | 249 | 62 | 25 | 336 | 74.1 | 18.5 | 7.4 | 100.0 |
| Kangra | Bajjnath | 3 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Kullu | Kullu | 11 | | | | 0 | 3 | | | 3 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | | 0 | 2 | 1 | 1 | 4 | 2 | 1 | 1 | 4 | 50.0 | 25.0 | 25.0 | 100.0 |
| Kangra | Palampur | 1 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | | | 0 | 5 | 1 | | 6 | 5 | 1 | 0 | 6 | 83.3 | 16.7 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | | 0 | 12 | | 1 | 13 | 12 | 0 | 1 | 13 | 92.3 | 0.0 | 7.7 | 100.0 |
| Shimla | Theog | 1 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Solan | Baddi | 2 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 23 | 2 | 2 | 27 | 23 | 2 | 2 | 27 | 85.2 | 7.4 | 7.4 | 100.0 |
| Grand Total | | 400 | 98 | 34 | 8 | 140 | 174 | 30 | 19 | 223 | 272 | 64 | 27 | 363 | 74.9 | 17.6 | 7.4 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 3 Other Wildlife Causing Crop Damage (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | Non JFM | | | | | | | | | |
|---|------------|-------------------------------|-----------|----------|----------|----------|----------|----------|-----------|----------|-----------|-----------|----------|----------|----------|----------|----------|-----------|----------|-----------|----------|
| | | | Bear | Fox | Langur | Sparrow | Leopard | Parrot | Porcupine | Rabbit | Total | Bear | Fox | Langur | Sparrow | Leopard | Parrot | Porcupine | Rabbit | Total | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | 0 | | | | | | | | | | 0 |
| | Bharmour | 20 | 9 | | 1 | | | | | 6 | 16 | | | | | | | | | | 0 |
| | Chamba WL | 20 | | | | | | | | | 0 | 13 | | 7 | | | | | | | 20 |
| Chamba | Pangi | 20 | 7 | 1 | 1 | | | | | | 9 | | | | | | | | | | 0 |
| | Kinnaur | 40 | 11 | | | 2 | 2 | | | 1 | 16 | | | | | | | | | | 0 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | 0 | 1 | 3 | 1 | 2 | 1 | | | 1 | | 9 |
| | Kullu | 20 | 9 | | | | 4 | 1 | 1 | 1 | 16 | | | | | | | | | | 0 |
| Kullu | Kullu WL | 20 | | | | | | | | | 0 | 3 | 4 | | | | | | 1 | | 8 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | 0 | | | 1 | | | | | | 1 | 2 |
| | Karsog | 20 | | | | | | | | | 1 | | | | | | | | | | 0 |
| Mandi | Mandi | 20 | | | | | | | | | 0 | | | | | | | | | | 0 |
| | Kotgarh | 20 | 2 | | | | | | | 2 | 5 | | | | | | | | | | 0 |
| | Rampur | 21 | 9 | 1 | | | | | | 1 | 11 | | | | | | | | | | 0 |
| Shimla | Theog | 20 | | 1 | | | | | 1 | 2 | 6 | | | | | | | | | | 0 |
| Total of Territorial | | 341 | 47 | 3 | 2 | 6 | 3 | 4 | 12 | 7 | 84 | 17 | 7 | 8 | 3 | 1 | 0 | 2 | 1 | 39 | |
| Kangra | Bajinath | 3 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Kullu | Kullu | 11 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Kullu | Parvati | 10 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | 0 | 3 | | | | | | | | | 3 |
| Shimla | Theog | 1 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Shimla | Kotgarh | 2 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Grand Total | | 400 | 47 | 3 | 2 | 6 | 3 | 4 | 12 | 7 | 84 | 20 | 7 | 8 | 3 | 1 | 0 | 2 | 1 | 42 | |

Source: Livelihood Survey, JICA Study Team (2017)

Table 4. Other Wildlife Causing Crop Damage (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | % To the Total of Counts | | | | | | | | | |
|---|------------|-------------------------------|-----------|-----------|-----------|----------|----------|----------|-----------|----------|------------|--------------|--------------------------|------------|------------|------------|------------|-------------|------------|--------------|--------------|-------|
| | | | Bear | Fox | Langur | Sparrow | Leopard | Parrot | Porcupine | Rabbit | Total | Bear | Fox | Langur | Sparrow | Leopard | Parrot | Porcupine | Rabbit | Total | | |
| Bilaspur | Bilaspur | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 0 |
| Chamba | Bharmour | 20 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | 0 | 16 | 56.3 | 0.0 | 6.3 | 0.0 | 0.0 | 0.0 | 0.0 | 37.5 | 0.0 | 100.0 |
| | Chamba WL | 20 | 13 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 20 | 65.0 | 0.0 | 35.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Pangi | 20 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 77.8 | 11.1 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 11 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 16 | 68.8 | 0.0 | 0.0 | 12.5 | 12.5 | 0.0 | 6.3 | 0.0 | 6.3 | 0.0 | 100.0 |
| | Sarahan WL | 20 | 1 | 3 | 1 | 2 | 1 | 0 | 1 | 0 | 9 | 11.1 | 33.3 | 11.1 | 22.2 | 11.1 | 0.0 | 11.1 | 0.0 | 11.1 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | 9 | 0 | 0 | 4 | 1 | 1 | 1 | 0 | 16 | 56.3 | 0.0 | 0.0 | 25.0 | 6.3 | 6.3 | 6.3 | 6.3 | 0.0 | 100.0 | |
| | Kullu WL | 20 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 37.5 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.5 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 | |
| Mandi | Karsog | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Mandi | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0.0 | |
| | Kotgarh | 20 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 5 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 20.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Rampur | 21 | 9 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 11 | 81.8 | 9.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | 0.0 | 0.0 | 100.0 | |
| | Theog | 20 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 6 | 10 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 10.0 | 20.0 | 60.0 | 0.0 | 100.0 | |
| Total of Territorial | | 341 | 64 | 10 | 10 | 9 | 4 | 4 | 14 | 8 | 123 | 52.0 | 8.1 | 8.1 | 7.3 | 3.3 | 3.3 | 11.4 | 6.5 | 100.0 | | |
| Kangra | Bajnath | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Kullu | Kullu | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Mandi | Mandi | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Kullu | Parvati | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Kinnaur | Kinnaur | 21 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Solan | Nalagarh | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | |
| Total of Graziers/ Grassland Users | | 59 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Grand Total | | 400 | 67 | 10 | 10 | 9 | 4 | 4 | 14 | 8 | 126 | 53.2 | 7.9 | 7.9 | 7.1 | 3.2 | 3.2 | 11.1 | 6.3 | 100.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

Table 5 Damage to House and Other Properties by Major Wildlife

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | | % to the Total of Counts | | | |
|---|------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------------------------|--------------|------------|--------------|
| | | | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total |
| | | | Monkey | Wildboar | Sambal | | Monkey | Wildboar | Sambal | | Monkey | Wildboar | Sambal | | Monkey | Wildboar | Sambal | |
| Bilaspur | Bilaspur | 60 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| | Bharmour | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| | Chamba WL | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Chamba | Pangi | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| | Kinnaur | 40 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Kinnaur | Sarahan WL | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| | Kullu | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Kullu | Kullu WL | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| | Karsog | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Mandi | Mandi | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| | Kotgarh | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| | Rampur | 21 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Shimla | Theog | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Bajjnath | 3 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Kullu | Kullu | 11 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Mandi | Mandi | 3 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Kangra | Palampur | 1 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Kullu | Parvati | 10 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | 0 | | | 1 | 0 | | | 1 | 0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Solan | Nalagarh | 5 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Shimla | Kotgarh | 2 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Solan | Baddi | 2 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 6 Other Wildlife Causing Property Damage

| District | Division | No of Respondents Interviewed | JFM | | | Non JFM | | | Total | | | % to the Total of Counts | | |
|---|------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------------------------|-------------|--------------|
| | | | Parrot | Rat | Total | Parrot | Rat | Total | Parrot | Rat | Total | Parrot | Rat | Total |
| Bilaspur | Bilaspur | 60 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| | Bharmour | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| | Chamba WL | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Chamba | Pangi | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| | Kinnaur | 40 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Kinnaur | Sarahan WL | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| | Kullu | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Kullu | Kullu WL | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| | Karsog | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Mandi | Mandi | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| | Kotgarh | 20 | | | 0 | 1 | | 1 | 1 | 0 | 1 | 100.0 | 0.0 | 100.0 |
| | Rampur | 21 | | | 0 | | 3 | 3 | 0 | 3 | 3 | 0.0 | 100.0 | 100.0 |
| Shimla | Theog | 20 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Total of Territorial | | 341 | 0 | 0 | 0 | 1 | 3 | 4 | 1 | 3 | 4 | 25.0 | 75.0 | 100.0 |
| Kangra | Bajjnath | 3 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Kullu | Kullu | 11 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Mandi | Mandi | 3 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Kangra | Palampur | 1 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Kullu | Parvati | 10 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Shimla | Theog | 1 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Solan | Baddi | 2 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Grand Total | | 400 | 0 | 0 | 0 | 1 | 3 | 4 | 1 | 3 | 4 | 25.0 | 75.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 7 Injury to Human Being by Wildlife

| District | Division | No of Respondents Interviewed | JFM | | | | | Non JFM | | | | | Total | | | | | % to the Total of Counts | | | | | |
|---|-----------------------------|-------------------------------|----------|----------|----------|-----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|-----------|----------|--------------------------|------------|------------|--------------|--------------|------------|
| | | | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | |
| | | | Monkey | Wildboar | Sambal | Porcupine | | Monkey | Wildboar | Sambal | Porcupine | | Monkey | Wildboar | Sambal | Porcupine | | Monkey | Wildboar | Sambal | Porcupine | | |
| Bilaspur | Bilaspur | 60 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| | Bharmour | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Chamba | Chamba WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| | Pangi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 40 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| | Sarahan WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| | Kullu WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Mandi | Karsog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| | Mandi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| | Kotgarh | 20 | | | | | 0 | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 |
| | Rampur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Shimla | Theog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| | Total of Territorial | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kangra | Bajjnath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100 | |

Source: Livelihood Survey, JICA Study Team (2017)

Table 8 Loss of Livestock by Major Wildlife

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total of Counts | | | | % to the Total of Counts | | | |
|---|------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------------|----------|----------|----------|--------------------------|-------------|------------|--------------|
| | | | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total |
| | | | Monkey | Wildboar | Sambal | | Monkey | Wildboar | Sambal | | Monkey | Wildboar | Sambal | | Monkey | Wildboar | Sambal | |
| Bilaspur | Bilaspur | 60 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Bharmour | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Chamba WL | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Chamba | Pangi | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Kinnaur | 40 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Sarahan WL | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Kullu | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Kullu WL | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Karsog | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Mandi | Mandi | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Kotgarh | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| | Rampur | 21 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Shimla | Theog | 20 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 |
| Kangra | Bajjnath | 3 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Kullu | Kullu | 11 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Mandi | Mandi | 3 | | | | 0 | 1 | 1 | | 2 | 1 | 1 | 0 | 2 | 50.0 | 50.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Kullu | Parvati | 10 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Kinnaur | Kinnaur | 21 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Solan | Nalagarh | 5 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Solan | Baddi | 2 | | | | 0 | | | | 0 | | | | 0 | | | | 0.0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 3 | 1 | 0 | 4 | 75.0 | 25.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 3 | 1 | 0 | 4 | 75.0 | 25.0 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 9 Loss of Livestock by Other Types of Wildlife (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | Non JFM | | | | | | | | | | |
|---|------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total | |
| | | | Bear | Leopard | Tiger | Cow | Donkey | Mule | Sheep | Stray Cow | | Bear | Leopard | Tiger | Cow | Donkey | Mule | Sheep | Stray Cow | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | 1 | 1 | | 1 | | | | | | | | 1 |
| | Bharmour | 20 | | | 1 | | | | | | 1 | | | | | | | | | | 0 |
| | Chamba WL | 20 | | | | | | | | | 0 | 2 | 1 | | | | | | | | 3 |
| Chamba | Pangi | 20 | | | | | | | | | 0 | | | | | | | 1 | | | 1 |
| | Kinnaur | 40 | | | | | | | | | 0 | | | | | | | | | | 0 |
| | Sarahan WL | 20 | | | | | | | | | 0 | | 1 | | 1 | | | | | | 2 |
| | Kullu | 20 | | 1 | | | | | | | 1 | | | | | | | | | | 0 |
| | Kullu WL | 20 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | 0 | | | | | | | | | | 0 |
| | Karsog | 20 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Mandi | Mandi | 20 | | | | | | | | | 0 | | | | | | | | | | 0 |
| | Kotgarh | 20 | | | 1 | | | | | | 1 | | | | | | | | | | 0 |
| | Rampur | 21 | | | | | | | | | 0 | | | 1 | | | 1 | | | | 2 |
| Shimla | Theog | 20 | | 1 | | | | | | | 1 | | | | | | | | | | 0 |
| Total of Territorial | | 341 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 2 | 3 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | |
| Kangra | Bajinath | 3 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Kullu | Kullu | 11 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Kullu | Parvati | 10 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | 0 | | 2 | | 1 | 2 | 1 | | | | 6 |
| Shimla | Theog | 1 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | 0 | | | 1 | | | | | | | 1 |
| Shimla | Kotgarh | 2 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | 0 | | | | | | | | | | 0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 7 | |
| Grand Total | | 400 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 2 | 5 | 2 | 2 | 2 | 2 | 1 | 0 | 16 | |

Source: Livelihood Survey, JICA Study Team (2017)

Table 10 Loss of Livestock by Other Types of Wildlife (2)

| District | Division | No of Respondents Interviewed | Total of Counts | | | | | | | | Total | |
|---|------------|-------------------------------|-----------------|--------------|------------|----------|-------------|-----------|------------|----------------|----------|-----------|
| | | | 1 Bear | 2 Leopard | 3 Tiger | 4 Cow | 5 Donkey | 6 Mule | 7 Sheep | 8 Stray Cow | | |
| Bilaspur | Bilaspur | 60 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Chamba | Bharmour | 20 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | Chamba WL | 20 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | Pangi | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Kinnaur | Kinnaur | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sarahan WL | 20 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Kullu | Kullu | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | Kullu WL | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Karsog | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Mandi | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgarh | 20 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | Rampur | 21 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| | Theog | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total of Territorial | | 341 | 2 | 5 | 3 | 1 | 0 | 1 | 1 | 1 | 1 | 14 |
| Kangra | Bajjnath | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Kinnaur | 21 | 0 | 2 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 6 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 7 |
| Grand Total | | 400 | 2 | 7 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 21 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 11 Compensation Paid (Damage to House and Property)

| District | Division | No of Respondents Interviewed | JFM | | Non JFM | | Total | |
|---|------------|-------------------------------|----------------------|-----------------|----------------------|-----------------|-----------------|--------------------------------|
| | | | 1 | 2 | 3 | 4 | No of Household | Average amount of compensation |
| | | | No of Household Paid | Amount Received | No of Household Paid | Amount Received | | |
| Bilaspur | Bilaspur | 60 | | | | | | |
| Chamba | Bharmour | 20 | | | | | | |
| | Chamba WL | 20 | | | | | | |
| | Pangi | 20 | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | |
| | Sarahan WL | 20 | | | | | | |
| Kullu | Kullu | 20 | | | | | | |
| | Kullu WL | 20 | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | |
| Mandi | Karsog | 20 | | | | | | |
| | Mandi | 20 | | | | | | |
| Shimla | Kotgarh | 20 | | | | | | |
| | Rampur | 21 | | | | | | |
| | Theog | 20 | | | | | | |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Bajjnath | 3 | | | | | | |
| Kullu | Kullu | 11 | | | | | | |
| Mandi | Mandi | 3 | | | | | | |
| Kangra | Palampur | 1 | | | | | | |
| Kullu | Parvati | 10 | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | |
| Shimla | Theog | 1 | | | | | | |
| Solan | Nalagarh | 5 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | |
| Solan | Baddi | 2 | | | | | | |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 0 | 0 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 12 Compensation Paid (Injury to Human Being)

| District | Division | No of Respondents Interviewed | JFM | | Non JFM | | Total | |
|---|------------|-------------------------------|----------------------|-----------------|----------------------|-----------------|-----------------|--------------------------------|
| | | | 1 | 2 | 3 | 4 | No of Household | Average amount of compensation |
| | | | No of Household Paid | Amount Received | No of Household Paid | Amount Received | | |
| Bilaspur | Bilaspur | 60 | | | | | | |
| Chamba | Bharmour | 20 | | | | | | |
| | Chamba WL | 20 | | | | | | |
| | Pangi | 20 | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | |
| | Sarahan WL | 20 | | | | | | |
| Kullu | Kullu | 20 | | | | | | |
| | Kullu WL | 20 | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | |
| Mandi | Karsog | 20 | | | | | | |
| | Mandi | 20 | | | | | | |
| Shimla | Kotgarh | 20 | | | | | | |
| | Rampur | 21 | | | | | | |
| | Theog | 20 | | | | | | |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Bajjnath | 3 | | | | | | |
| Kullu | Kullu | 11 | | | | | | |
| Mandi | Mandi | 3 | | | | | | |
| Kangra | Palampur | 1 | | | | | | |
| Kullu | Parvati | 10 | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | |
| Shimla | Theog | 1 | | | | | | |
| Solan | Nalagarh | 5 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | |
| Solan | Baddi | 2 | | | | | | |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 0 | 0 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 13 Compensation Paid (Loss of Livestock)

| District | Division | No of Respondents Interviewed | JFM | | Non JFM | | Total | |
|---|------------|-------------------------------|----------------------|-----------------|----------------------|-----------------|-----------------|--------------------------------|
| | | | 1 | 2 | 3 | 4 | No of Household | Average amount of compensation |
| | | | No of Household Paid | Amount Received | No of Household Paid | Amount Received | | |
| Bilaspur | Bilaspur | 60 | | | | | | |
| Chamba | Bharmour | 20 | | | | | | |
| | Chamba WL | 20 | | | | | | |
| | Pangi | 20 | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | |
| | Sarahan WL | 20 | | | | | | |
| Kullu | Kullu | 20 | | | | | | |
| | Kullu WL | 20 | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | |
| Mandi | Karsog | 20 | | | | | | |
| | Mandi | 20 | | | | | | |
| Shimla | Kotgarh | 20 | | | | | | |
| | Rampur | 21 | | | | | | |
| | Theog | 20 | | | | | | |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Bajjnath | 3 | | | | | | |
| Kullu | Kullu | 11 | | | | | | |
| Mandi | Mandi | 3 | | | | | | |
| Kangra | Palampur | 1 | | | | | | |
| Kullu | Parvati | 10 | | | | | | |
| Kinnaur | Kinnaur | 21 | | | 1 | 16,000 | 1 | 16,000 |
| Shimla | Theog | 1 | | | | | | |
| Solan | Nalagarh | 5 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | |
| Solan | Baddi | 2 | | | | | | |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 1 | 16,000 | 1 | 16,000 |
| Grand Total | | 400 | 0 | 0 | 1 | 16,000 | 1 | 16,000 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 14 Number of Household Aware of Measures Taken by HPFD to Mitigate Human Wildlife Conflict

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Total | | | % of Yes =(Total-Yes)/ a |
|---|------------|-----------------------------------|----------|-----------|-----------|----------|------------|------------|----------|------------|------------|--------------------------|
| | | | 1 Yes | 2 No | Total | 1 Yes | 2 No | Total | 1 Yes | 2 No | Total | |
| Bilaspur | Bilaspur | 60 | | 22 | 22 | | 7 | 7 | 0 | 29 | 29 | 0.0 |
| Chamba | Bharmour | 20 | 1 | 7 | 8 | | 5 | 5 | 1 | 12 | 13 | 5.0 |
| | Chamba WL | 20 | | | 0 | | 14 | 14 | 0 | 14 | 14 | 0.0 |
| | Pangi | 20 | | 4 | 4 | | 5 | 5 | 0 | 9 | 9 | 0.0 |
| Kinnaur | Kinnaur | 40 | | 12 | 12 | | 12 | 12 | 0 | 24 | 24 | 0.0 |
| | Sarahan WL | 20 | | | 0 | 2 | 10 | 12 | 2 | 10 | 12 | 10.0 |
| Kullu | Kullu | 20 | | 6 | 6 | | 7 | 7 | 0 | 13 | 13 | 0.0 |
| | Kullu WL | 20 | | | 0 | | 11 | 11 | 0 | 11 | 11 | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | | 8 | 8 | 0 | 8 | 8 | 0.0 |
| Mandi | Karsog | 20 | | 8 | 8 | | 5 | 5 | 0 | 13 | 13 | 0.0 |
| | Mandi | 20 | | 6 | 6 | | 8 | 8 | 0 | 14 | 14 | 0.0 |
| Shimla | Kotgarh | 20 | 3 | 3 | 6 | | 6 | 6 | 3 | 9 | 12 | 15.0 |
| | Rampur | 21 | | 8 | 8 | 1 | 7 | 8 | 1 | 15 | 16 | 4.8 |
| | Theog | 20 | | 7 | 7 | | 6 | 6 | 0 | 13 | 13 | 0.0 |
| Total of Territorial | | 341 | 4 | 83 | 87 | 3 | 111 | 114 | 7 | 194 | 201 | 2.1 |
| Kangra | Bajjnath | 3 | | | 0 | | 1 | 1 | 0 | 1 | 1 | 0.0 |
| Kullu | Kullu | 11 | | | 0 | 1 | 7 | 8 | 1 | 7 | 8 | 9.1 |
| Mandi | Mandi | 3 | | | 0 | | 2 | 2 | 0 | 2 | 2 | 0.0 |
| Kangra | Palampur | 1 | | | 0 | | 1 | 1 | 0 | 1 | 1 | 0.0 |
| Kullu | Parvati | 10 | | | 0 | | 10 | 10 | 0 | 10 | 10 | 0.0 |
| Kinnaur | Kinnaur | 21 | | | 0 | | 6 | 6 | 0 | 6 | 6 | 0.0 |
| Shimla | Theog | 1 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Solan | Nalagarh | 5 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Shimla | Kotgarh | 2 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Solan | Baddi | 2 | | | 0 | | | 0 | 0 | 0 | 0 | 0.0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 1 | 27 | 28 | 1 | 27 | 28 | 1.7 |
| Grand Total | | 400 | 4 | 83 | 87 | 4 | 138 | 142 | 8 | 221 | 229 | 2.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Table 15 Type of Measures Taken by HPFD to Mitigate Human Wildlife Conflict

| District | Division | No of Respondents Interviewed | JFM | | | | | Non JFM | | | | | Total | | | | |
|---|------------|-------------------------------|---------------|----------|------------------|----------------------------|----------|---------------|----------|------------------|----------------------------|-----------|---------------|----------|------------------|----------------------------|-----------|
| | | | 1 | 2 | 3 | 4 | | 1 | 2 | 3 | 4 | | 1 | 2 | 3 | 4 | 5 |
| | | | Solar fencing | Trenches | Concrete fencing | Other Unspecified measures | Total | Solar fencing | Trenches | Concrete fencing | Other Unspecified measures | Total | Solar fencing | Trenches | Concrete fencing | Other Unspecified measures | Total |
| Bilaspur | Bilaspur | 60 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | Bharmour | 20 | | | | | 0 | | | | 2 | 2 | 0 | 0 | 0 | 2 | 2 |
| | Chamba WL | 20 | | | | | 0 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| Chamba | Pangi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kinnaur | 40 | | | | | 0 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| | Sarahan WL | 20 | | | | | 0 | | | | 2 | 2 | 0 | 0 | 0 | 2 | 2 |
| | Kullu | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kullu WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | Karsog | 20 | | | | | 0 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| Mandi | Mandi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kotgarh | 20 | | | | 3 | 3 | | | | | 0 | 0 | 0 | 0 | 3 | 3 |
| | Rampur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Theog | 20 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 0 | 1 |
| Total of Territorial | | 341 | 0 | 0 | 0 | 3 | 3 | 0 | 1 | 0 | 7 | 8 | 0 | 1 | 0 | 10 | 11 |
| Kangra | Bajinath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | | | | | 0 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| Mandi | Mandi | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | | | | | 0 | | 1 | | 1 | 2 | 0 | 1 | 0 | 1 | 2 |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Baddi | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 0 | 1 | 0 | 2 | 3 |
| Grand Total | | 400 | 0 | 0 | 0 | 3 | 3 | 0 | 2 | 0 | 9 | 11 | 0 | 2 | 0 | 12 | 14 |

Source: Livelihood Survey, JICA Study Team (2017)

Attachment II.2.7.1 (1) Livelihood Survey

1. Introduction

Two types of the survey were planned and conducted by the study team during the field survey. One was the rapid field survey using the participatory tools and the other was the household survey using questionnaire as livelihood survey. The data tables generated from the household survey are given as attachment.

2. Survey Methods for Livelihood Survey

The survey ranges were identified from different bio geo regions and river catchment. Socio economic indicators and vulnerability Index from the HP Environment Master Plan were also taken into consideration. The list of the ranges identified by the study team is given in the table below.

Ranges Identified for the Livelihood Survey

| Division | Range | BioGeo Region | River Catchment |
|------------|-------------------------|------------------------|------------------|
| Bilaspur | Ghumarwin | Shivalik | Satluj Catchment |
| | Sarghat | Shivalik | Satluj Catchment |
| Bharmour | Swai | North Western Himalaya | Chenab Catchment |
| Pangi | Purthi | North Western Himalaya | Chenab Catchment |
| Kullu | Kullu | North Western Himalaya | Beas Catchment |
| Lahaul | Keyllong Tehsil | Trans Himalaya | Chenab Catchment |
| Karsog | Karsog | North Western Himalaya | Satluj Catchment |
| Mandi | Kataula | North Western Himalaya | Beas Catchment |
| Kinnaur | Kalpa | North Western Himalaya | Satluj Catchment |
| | Kalpa | Western Himalaya | Satluj Catchment |
| Kotgarh | Kotgarh | Western Himalaya | Yamuna Catchment |
| Rampur | Sarahan | North Western Himalaya | Satluj Catchment |
| Theog | Theog | Western Himalaya | Yamuna Catchment |
| Chamba WL | Bharmour | North Western Himalaya | Chenab Catchment |
| Kullu WI | Inderlika National Park | North Western Himalaya | Beas Catchment |
| Sarahan WL | Rupi | North Western Himalaya | Satluj Catchment |
| Spiti WL | Kaza Wildlife | Trans Himalaya | Satluj Catchment |

Source: JICA Study Team (2017)

A set of questionnaire was designed by the study team and finalised after the field testing. The systematic random sampling method was adopted. Field data collection and preliminary data processing was sub-contracted. The study team has provided enumerators' training and field follow up. The completed questionnaires were collected from the sub-contract for further data processing and cross verification.

The study team also carried out the household survey with the graziers/ grassland users. The informants were identified from alpine and sub-alpine pastures/ grasslands after consulting HPFD.

3. Survey Households

1) Territorial and Wildlife Divisions

4 wildlife divisions and 11 forest divisions including 17 ranges were selected from different bio geo region and river catchment. Amongst the ranges in the territorial divisions, villages having JFMCs and not having JFMCs were selected from survey. From each village, 10 households were to be identified from the voters' register or from the members' register of the JFMC/ any other community based forest management institutions if there is any. In the wildlife divisions, as the community based institutions were not recognised in the identified ranges, two villages surveyed were selected where accessible and falling within the bio geo-region. The survey areas were at times difficult to reach due to the weather and road condition and consumed longer time to collect the field data and thus, caused the subsequent delay in the data processing and analysis.

The total number of 341 households from the territorial and wildlife divisions were interviewed and all the questionnaires were used for analysis. The number of households interviewed segregated by gender of the head of household is given in the table below. Out of the total number of households, 56 households were female headed households. In most cases, the female head of household is likely to live with their adult male offspring(s) who would function as *de-facto* head of household.

The Number of Male Headed Households (MHH) and Female Headed Households (FHH) in the Surveyed Divisions – Territorial and Wildlife Divisions

| District | Division | JFM | | | Non JFM | | | Total | | | |
|---|------------|------------|-----------|------------|------------|-----------|------------|------------|-----------|------------|----------------------------|
| | | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total | % of FHH to Division Total |
| Bilaspur | Bilaspur | 33 | 7 | 40 | 18 | 2 | 20 | 51 | 9 | 60 | 15.0 |
| Chamba | Bharmour | 11 | | 11 | 8 | 1 | 9 | 19 | 1 | 20 | 5.0 |
| | Chamba WL | | | 0 | 15 | 5 | 20 | 15 | 5 | 20 | 25.0 |
| | Pangi | 6 | 4 | 10 | 7 | 3 | 10 | 13 | 7 | 20 | 35.0 |
| Kinnaur | Kinnaur | 17 | 2 | 19 | 20 | 1 | 21 | 37 | 3 | 40 | 7.5 |
| | Sarahan WL | | | 0 | 19 | 1 | 20 | 19 | 1 | 20 | 5.0 |
| Kullu | Kullu | 10 | | 10 | 7 | 3 | 10 | 17 | 3 | 20 | 15.0 |
| | Kullu WL | | | 0 | 17 | 3 | 20 | 17 | 3 | 20 | 15.0 |
| Lahaul & Spiti | Spiti(W/L) | | | 0 | 17 | 3 | 20 | 17 | 3 | 20 | 15.0 |
| Mandi | Karsog | 10 | | 10 | 10 | | 10 | 20 | 0 | 20 | 0.0 |
| | Mandi | 10 | | 10 | 7 | 3 | 10 | 17 | 3 | 20 | 15.0 |
| Shimla | Kotgarh | 8 | 2 | 10 | 8 | 2 | 10 | 16 | 4 | 20 | 20.0 |
| | Rampur | 7 | 3 | 10 | 8 | 3 | 11 | 15 | 6 | 21 | 28.6 |
| | Theog | 7 | 4 | 11 | 5 | 4 | 9 | 12 | 8 | 20 | 40.0 |
| Total of Territorial/ WL divisions | | 119 | 22 | 141 | 166 | 34 | 200 | 285 | 56 | 341 | 16.4 |

Source: JICA Study Team (2017)

2) Graziers/ Grassland Users

The study team has identified in consultation with HPFD to identify the areas in the alpine and sub-alpine pastures. In total, 59 graziers or grassland users were interviewed using the same questionnaire used in the livelihood survey. The graziers communities were mostly Gaddis and Gujjars and male members would migrate during the summer seasons and the rest of the families are settled in

the respective divisions. The graziers/ grassland users were interviewed at Thrass and Malana villages in Parvati Division, Lippa village in Kinnaur division and Hatu camping site in Lahaul division. The number of respondents interviewed are given in the table below.

Number of Respondents for Livelihood Survey – Grazers & Grassland Users

| District | Division | JFM | | | Non JFM | | | Total | | | |
|---|----------|----------|----------|----------|-----------|----------|-----------|-----------|----------|-----------|----------------------------|
| | | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total | % of FHH to Division Total |
| Kangra | Bajjnath | | | 0 | 3 | | 3 | 3 | 0 | 3 | 0.0 |
| Kullu | Kullu | | | 0 | 11 | | 11 | 11 | 0 | 11 | 0.0 |
| Mandi | Mandi | | | 0 | 3 | | 3 | 3 | 0 | 3 | 0.0 |
| Kangra | Palampur | | | 0 | 1 | | 1 | 1 | 0 | 1 | 0.0 |
| Kullu | Parvati | | | 0 | 10 | | 10 | 10 | 0 | 10 | 0.0 |
| Kinnaur | Kinnaur | | | 0 | 20 | 1 | 21 | 20 | 1 | 21 | 4.8 |
| Shimla | Theog | | | 0 | 1 | | 1 | 1 | 0 | 1 | 0.0 |
| Solan | Nalagarh | | | 0 | 5 | | 5 | 5 | 0 | 5 | 0.0 |
| Shimla | Kotgarh | | | 0 | 2 | | 2 | 2 | 0 | 2 | 0.0 |
| Solan | Baddi | | | 0 | 2 | | 2 | 2 | 0 | 2 | 0.0 |
| Total of Graziers/ Grassland Users | | 0 | 0 | 0 | 58 | 1 | 59 | 58 | 1 | 59 | 1.7 |

Source: JICA Study Team (2017)

4. Remarks

- ◆ The data was separated between the territorial/ wildlife divisions and graziers/ grassland users. The data of each group was compared between JFM and Non JFM. Where relevant, the comparison by gender of the household members or head of households were made. Descriptive statistical analysis was carried out.
- ◆ Due to the time constraints, scrutinisation of data was done to the limited extent.
- ◆ To gain further insights into the village conditions, rapid field survey was carried out in the selected villages using participatory data collection tools. The findings are incorporated into the main text.
- ◆ Local units like slippers, bighas, and biswas were used in the survey. The conversion rate is given below the data table.

5. Data Tables

In this part of the attachment, socio economic data and timber requirement are given in **Attachment II.2.7.1 (2)** and the list of data tables are indicated hereunder. Also, status of timber distribution, and human wildlife conflict related data tables collected from the livelihood survey are given in **Attachment II.2.3.2** and **Attachment II.2.4.3** respectively.

➤ List of Data Tables

| Item | | Item | |
|------|--|------|--|
| 1 | Households Interviewed during Livelihood Survey | 7.5 | No of Goat |
| 2 | Socio-economic Background | 7.6 | No of Sheep |
| 2.1 | Economic Status by Ration Card (1), (2) | 7.7 | No of Ox |
| 2.2 | MGNREGA Job Card Holders | 7.8 | No of Horse |
| 2.3 | Social Groups (1), (2) | 7.9 | Sources of Feed (Cow) |
| 2.4 | Religion (1) - (3) | 7.10 | Sources of Feed (Buffalo) |
| 3 | Demography | 7.11 | Sources of Feed (Goat) |
| 3.1 | Population (1) | 7.12 | Sources of Feed (Sheep) |
| 3.2 | Education (Age above 6) (1) - (7) | 7.13 | Sources of Feed (Ox) |
| 3.3 | Languages (above 6 years old) (1), (2) | 7.14 | Weekly Expenditure on Purchased Feed (1) - (3) |
| 3.4 | Migration | 8 | Grazing |
| 3.5 | Primary Occupation | 8.1 | Average Duration of Grazing between April 2016 - March 2017 (1), (2) |
| 3.6 | Economic Activities Other than Primary Occupation | 9 | Household Energy |
| 4 | Wages | 9.1 | Types of Household Energies Used (Multiple Response) |
| 4.1 | Number of Persons Engaged in Different Types of Work (Male) (1), (2) | 9.2 | Average Consumption of Fuel |
| 4.2 | Place of Work (Male) | 9.3 | Source of Fuelwood (1), (2) |
| 4.3 | Average Number of Days Worked (Male) (1), (2) | 9.4 | Fuel Consumption at Household during Winter |
| 4.4 | Average Wages by Work Type (Male) (1), (2) | 10 | Income & Expenditure (April 2016 - March 2017) |
| 4.5 | Average Total Wages Earned (Male) (1), (2) | 10.1 | Sources of Income (1) - (8) |
| 4.6 | Number of Persons Engaged in Different Types of Work (Female) (1), (2) | 10.2 | Average Household Income by Sources (1) - (7) |
| 4.7 | Place of Work (Female) | 10.3 | Average of Total Household/ Per Capita Income |
| 4.8 | Average Number of Days Worked (Female) (1), (2) | 10.4 | Itemised Average Expenditure (1), (2) |
| 4.9 | Average Wages by Type of Work (Female) (1), (2) | 10.5 | Average Total Household/ Per Capita Expenditure |
| 4.10 | Average Total Wages Earned (Female) (1), (2) | 11 | Preferences of Tree Species |
| 5 | Housing Condition | 11.1 | No of Households Planting Tree Species around Homestead and Agriculture Land including Ridges |
| 5.1 | Type of Housing | 11.2 | Purposes of Planting Various Species |
| 5.2 | Materials Used for Houses | 12 | Requirement of Timber |
| 5.3 | Household Amenities | 12.1 | Number of Families Used Timber and Small Timber between April 2016 and March 2017 |
| 5.4 | Household Assets | 12.2 | Volume of Timber Used between April 2016 and March 2017 |
| 6 | Landholding | 12.3 | Small Timber (i.e. Poles of different sizes, fencing materials, branches) Used between April 2016 and March 2017 |
| 6.1 | Cultivable Own Land (Irrigated) (1), (2) | 13 | Agriculture |
| 6.2 | Cultivable Own Land (Unirrigated) (1), (2) | 13.1 | No of Households Growing Crops (1), (2) |
| 6.3 | Orchard (Irrigated) (1), (2) | 13.2 | Production (1) - (6) |
| 6.4 | Orchard (Unirrigated) (1), (2) | 13.3 | Where to Sell the Produces (for Crops) |
| 6.5 | Own Forest and Grasslands (1), (2) | 14 | Orchard/ Home Garden |
| 6.6 | FRA | 14.1 | No of Households Growing Fruit Trees (1), (2) |
| 6.7 | Irrigation | 14.2 | Production (1), (2) |
| 6.8 | Homestead (1), (2) | 14.3 | Where to Sell the Produces (for Fruits) |
| 7 | Livestock | 14.4 | Access to Market Related Information |
| 7.1 | No of Cow | 14.5 | Who Collects Market related Information? |
| 7.2 | No of Buffalo | 15 | NTPP |
| 7.3 | No of Young | 15.1 | No of Households Collecting Various NTFPs (JFM) |
| 7.4 | No of Poultry | | |

| Item | | Item | |
|-------|--|-------|---|
| 15.1 | No of Households Collecting Various NTFPs (Non JFM) | 16.14 | Who Received Training on Micro Finance? |
| | No of Households Collecting Various NTFPs (Total) | 17 | Food Shortage |
| | No of Households Collecting Various NTFPs (% to the Total No of Respondents) | 17.1 | No of Households Experienced Food Shortage (April 2016-March 2017) |
| 15.2 | Sources of NTFPs | 17.2 | Average Number of Days Experienced Food Shortage |
| 15.3 | No of Days for Collection and No of Persons Engaged | 17.3 | Coping Strategy in the Case of Food Shortage (1), (2) |
| 15.4 | Volume of NTFPs Collected (1), (2) | 18 | Health |
| 15.5 | No of Households Engaged in NTFP Processing (JFM) | 18.1 | No of Households Experienced Food Shortage (April 2016-March 2017) |
| | No of Households Engaged in NTFP Processing (Non JFM) | 18.2 | Distance to the nearest Health Centre/ Medical Facilities |
| | No of Households Engaged in NTFP Processing (Total) | 18.3 | Means to Reach the Health Centre/ Medical Facilities |
| 15.6 | Type of Processing for Main NTFPs (1), (2) | 18.4 | Who Will Accompany the Female Family Members to the Health Centre/ Medical Facilities |
| 15.7 | No of Persons Engaged in Processing (1) - (3) | 18.5 | Reasons for Not Visiting Health Centre/ Medical Facilities |
| 15.8 | Place of Sale | 19 | Sanitation |
| 15.9 | Problems in NTFP Harvesting | 19.1 | Availability of Bathing Space at Home |
| 15.10 | Problems in NTFP Processing | 19.2 | Do All Members of Your Family Use the Bathing Space at Home? |
| 15.11 | Problems in NTFP Selling | 19.3 | Where Do Your Family Members Go to Bathe? |
| 15.12 | Access to NTFP Market Information | 19.4 | Availability of Toilet at Home |
| 15.13 | Who Collects Market Information | 19.5 | Do All Members of Your Family Use Toilet at Home? |
| 16 | Savings and Debt | 19.6 | Reasons for Not Using Toilet |
| 16.1 | No of Persons Who Have Bank Account (18 years and above) | 19.7 | Where Do Your Family Members for Toilet? |
| 16.2 | Reasons for Not Having Bank Account | 20 | Access to Various Offices and Schools |
| 16.3 | (Non-Bank Account Holders) Purposes to Have Bank Account (If Possible) | 20.1 | Average Distance to Various Offices, Schools, Health Related Facilities (1), (2) |
| 16.4 | Preferred Type of Bank Account | 20.2 | Mode of Transportation for Government Offices etc. |
| 16.5 | Savings, Loan and Other Bank Transactions (JFM) | 21 | Participation in Community Organisations/ Village Governance |
| 16.6 | Savings, Loan and Other Bank Transactions (Non-JFM, Total) | 21.1 | How Long Have you Been a Member of Different Types of Village Organisations/ Groups? |
| 16.7 | Reasons for Not Using Bank Accounts So Frequently (1) | 21.2 | Who Has the Membership? |
| 16.8 | Reasons for Not Using Bank Accounts So Frequently (2) | 21.3 | Who Goes to the Meeting? |
| 16.9 | Average Distance to Bank and No of Persons Took Loan | 21.4 | Advantages of Being a Member |
| 16.10 | No of Persons Tool Loan from Various Financial Institutions and Average Amount | 21.5 | Frequency of Attending Meetings |
| 16.11 | Who Took Loan | 22 | Benefits Received from Various Schemes |
| 16.12 | Purposes of Taking Loan | | |
| 16.13 | Preferred Banking Services | | |

Source: JICA Study Team (2017)

Attachment II.2.7.1 (2) Data Tables

1. Households Interviewed during Livelihood Survey

| District | Division | JFM | | | Non JFM | | | Total | | | % of FHH to Division Total |
|---|------------|------------|-----------|------------|------------|-----------|------------|------------|-----------|------------|----------------------------|
| | | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total | |
| Bilaspur | Bilaspur | 33 | 7 | 40 | 18 | 2 | 20 | 51 | 9 | 60 | 15.0 |
| Chamba | Bharmour | 11 | | 11 | 8 | 1 | 9 | 19 | 1 | 20 | 5.0 |
| | Chamba WL | | | 0 | 15 | 5 | 20 | 15 | 5 | 20 | 25.0 |
| | Pangi | 6 | 4 | 10 | 7 | 3 | 10 | 13 | 7 | 20 | 35.0 |
| Kinnaur | Kinnaur | 17 | 2 | 19 | 20 | 1 | 21 | 37 | 3 | 40 | 7.5 |
| | Sarahan WL | | | 0 | 19 | 1 | 20 | 19 | 1 | 20 | 5.0 |
| Kullu | Kullu | 10 | | 10 | 7 | 3 | 10 | 17 | 3 | 20 | 15.0 |
| | Kullu WL | | | 0 | 17 | 3 | 20 | 17 | 3 | 20 | 15.0 |
| Lahaul & Spiti | Spiti(W/L) | | | 0 | 17 | 3 | 20 | 17 | 3 | 20 | 15.0 |
| Mandi | Karsog | 10 | | 10 | 10 | | 10 | 20 | 0 | 20 | 0.0 |
| | Mandi | 10 | | 10 | 7 | 3 | 10 | 17 | 3 | 20 | 15.0 |
| Shimla | Kotgarh | 8 | 2 | 10 | 8 | 2 | 10 | 16 | 4 | 20 | 20.0 |
| | Rampur | 7 | 3 | 10 | 8 | 3 | 11 | 15 | 6 | 21 | 28.6 |
| | Theog | 7 | 4 | 11 | 5 | 4 | 9 | 12 | 8 | 20 | 40.0 |
| Total of Territorial/ WL divisions | | 119 | 22 | 141 | 166 | 34 | 200 | 285 | 56 | 341 | 16.4 |
| Kangra | Bajjnath | | | 0 | 3 | | 3 | 3 | 0 | 3 | 0.0 |
| Kullu | Kullu | | | 0 | 11 | | 11 | 11 | 0 | 11 | 0.0 |
| Mandi | Mandi | | | 0 | 3 | | 3 | 3 | 0 | 3 | 0.0 |
| Kangra | Palampur | | | 0 | 1 | | 1 | 1 | 0 | 1 | 0.0 |
| Kullu | Parvati | | | 0 | 10 | | 10 | 10 | 0 | 10 | 0.0 |
| Kinnaur | Kinnaur | | | 0 | 20 | 1 | 21 | 20 | 1 | 21 | 4.8 |
| Shimla | Theog | | | 0 | 1 | | 1 | 1 | 0 | 1 | 0.0 |
| Solan | Nalagarh | | | 0 | 5 | | 5 | 5 | 0 | 5 | 0.0 |
| Shimla | Kotgarh | | | 0 | 2 | | 2 | 2 | 0 | 2 | 0.0 |
| Solan | Baddi | | | 0 | 2 | | 2 | 2 | 0 | 2 | 0.0 |
| Total of Graziers/ Grassland Users | | 0 | 0 | 0 | 58 | 1 | 59 | 58 | 1 | 59 | 1.7 |
| Grand Total | | 119 | 22 | 141 | 224 | 35 | 259 | 343 | 57 | 400 | 14.3 |

Source: Livelihood Survey, JICA Study Team (2017)

2. Socio Economic Background
2.1 Economic Status by Ration Card (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | Non JFM | | | | Total | | | | | | | | | |
|---|-------------|-------------------------------|-----------|-----------|-----------|----------|-----------|-----------|-----------|----------|------------|-----------|-----------|----------|-----------|-----------|-----------|----------|-----------|-----------|---------------|-------------|------------|-----------|---------------|-------------|----------|---|
| | | | MHH | | | | FHH | | | | MHH | | | | FHH | | | | JFM | | | | Non JFM | | | | | |
| | | | APL | BPL | Antyodaya | No Card | APL | BPL | Antyodaya | No Card | APL | BPL | Antyodaya | No Card | APL | BPL | Antyodaya | No Card | APL (a) | BPL (b) | Antyodaya (c) | No Card (d) | APL (e) | BPL (f) | Antyodaya (g) | No Card (h) | | |
| Bilaspur | Bilaspur | 60 | 17 | 12 | 4 | | | | 4 | 3 | | | 12 | 5 | 1 | | | | | | 21 | 15 | 4 | 0 | 12 | 6 | 1 | 0 |
| | Bharmour | 20 | 6 | 4 | 1 | | | | | | | | 5 | 3 | | | | | | | 6 | 4 | 1 | 0 | 6 | 3 | 0 | 0 |
| | Chamba WL | 20 | | | | | | | | | | | 10 | 4 | 1 | | | | | | 0 | 0 | 0 | 0 | 11 | 8 | 1 | 0 |
| Chamba | Pangi | 20 | 2 | 4 | | | | | | 4 | | | 3 | 3 | | | | | | | 2 | 8 | 0 | 0 | 3 | 6 | 0 | 0 |
| | Kinnaur | 40 | 12 | 4 | 1 | | | | 1 | 1 | | | 14 | 6 | | | | | | | 13 | 5 | 1 | 0 | 15 | 6 | 0 | 0 |
| | Sarahan WL | 20 | | | | | | | | | | | 11 | 4 | 2 | | | | | | 1 | 0 | 0 | 0 | 11 | 5 | 2 | 1 |
| | Kullu | 20 | 5 | 5 | | | | | | | | | 5 | 2 | | | | | | | 5 | 5 | 0 | 0 | 7 | 3 | 0 | 0 |
| | Kullu WL | 20 | | | | | | | | | | | 14 | 2 | 1 | | | | | | 0 | 0 | 0 | 0 | 16 | 2 | 1 | 0 |
| Lahaul & Spiti | Spiti (W/L) | 20 | | | | | | | | | | | 10 | 4 | 3 | | | | | | 0 | 0 | 0 | 0 | 12 | 5 | 3 | 0 |
| | Karsog | 20 | 6 | 2 | | | | | 1 | | | | 8 | 2 | | | | | | | 6 | 2 | 0 | 1 | 8 | 2 | 0 | 0 |
| Mandi | Mandi | 20 | 3 | 6 | 1 | | | | | | | | 4 | 2 | 1 | | | | | | 3 | 6 | 1 | 0 | 6 | 3 | 1 | 0 |
| | Kotgarh | 20 | 4 | 4 | | | | | 1 | 1 | | | 6 | | 2 | | | | | | 5 | 5 | 0 | 0 | 8 | 0 | 2 | 0 |
| | Rampur | 21 | 3 | 3 | 1 | | | | 1 | 2 | | | 4 | 3 | 1 | | | | | | 4 | 5 | 1 | 0 | 5 | 4 | 2 | 0 |
| Shimla | Theog | 20 | 5 | 1 | 1 | | | | | 3 | 1 | | | 4 | | | | | | | 8 | 2 | 1 | 0 | 4 | 1 | 2 | 2 |
| Total of Territorial | | 341 | 63 | 45 | 9 | 1 | 10 | 12 | 0 | 0 | 110 | 40 | 12 | 1 | 14 | 14 | 3 | 2 | 73 | 57 | 9 | 1 | 124 | 54 | 15 | 3 | | |
| Kangra | Bainath | 3 | | | | | | | | | | | 3 | | | | | | | | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | | | | | | | | | | | 8 | 2 | | | | | | | 0 | 0 | 0 | 0 | 8 | 2 | 0 | 1 |
| Mandi | Mandi | 3 | | | | | | | | | | | 3 | | | | | | | | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | 1 | | | | | | | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | | | | | | | | | | | 3 | 2 | | | | | | | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 4 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | 8 | 9 | | | | | | | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Shimla | Theog | 1 | | | | | | | | | | | 1 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | 1 | 3 | | | | | | | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | 1 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | 1 | 1 | | | | | | | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 22 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 22 | 0 | 5 | |
| Grand Total | | 400 | 63 | 45 | 9 | 1 | 10 | 12 | 0 | 0 | 135 | 62 | 12 | 6 | 15 | 14 | 3 | 2 | 73 | 57 | 9 | 1 | 150 | 76 | 15 | 8 | | |

Source: Livelihood Survey, JICA Study Team (2017)

2.1 Economic Status by Ration Card (2)

| District | Division | No of Respondents Interviewed | Division Total | | | | % to Division Total | | | | | | | | | | | | | |
|---|-------------|-------------------------------|----------------|------------|-----------|-------------|---------------------|-------------|--------------|--------------|-------------|--------------|--------------|-------------|-------------|------------|------------|--------------|-------|-------|
| | | | APL | BPL | Antyodaya | No Card (l) | Total (m) | APL | | | BPL | | | Antyodaya | | | No Card | | | Total |
| | | | | | | | | JFM | Non JFM | Total | JFM | Non JFM | Total | JFM | Non JFM | Total | JFM | Non JFM | Total | |
| Bilaspur | Bilaspur | 60 | 33 | 21 | 5 | 0 | 59 | 63.6 | 36.4 | 100.0 | 71.4 | 28.6 | 100.0 | 55.9 | 35.6 | 8.5 | 0.0 | 100.0 | | |
| | Bharmour | 20 | 12 | 7 | 1 | 0 | 20 | 50.0 | 50.0 | 100.0 | 57.1 | 42.9 | 100.0 | 60.0 | 35.0 | 5.0 | 0.0 | 100.0 | | |
| | Chamba WL | 20 | 11 | 8 | 1 | 0 | 20 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 55.0 | 40.0 | 5.0 | 0.0 | 100.0 | | |
| Chamba | Pangi | 20 | 5 | 14 | 0 | 0 | 19 | 40.0 | 60.0 | 100.0 | 57.1 | 42.9 | 100.0 | 26.3 | 73.7 | 0.0 | 0.0 | 100.0 | | |
| | Kinnaur | 40 | 28 | 11 | 1 | 0 | 40 | 46.4 | 53.6 | 100.0 | 45.5 | 54.5 | 100.0 | 70.0 | 27.5 | 2.5 | 0.0 | 100.0 | | |
| | Sarahan WL | 20 | 11 | 5 | 2 | 1 | 19 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 57.9 | 26.3 | 10.5 | 5.3 | 100.0 | | |
| | Kullu | 20 | 12 | 8 | 0 | 0 | 20 | 41.7 | 58.3 | 100.0 | 62.5 | 37.5 | 100.0 | 60.0 | 40.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Kullu WL | 20 | 16 | 2 | 1 | 0 | 19 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 84.2 | 10.5 | 5.3 | 0.0 | 100.0 | | |
| Lahaul & Spiti | Spiti (W/L) | 20 | 12 | 5 | 3 | 0 | 20 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 60.0 | 25.0 | 15.0 | 0.0 | 100.0 | | |
| | Karsog | 20 | 14 | 4 | 0 | 1 | 19 | 42.9 | 57.1 | 100.0 | 50.0 | 50.0 | 100.0 | 73.7 | 21.1 | 0.0 | 5.3 | 100.0 | | |
| Mandi | Mandi | 20 | 9 | 9 | 2 | 0 | 20 | 33.3 | 66.7 | 100.0 | 66.7 | 33.3 | 100.0 | 45.0 | 45.0 | 10.0 | 0.0 | 100.0 | | |
| | Kotgarh | 20 | 13 | 5 | 2 | 0 | 20 | 38.5 | 61.5 | 100.0 | 100.0 | 0.0 | 100.0 | 65.0 | 25.0 | 10.0 | 0.0 | 100.0 | | |
| | Rampur | 21 | 9 | 9 | 3 | 0 | 21 | 44.4 | 55.6 | 100.0 | 55.6 | 44.4 | 100.0 | 42.9 | 42.9 | 14.3 | 0.0 | 100.0 | | |
| Shimla | Theog | 20 | 12 | 3 | 3 | 2 | 20 | 66.7 | 33.3 | 100.0 | 66.7 | 33.3 | 100.0 | 60.0 | 15.0 | 15.0 | 10.0 | 100.0 | | |
| Total of Territorial | | 341 | 197 | 111 | 24 | 4 | 336 | 37.1 | 62.9 | 100.0 | 51.4 | 48.6 | 100.0 | 58.6 | 33.0 | 7.1 | 1.2 | 100.0 | | |
| Kangra | Bainath | 3 | 3 | 0 | 0 | 0 | 3 | 0.0 | 100.0 | 100.0 | - | - | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | 8 | 2 | 0 | 1 | 11 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 72.7 | 18.2 | 0.0 | 9.1 | 100.0 | | |
| Mandi | Mandi | 3 | 0 | 3 | 0 | 0 | 3 | - | - | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | | |
| Kangra | Palampur | 1 | 1 | 0 | 0 | 0 | 1 | 0.0 | 100.0 | 100.0 | - | - | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Parvati | 10 | 3 | 2 | 0 | 4 | 9 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 33.3 | 22.2 | 0.0 | 44.4 | 100.0 | | |
| Kinnaur | Kinnaur | 21 | 9 | 9 | 0 | 0 | 18 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Theog | 1 | 0 | 1 | 0 | 0 | 1 | - | - | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | | |
| Solan | Nalagarh | 5 | 1 | 3 | 0 | 0 | 4 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 25.0 | 75.0 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Kotgarh | 2 | 0 | 1 | 0 | 0 | 1 | - | - | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | | |
| Solan | Baddi | 2 | 1 | 1 | 0 | 0 | 2 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 | | |
| Total of Graziers/ Grassland Users | | 59 | 26 | 22 | 0 | 5 | 53 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 49.1 | 41.5 | 0.0 | 9.4 | 100.0 | | |
| Grand Total | | 400 | 223 | 133 | 24 | 9 | 389 | 32.7 | 67.3 | 100.0 | 42.9 | 57.1 | 100.0 | 57.3 | 34.2 | 6.2 | 2.3 | 100.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

2.2 MGNREGA Job Card Holders

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Non JFM | | | | Total | | | | % of (b) to (a) | | | |
|---|-------------|-----------------------------------|------------|------------|-----------|------------|------------|------------|-----------|------------|------------|------------|------------|------------|-----------------|----------------|------------|-------------|
| | | | MHH | | FHH | | MHH | | FHH | | JFM | | Non JFM | | | Division Total | | |
| | | | Have | Don't Have | Have | Don't Have | Have | Don't Have | Have | Don't Have | Have | Don't Have | Have | Don't Have | | Have | Don't Have | |
| Bilaspur | Bilaspur | 60 | 25 | 8 | 5 | 2 | 15 | 3 | 2 | 30 | 10 | 17 | 3 | 47 | 13 | 60 | 78.3 | |
| | Bharmour | 20 | 8 | 3 | | | 6 | 2 | 1 | 8 | 3 | 6 | 3 | 14 | 6 | 20 | 70.0 | |
| | Chamba WL | 20 | 5 | 4 | 1 | | 4 | 2 | 1 | 6 | 4 | 5 | 2 | 11 | 6 | 17 | 55.0 | |
| Chamba | Panga | 20 | 6 | | 4 | | 7 | | 3 | 10 | 0 | 10 | 0 | 20 | 0 | 20 | 100.0 | |
| | Kinnaur | 40 | 16 | 1 | 1 | 1 | 18 | 2 | | 17 | 2 | 18 | 3 | 35 | 5 | 40 | 87.5 | |
| | Sarahan WL | 20 | 6 | | | | 12 | 1 | 1 | 6 | 0 | 13 | 1 | 19 | 1 | 20 | 95.0 | |
| | Kullu | 20 | 10 | | | | 5 | 1 | 2 | 10 | 0 | 7 | 2 | 17 | 2 | 19 | 85.0 | |
| | Kullu WL | 20 | 8 | 1 | 2 | | 6 | 2 | 1 | 10 | 1 | 7 | 3 | 17 | 4 | 21 | 85.0 | |
| Lahaul & Spiti | Spiti (W/L) | 20 | 6 | 2 | 1 | | 8 | | 4 | 7 | 2 | 12 | 0 | 19 | 2 | 21 | 95.0 | |
| | Karsog | 20 | 10 | | | | 10 | | | 10 | 0 | 10 | 0 | 20 | 0 | 20 | 100.0 | |
| Mandi | Mandi | 20 | 8 | 2 | | | 7 | | 3 | 8 | 2 | 10 | 0 | 18 | 2 | 20 | 90.0 | |
| | Kotgarh | 20 | 5 | 3 | 1 | 1 | 2 | 6 | 2 | 6 | 4 | 4 | 6 | 10 | 10 | 20 | 50.0 | |
| | Rampur | 21 | 7 | | 2 | 1 | 8 | | 3 | 9 | 1 | 11 | 0 | 20 | 1 | 21 | 95.2 | |
| Shimla | Theog | 20 | 5 | 2 | 4 | | 5 | | 1 | 3 | 9 | 2 | 6 | 3 | 15 | 5 | 20 | 75.0 |
| Total of Territorial | | 341 | 125 | 26 | 21 | 5 | 113 | 19 | 23 | 7 | 146 | 31 | 136 | 26 | 282 | 57 | 339 | 82.7 |
| Kangra | Bainath | 3 | | | | | 1 | 1 | | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 33.3 | |
| Kullu | Kullu | 11 | | | | | 11 | | | 0 | 0 | 11 | 0 | 11 | 0 | 11 | 100.0 | |
| Mandi | Mandi | 3 | | | | | 3 | | | 0 | 0 | 3 | 0 | 3 | 0 | 3 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | 1 | | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0.0 | |
| Kullu | Parvati | 10 | | | | | 5 | 5 | | 0 | 0 | 5 | 5 | 5 | 5 | 10 | 50.0 | |
| Kinnaur | Kinnaur | 21 | | | | | 12 | 4 | 1 | 0 | 0 | 13 | 4 | 13 | 4 | 17 | 61.9 | |
| Shimla | Theog | 1 | | | | | | 1 | | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0.0 | |
| Solan | Nalagarh | 5 | | | | | | 5 | | 0 | 0 | 0 | 5 | 0 | 5 | 5 | 0.0 | |
| Shimla | Kotgarh | 2 | | | | | | 1 | | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0.0 | |
| Solan | Baddi | 2 | | | | | | 2 | | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 0.0 | |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 32 | 20 | 1 | 0 | 0 | 0 | 33 | 20 | 33 | 20 | 53 | 55.9 |
| Grand Total | | 400 | 125 | 26 | 21 | 5 | 145 | 39 | 24 | 7 | 146 | 31 | 169 | 46 | 315 | 77 | 392 | 78.8 |

Source: Livelihood Survey, JICA Study Team (2017)

2.3. Social Groups (1)

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | | | | | | | | | | | | | | | | |
|---|-------------|-------------------------------|-----------|-----------|----------|-----------|----------|----------|----------|-----------|-----------|-----------|-----------|-------------|----------|-----------|----------|-------------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|----|---|----|
| | | | MHH | | FHH | | MHH | | FHH | | JFM | | Non JFM | | General | | | | | | | | | | | | | | |
| | | | SC | ST | OBC | General | SC | ST | OBC | General | SC (a) | ST (b) | OBC (c) | General (d) | SC (e) | ST (f) | OBC (g) | General (h) | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 12 | 3 | | 18 | | 1 | 1 | 5 | 5 | | | 13 | 1 | | 1 | 13 | 3 | 1 | 23 | 6 | 0 | 0 | 14 | | | | |
| | Bharmour | 20 | 1 | 10 | | | | | | | | | | 7 | | 1 | | 1 | 10 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | | | |
| Chamba | Panga | 20 | | 3 | | 3 | | | | 1 | | | | 5 | | 2 | | 3 | | | 0 | 6 | 0 | 4 | 8 | 0 | 2 | | |
| | Kinnaur | 40 | 1 | 13 | | 2 | 1 | 1 | 1 | | | | | 6 | 12 | 2 | | 1 | | | 2 | 14 | 2 | 1 | 7 | 12 | 2 | 0 | |
| | Sarahan WL | 20 | | | | | | | | | | | | 3 | 15 | 1 | | | | | 0 | 0 | 0 | 0 | 3 | 16 | 1 | 0 | |
| | Kullu | 20 | | | | 10 | | | | | | | | | | | | | | | 2 | 0 | 0 | 0 | 10 | 0 | 0 | 5 | 4 |
| | Kullu WL | 20 | | | | | | | | | | | | 8 | | | | | | | 2 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 10 |
| Lahaul & Spiti | Spiti (W/L) | 20 | | | | | | | | | | | | 17 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 |
| | Karsog | 20 | 5 | | | 5 | | | | | | | | 3 | | 5 | 2 | 1 | | | | 5 | 0 | 0 | 5 | 3 | 0 | 5 | 2 |
| Mandi | Mandi | 20 | 1 | 3 | | 6 | | | | | | | | 4 | 1 | | 2 | 2 | | | 1 | 1 | 3 | 0 | 6 | 6 | 1 | 0 | 3 |
| | Kotgarh | 20 | 6 | | | 2 | 1 | | | 1 | 4 | | | 4 | | | | | | | 2 | 7 | 0 | 0 | 3 | 4 | 0 | 0 | 6 |
| | Rampur | 21 | | | | 7 | | | | 3 | 1 | | | 7 | 1 | | | | | | 2 | 0 | 0 | 0 | 10 | 2 | 0 | 0 | 9 |
| Shimla | Theog | 20 | 3 | | | 4 | 2 | | | 2 | 1 | | | 5 | 1 | | | | | 1 | 2 | 5 | 0 | 0 | 6 | 1 | 0 | 1 | 7 |
| Total of Territorial | | 341 | 29 | 32 | 2 | 56 | 5 | 4 | 1 | 12 | 34 | 57 | 12 | 46 | 7 | 12 | 2 | 13 | 34 | 36 | 3 | 68 | 41 | 69 | 14 | 59 | | | |
| Kangra | Bainath | 3 | | | | | | | | | | | | 3 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Kullu | Kullu | 11 | | | | | | | | 1 | 4 | 1 | 5 | | | | | | | | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 5 | |
| Mandi | Mandi | 3 | | | | | | | | 2 | | | | 1 | | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | 1 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Kullu | Parvati | 10 | | | | | | | | | | | | 9 | 1 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 1 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | 3 | 16 | | | | | 1 | | | | | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 0 | 0 |
| Shimla | Theog | 1 | | | | | | | | | | | | 1 | | | | | | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| Solan | Nalagarh | 5 | | | | | | | | 2 | 3 | | | | | | | | | | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | 2 | | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | |
| Solan | Baddi | 2 | | | | | | | | | | | | 2 | | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 28 | 13 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 29 | 13 | 8 | | | |
| Grand Total | | 400 | 29 | 32 | 2 | 56 | 5 | 4 | 1 | 12 | 42 | 85 | 25 | 54 | 7 | 13 | 2 | 13 | 34 | 36 | 3 | 68 | 49 | 98 | 27 | 67 | | | |

Source: Livelihood Survey, JICA Study Team (2017)

2.4 Religion (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | | | | Total (p) | |
|---|-------------|-------------------------------|---------------|------------|------------|--------------|-----------------------------|---------------|------------|------------|--------------|-----------------------------|---------------|------------|------------|--------------|-----------|-----------------------------|
| | | | JFM | | | | | Non JFM | | | | | Division | | | | | |
| | | | Christian (a) | Muslim (b) | Hindu (c) | Buddhist (d) | Both Hindu and Buddhism (e) | Christian (f) | Muslim (g) | Hindu (h) | Buddhist (i) | Both Hindu and Buddhism (j) | Christian (k) | Muslim (l) | Hindu (m) | Buddhist (n) | | Both Hindu and Buddhism (o) |
| Bilaspur | Bilaspur | 60 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 65 | 0 | 0 | 65 |
| | Bharmour | 20 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 |
| | Chamba WL | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 17 |
| Chamba | Pangi | 20 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 |
| | Kinnaur | 40 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 41 |
| | Sarahan WL | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 |
| | Kullu | 20 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 17 |
| | Kullu WL | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 17 |
| Lahaul & Spiti | Spiti (W/L) | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 0 | 0 | 0 | 3 | 16 | 0 | 19 |
| | Karsog | 20 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 |
| Mandi | Mandi | 20 | 0 | 3 | 6 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 4 | 12 | 0 | 0 | 16 |
| | Kotgarh | 20 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 |
| | Rampur | 21 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 |
| Shimla | Theog | 20 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 |
| Total of Territorial | | 341 | 0 | 3 | 137 | 0 | 0 | 0 | 1 | 175 | 16 | 0 | 0 | 4 | 312 | 16 | 0 | 332 |
| Kangra | Bainath | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| | Kullu | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 0 | 0 | 3 | 8 | 0 | 0 | 11 |
| Mandi | Mandi | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| | Kullu | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 |
| | Kinnaur | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 4 | 6 | 0 | 0 | 10 | 4 | 6 | 20 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Solan | Nalagarh | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| Total of Graziers/ Grassland Users | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 35 | 4 | 6 | 0 | 13 | 35 | 4 | 6 | 58 |
| Grand Total | | 400 | 0 | 3 | 137 | 0 | 0 | 0 | 14 | 210 | 20 | 6 | 0 | 17 | 347 | 20 | 6 | 390 |

Source: Livelihood Survey, JICA Study Team (2017)

2.4 Religion (3)

| District | Division | No of Respondents Interviewed | % to Division Total | | | | | | | | | | | | Total | | | | |
|---|-------------|-------------------------------|---------------------|--------------------|----------------|--------------------|--------------|------------------|--------------|------------------|----------------|--------------------|------------------|---------------|-------------|--------------|-----------------|----------------------------|--------------|
| | | | Christian | | Muslim | | Hindu | | Buddhist | | Both Hinduism | | Division Total | | | | | | |
| | | | JFM (=a/ (f/k) | Non JFM (=b/ (f/k) | JFM (=g/ (f/l) | Non JFM (=h/ (f/l) | JFM (=c/ (m) | Non JFM (=d/ (m) | JFM (=e/ (n) | Non JFM (=o/ (n) | JFM (=i/ (j/o) | Non JFM (=k/ (j/o) | Christian (=m/p) | Muslim (=l/p) | | Hindu (=n/p) | Buddhist (=o/p) | Hinduism and Buddhism (=p) | |
| Bilaspur | Bilaspur | 60 | - | - | - | - | 61.5 | 38.5 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Bharmour | 20 | - | - | - | - | 57.9 | 42.1 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | - | - | - | - | 0.0 | 100.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | - | - | - | - | 47.6 | 52.4 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | - | - | - | - | 46.3 | 53.7 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Sarahan WL | 20 | - | - | - | - | 0.0 | 100.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | 20 | - | - | - | - | 58.8 | 41.2 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kullu WL | 20 | - | - | - | - | 0.0 | 100.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti (W/L) | 20 | - | - | - | - | 0.0 | 100.0 | 0.0 | 100.0 | - | - | - | 0.0 | 0.0 | 15.8 | 84.2 | 0.0 | 100.0 |
| | Karsog | 20 | - | - | - | - | 50.0 | 50.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | - | - | 75.0 | 25.0 | 50.0 | 50.0 | - | - | - | - | - | 0.0 | 25.0 | 75.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | - | - | - | - | 50.0 | 50.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | 21 | - | - | - | - | 47.6 | 52.4 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | - | - | - | - | 55.0 | 45.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | - | - | 75.0 | 25.0 | 43.9 | 56.1 | 0.0 | 100.0 | - | - | - | 0.0 | 1.2 | 94.0 | 4.8 | 0.0 | 100.0 |
| Kangra | Bainath | 3 | - | - | - | - | 0.0 | 100.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | 11 | - | - | 0.0 | 100.0 | 0.0 | 100.0 | - | - | - | - | - | 0.0 | 27.3 | 72.7 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | - | - | - | - | 0.0 | 100.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | - | - | - | - | 0.0 | 100.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | 10 | - | - | - | - | 0.0 | 100.0 | - | - | - | - | - | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 21 | - | - | - | - | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 | 100.0 | - | 0.0 | 0.0 | 50.0 | 20.0 | 30.0 | 100.0 |
| Shimla | Theog | 1 | - | - | 0.0 | 100.0 | - | - | - | - | - | - | - | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 5 | - | - | 0.0 | 100.0 | - | - | - | - | - | - | - | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | - | - | 0.0 | 100.0 | - | - | - | - | - | - | - | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Baddi | 2 | - | - | 0.0 | 100.0 | - | - | - | - | - | - | - | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland Users | | 59 | - | - | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 | 22.4 | 60.3 | 6.9 | 10.3 | 100.0 | |
| Grand Total | | 400 | - | - | 17.6 | 82.4 | 39.5 | 60.5 | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 | 4.4 | 89.0 | 5.1 | 1.5 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

3. Demography

3.1 Population (1)

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Division | | | F/M Ratio | Average Family Size |
|-------------------------------------|------------|-----------------------------------|------------|------------|------------|------------|------------|--------------|--------------|--------------|--------------|------------|---------------------|
| | | | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | | |
| | | | Male | Female | Total | Male | Female | Total | Male | Female | Total | | |
| Bilaspur | Bilaspur | 60 | 110 | 101 | 211 | 61 | 56 | 117 | 171 | 157 | 328 | 0.9 | 5.5 |
| | Bharmour | 20 | 40 | 25 | 65 | 21 | 19 | 40 | 61 | 44 | 105 | 0.7 | 5.3 |
| | Chamba WL | 20 | | | 0 | 52 | 45 | 97 | 52 | 45 | 97 | 0.9 | 4.9 |
| Chamba | Pangi | 20 | 19 | 29 | 48 | 26 | 29 | 55 | 45 | 58 | 103 | 1.3 | 5.2 |
| | Kinnaur | 40 | 59 | 49 | 108 | 49 | 53 | 102 | 108 | 102 | 210 | 0.9 | 5.3 |
| Kinnaur | Sarahan WL | 20 | | | 0 | 59 | 58 | 117 | 59 | 58 | 117 | 1.0 | 5.9 |
| | Kullu | 20 | 29 | 22 | 51 | 16 | 23 | 39 | 45 | 45 | 90 | 1.0 | 4.5 |
| Kullu | Kullu WL | 20 | | | 0 | 48 | 49 | 97 | 48 | 49 | 97 | 1.0 | 4.9 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | 59 | 60 | 119 | 59 | 60 | 119 | 1.0 | 6.0 |
| | Karsog | 20 | 30 | 23 | 53 | 26 | 19 | 45 | 56 | 42 | 98 | 0.8 | 4.9 |
| Mandi | Mandi | 20 | 29 | 24 | 53 | 26 | 34 | 60 | 55 | 58 | 113 | 1.1 | 5.7 |
| | Kotgarh | 20 | 20 | 14 | 34 | 28 | 23 | 51 | 48 | 37 | 85 | 0.8 | 4.3 |
| | Rampur | 21 | 26 | 23 | 49 | 29 | 22 | 51 | 55 | 45 | 100 | 0.8 | 4.8 |
| Shimla | Theog | 20 | 34 | 32 | 66 | 19 | 27 | 46 | 53 | 59 | 112 | 1.1 | 5.6 |
| Total of Territorial | | 341 | 396 | 342 | 738 | 519 | 517 | 1036 | 915 | 859 | 1,774 | 0.9 | 5.2 |
| Kangra | Bajinath | 3 | | | | 9 | 9 | 18 | 9 | 9 | 18 | 1.0 | 6.0 |
| Kullu | Kullu | 11 | | | | 31 | 31 | 62 | 31 | 31 | 62 | 1.0 | 5.6 |
| Mandi | Mandi | 3 | | | | 11 | 3 | 14 | 11 | 3 | 14 | 0.3 | 4.7 |
| Kangra | Palampur | 1 | | | | 2 | 1 | 3 | 2 | 1 | 3 | 0.5 | 3.0 |
| | Parvati | 10 | | | | 32 | 37 | 69 | 32 | 37 | 69 | 1.2 | 6.9 |
| Kinnaur | Kinnaur | 21 | | | | 64 | 60 | 124 | 64 | 60 | 124 | 0.9 | 5.9 |
| Shimla | Theog | 1 | | | | 3 | 2 | 5 | 3 | 2 | 5 | 0.7 | 5.0 |
| Solan | Nalagarh | 5 | | | | 23 | 19 | 42 | 23 | 19 | 42 | 0.8 | 8.4 |
| Shimla | Kotgarh | 2 | | | | 6 | 2 | 8 | 6 | 2 | 8 | 0.3 | 4.0 |
| Solan | Baddi | 2 | | | | 6 | 5 | 11 | 6 | 5 | 11 | 0.8 | 5.5 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 187 | 169 | 356 | 187 | 169 | 356 | 0.9 | 6.0 |
| Grand Total | | 400 | 396 | 342 | 738 | 706 | 686 | 1,392 | 1,102 | 1,028 | 2,130 | 0.9 | 5.3 |

Source: Livelihood Survey, JICA Study Team (2017)

3.1 Population (2) by HH Category

| District | Division | No of Respondents Interviewed (a) | Population | | |
|-------------------------------------|------------|-----------------------------------|--------------|------------|--------------|
| | | | 1 | 2 | Total |
| | | | MHH | FHH | Total |
| Bilaspur | Bilaspur | 60 | 279 | 49 | 328 |
| | Bharmour | 20 | 103 | 2 | 105 |
| | Chamba W | 20 | 72 | 25 | 97 |
| Chamba | Pangi | 20 | 66 | 37 | 103 |
| | Kinnaur | 40 | 198 | 12 | 210 |
| Kinnaur | Sarahan W | 20 | 114 | 3 | 117 |
| | Kullu | 20 | 78 | 12 | 90 |
| Kullu | Kullu WL | 20 | 81 | 16 | 97 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 105 | 14 | 119 |
| | Karsog | 20 | 98 | | 98 |
| Mandi | Mandi | 20 | 93 | 20 | 113 |
| | Kotgarh | 20 | 69 | 16 | 85 |
| | Rampur | 21 | 73 | 27 | 100 |
| Shimla | Theog | 20 | 68 | 44 | 112 |
| Total of Territorial | | 341 | 1,497 | 277 | 1,774 |
| Kangra | Bajinath | 3 | 18 | | 18 |
| Kullu | Kullu | 11 | 62 | | 62 |
| Mandi | Mandi | 3 | 14 | | 14 |
| Kangra | Palampur | 1 | 3 | | 3 |
| | Parvati | 10 | 69 | | 69 |
| Kinnaur | Kinnaur | 21 | 120 | 4 | 124 |
| Shimla | Theog | 1 | 5 | | 5 |
| Solan | Nalagarh | 5 | 42 | | 42 |
| Shimla | Kotgarh | 2 | 8 | | 8 |
| Solan | Baddi | 2 | 11 | | 11 |
| Total of Graziers/ Grassland | | 59 | 352 | 4 | 356 |
| Grand Total | | 400 | 1,849 | 281 | 2,130 |

3.2 Education (Age above 6) (1)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | | | | | | | | | | | | | | | | | | Total of JFM |
|-------------------------------------|------------|-----------------------------------|--------------------|------------|-----------------------------|----------------------------------|---------------------------|---------------------------|-----------|---------------|--------------|-----------|-----------------------------|----------------------------------|---------------------------|---------------------------|-----------|---------------|-----------|-----------|-----------|----------|------------|------------|--|--------------|
| | | | Above 6 Population | | | Male | | | | | | | | Female | | | | | | | | Total | | | | |
| | | | Male | Female | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | | | |
| (a) | (b) | (c) | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermed late (12th pass) | Graduate | Post Graduate | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermed late (12th pass) | Graduate | Post Graduate | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 156 | 146 | 302 | 4 | 22 | 11 | 10 | 20 | 15 | 8 | 1 | 91 | 19 | 23 | 9 | 6 | 9 | 11 | 7 | 2 | 86 | 177 | | |
| | Bharmour | 20 | 55 | 38 | 93 | 1 | 14 | 3 | 1 | 4 | 9 | 2 | 1 | 35 | 6 | 6 | 2 | | 3 | 4 | 1 | | 22 | 57 | | |
| | Chamba WL | 20 | 42 | 38 | 80 | | | | | | | | | 0 | | | | | | | | | 0 | 0 | | |
| Chamba | Pangi | 20 | 41 | 52 | 93 | 2 | 10 | 2 | 2 | 2 | 2 | 2 | 18 | 6 | 6 | 6 | 3 | 5 | | | | 26 | 44 | | | |
| | Kinnaur | 40 | 103 | 95 | 198 | 6 | 11 | 14 | 3 | 9 | 9 | 1 | 2 | 55 | 9 | 8 | 6 | 2 | 8 | 5 | 1 | 1 | 40 | 95 | | |
| Kinnaur | Sarahan WL | 20 | 55 | 55 | 110 | | | | | | | | | 0 | | | | | | | | | 0 | 0 | | |
| | Kullu | 20 | 39 | 44 | 83 | 3 | 7 | 5 | | 4 | 1 | 2 | | 22 | 3 | 8 | 3 | 1 | 3 | 1 | | | 19 | 41 | | |
| Kullu | Kullu WL | 20 | 43 | 46 | 89 | | | | | | | | | 0 | | | | | | | | | 0 | 0 | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 56 | 55 | 111 | | | | | | | | | 0 | | | | | | | | | 0 | 0 | | |
| | Karsog | 20 | 50 | 42 | 92 | | 9 | 1 | 1 | 8 | 5 | 3 | | 27 | 4 | 6 | 1 | | 3 | 4 | 2 | | 20 | 47 | | |
| Mandi | Mandi | 20 | 55 | 105 | 160 | 3 | 11 | 3 | 5 | 2 | | 2 | | 26 | 7 | 8 | 1 | 1 | 2 | 2 | | | 21 | 47 | | |
| | Kotgarh | 20 | 46 | 35 | 81 | 4 | 4 | 5 | | 3 | 2 | 1 | | 19 | 5 | 5 | 1 | | 1 | 1 | | | 13 | 32 | | |
| | Rampur | 21 | 47 | 43 | 90 | 1 | 6 | 2 | 2 | 2 | 6 | 1 | | 20 | 3 | 5 | 3 | 1 | 2 | 5 | 2 | | 21 | 41 | | |
| Shimla | Theog | 20 | 50 | 57 | 107 | | 7 | 4 | 3 | 4 | 4 | 5 | 4 | 31 | 4 | 7 | 1 | | 6 | 5 | 3 | 2 | 28 | 59 | | |
| Total of Territorial | | 341 | 833 | 801 | 1634 | 24 | 101 | 50 | 25 | 58 | 53 | 25 | 8 | 344 | 66 | 82 | 33 | 11 | 40 | 43 | 16 | 5 | 296 | 640 | | |
| Kangra | Bajinath | 3 | 7 | 8 | 15 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Kullu | Kullu | 11 | 27 | 30 | 57 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Mandi | Mandi | 3 | 11 | 3 | 14 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Kangra | Palampur | 1 | 2 | 1 | 3 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Kullu | Parvati | 10 | 28 | 35 | 63 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Kinnaur | Kinnaur | 21 | 59 | 57 | 116 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Shimla | Theog | 1 | 3 | 2 | 5 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Solan | Nalagarh | 5 | 21 | 17 | 38 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Shimla | Kotgarh | 2 | 6 | 2 | 8 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Solan | Baddi | 2 | 5 | 5 | 10 | | | | | | | | | | | | | | | | | | 0 | 0 | | |
| Total of Graziers/ Grassland | | 59 | 169 | 160 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Grand Total | | 400 | 1002 | 961 | 1963 | 24 | 101 | 50 | 25 | 58 | 53 | 25 | 8 | 344 | 66 | 82 | 33 | 11 | 40 | 43 | 16 | 5 | 296 | 640 | | |

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 6) (2)

| District | Division | No of Respondents Interviewed (a) | Non JFM | | | | | | | | | | | | | | | | | | | | | Total of Non JFM |
|------------------------------------|------------|-----------------------------------|--------------------|------------|-----------------------------|----------------------------------|---------------------------|--------------------------|-----------|---------------|------------|--------------|------------|-----------------------------|----------------------------------|---------------------------|--------------------------|-----------|---------------|------------|-----------|------------|--------------|------------------|
| | | | Above 6 Population | | | Male | | | | | | | | Female | | | | | | | | | | |
| | | | Male | Female | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total | |
| (a) | (b) | (c) | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total | | | | |
| Bilaspur | Bilaspur | 60 | 156 | 146 | 302 | 2 | 1 | 10 | 3 | 14 | 7 | 4 | 51 | 9 | 11 | 8 | 2 | 3 | 6 | 4 | 3 | 46 | 97 | |
| | Bharmour | 20 | 55 | 38 | 93 | 2 | 1 | 1 | 1 | 6 | 7 | 1 | 18 | 2 | 2 | 1 | 5 | 5 | 1 | 1 | 14 | 32 | 14 | |
| | Chamba WL | 20 | 42 | 38 | 80 | 4 | 7 | 3 | 1 | 11 | 12 | 3 | 41 | 3 | 1 | 41 | 8 | 3 | 3 | 7 | 8 | 2 | 34 | 75 |
| Chamba | Pangi | 20 | 41 | 52 | 93 | 2 | 6 | 5 | 1 | 5 | 3 | 1 | 23 | 8 | 4 | 3 | 2 | 3 | 2 | 3 | 2 | 20 | 43 | |
| | Kinnaur | 40 | 103 | 95 | 198 | 3 | 13 | 7 | 2 | 9 | 9 | 1 | 45 | 11 | 15 | 2 | 2 | 4 | 8 | 3 | 4 | 45 | 90 | |
| | Sarahan WL | 20 | 55 | 55 | 110 | 1 | 9 | 4 | 2 | 6 | 16 | 6 | 7 | 12 | 3 | 1 | 7 | 13 | 4 | 1 | 48 | 99 | 48 | |
| Kinnaur | Kullu | 20 | 39 | 44 | 83 | 1 | 3 | 1 | 2 | 2 | 5 | 1 | 14 | 3 | 2 | 2 | 1 | 4 | 3 | 1 | 23 | 37 | 23 | |
| | Kullu WL | 20 | 43 | 46 | 89 | 8 | 8 | 5 | 3 | 8 | 6 | 3 | 42 | 11 | 12 | 7 | 1 | 4 | 8 | 1 | 44 | 86 | 44 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 56 | 55 | 111 | 2 | 16 | 5 | 3 | 5 | 10 | 7 | 49 | 12 | 6 | 5 | 1 | 7 | 13 | 3 | 2 | 49 | 98 | |
| | Karsog | 20 | 50 | 42 | 92 | 1 | 7 | 4 | 2 | 1 | 4 | 2 | 23 | 4 | 4 | 2 | 2 | 7 | 7 | 1 | 19 | 42 | 19 | |
| Mandi | Mandi | 20 | 50 | 55 | 105 | 2 | 7 | 7 | 1 | 1 | 3 | 1 | 21 | 9 | 11 | 2 | 1 | 2 | 3 | 1 | 28 | 49 | 28 | |
| | Kotgarh | 20 | 46 | 35 | 81 | 1 | 4 | 2 | 4 | 4 | 8 | 3 | 26 | 3 | 5 | 2 | 3 | 1 | 7 | 1 | 22 | 48 | 22 | |
| | Rampur | 21 | 47 | 43 | 90 | 1 | 8 | 3 | 1 | 4 | 9 | 1 | 25 | 2 | 6 | 2 | 1 | 2 | 5 | 1 | 19 | 44 | 19 | |
| Shimla | Theog | 20 | 50 | 57 | 107 | 1 | 5 | 3 | 1 | 7 | 2 | 1 | 18 | 4 | 6 | 4 | 2 | 7 | 1 | 1 | 27 | 45 | 27 | |
| Total of Territorial | | 341 | 833 | 801 | 1,634 | 26 | 107 | 60 | 24 | 83 | 98 | 32 | 447 | 93 | 97 | 45 | 19 | 56 | 97 | 24 | 7 | 438 | 885 | |
| Kangra | Baijnath | 3 | 7 | 8 | 15 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 7 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 8 | 15 | 8 | |
| Kullu | Kullu | 11 | 27 | 30 | 57 | 6 | 3 | 2 | 1 | 4 | 7 | 3 | 1 | 27 | 8 | 3 | 5 | 1 | 2 | 4 | 3 | 27 | 54 | |
| Mandi | Mandi | 3 | 11 | 3 | 14 | 1 | 5 | 1 | 0 | 2 | 1 | 0 | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 13 | 3 | |
| Kangra | Palampur | 1 | 2 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | |
| Kullu | Parvati | 10 | 28 | 35 | 63 | 9 | 6 | 6 | 2 | 3 | 1 | 1 | 27 | 14 | 9 | 3 | 2 | 2 | 1 | 1 | 32 | 59 | 32 | |
| Kinnaur | Kinnaur | 21 | 59 | 57 | 116 | 4 | 15 | 4 | 4 | 10 | 13 | 2 | 4 | 56 | 10 | 10 | 4 | 3 | 6 | 10 | 4 | 50 | 106 | |
| Shimla | Theog | 1 | 3 | 2 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | |
| Solan | Nalagarh | 5 | 21 | 17 | 38 | 11 | 4 | 1 | 3 | 0 | 0 | 0 | 19 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 14 | 33 | |
| Shimla | Kotgarh | 2 | 6 | 2 | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | |
| Solan | Baddi | 2 | 5 | 5 | 10 | 1 | 3 | 0 | 0 | 1 | 1 | 0 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | |
| Total of Graziers/Grassland | | 400 | 1,002 | 961 | 1,963 | 40 | 41 | 15 | 10 | 21 | 23 | 7 | 5 | 162 | 54 | 26 | 16 | 7 | 12 | 15 | 7 | 144 | 306 | |
| Grand Total | | 400 | 1,002 | 961 | 1,963 | 66 | 148 | 75 | 34 | 104 | 121 | 39 | 22 | 609 | 147 | 123 | 61 | 26 | 68 | 112 | 31 | 582 | 1,191 | |

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 6) (3)

| District | Division | No of Respondents Interviewed (a) | Total | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|------------|-----------------------------------|--------------------|------------|-----------------------------|----------------------------------|---------------------------|--------------------------|-----------|---------------|------------|--------------|-----------|-----------------------------|----------------------------------|---------------------------|--------------------------|-----------|---------------|------------|-----------|------------|-------|
| | | | Above 6 Population | | | Male | | | | | | | | Female | | | | | | | | | |
| | | | Male | Female | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total |
| (a) | (b) | (c) | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total | | | |
| Bilaspur | Bilaspur | 60 | 156 | 146 | 302 | 4 | 35 | 21 | 13 | 34 | 19 | 11 | 5 | 142 | 28 | 34 | 17 | 8 | 17 | 11 | 5 | 132 | |
| | Bharmour | 20 | 55 | 38 | 93 | 3 | 15 | 4 | 1 | 10 | 16 | 3 | 1 | 53 | 8 | 6 | 2 | 1 | 8 | 9 | 2 | 36 | |
| | Chamba WL | 20 | 42 | 38 | 80 | 4 | 7 | 3 | 0 | 11 | 12 | 3 | 1 | 41 | 8 | 3 | 3 | 7 | 8 | 2 | 0 | 34 | |
| Chamba | Pangi | 20 | 41 | 52 | 93 | 4 | 16 | 7 | 1 | 7 | 5 | 1 | 0 | 41 | 14 | 10 | 9 | 0 | 5 | 8 | 0 | 46 | |
| | Kinnaur | 40 | 103 | 95 | 198 | 9 | 24 | 21 | 5 | 18 | 18 | 2 | 3 | 100 | 20 | 23 | 8 | 4 | 12 | 13 | 4 | 85 | |
| | Sarahan WL | 20 | 55 | 55 | 110 | 1 | 9 | 4 | 2 | 6 | 16 | 6 | 7 | 51 | 7 | 12 | 3 | 1 | 7 | 13 | 4 | 48 | |
| Kinnaur | Kullu | 20 | 39 | 44 | 83 | 3 | 10 | 6 | 2 | 6 | 6 | 3 | 0 | 36 | 6 | 10 | 5 | 2 | 10 | 5 | 3 | 42 | |
| | Kullu WL | 20 | 43 | 46 | 89 | 8 | 8 | 5 | 3 | 8 | 6 | 3 | 1 | 42 | 11 | 12 | 7 | 1 | 4 | 8 | 1 | 44 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 56 | 55 | 111 | 2 | 16 | 5 | 3 | 5 | 10 | 7 | 1 | 49 | 12 | 6 | 5 | 1 | 7 | 13 | 3 | 49 | |
| | Karsog | 20 | 50 | 42 | 92 | 1 | 16 | 5 | 3 | 9 | 9 | 5 | 2 | 50 | 8 | 10 | 3 | 2 | 3 | 11 | 2 | 39 | |
| Mandi | Mandi | 20 | 50 | 55 | 105 | 5 | 18 | 10 | 6 | 3 | 3 | 2 | 0 | 47 | 16 | 19 | 3 | 2 | 4 | 5 | 0 | 35 | |
| | Kotgarh | 20 | 46 | 35 | 81 | 5 | 8 | 7 | 4 | 7 | 10 | 4 | 0 | 45 | 8 | 10 | 3 | 2 | 8 | 1 | 0 | 35 | |
| | Rampur | 21 | 47 | 43 | 90 | 1 | 14 | 3 | 3 | 6 | 15 | 1 | 0 | 45 | 5 | 11 | 5 | 2 | 4 | 10 | 3 | 40 | |
| Shimla | Theog | 20 | 50 | 57 | 107 | 0 | 12 | 7 | 3 | 11 | 6 | 6 | 4 | 49 | 8 | 13 | 5 | 0 | 11 | 12 | 4 | 55 | |
| Total of Territorial | | 341 | 833 | 801 | 1,634 | 50 | 208 | 110 | 49 | 141 | 151 | 57 | 25 | 791 | 159 | 179 | 78 | 30 | 96 | 140 | 40 | 734 | |
| Kangra | Baijnath | 3 | 7 | 8 | 15 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 7 | 2 | 1 | 2 | 0 | 1 | 0 | 2 | 8 | |
| Kullu | Kullu | 11 | 27 | 30 | 57 | 6 | 3 | 2 | 1 | 4 | 7 | 3 | 1 | 27 | 8 | 3 | 5 | 1 | 2 | 4 | 1 | 3 | |
| Mandi | Mandi | 3 | 11 | 3 | 14 | 1 | 5 | 1 | 0 | 2 | 1 | 0 | 0 | 10 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | |
| Kangra | Palampur | 1 | 2 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Kullu | Parvati | 10 | 28 | 35 | 63 | 9 | 6 | 6 | 2 | 3 | 1 | 0 | 0 | 27 | 14 | 9 | 3 | 2 | 2 | 1 | 0 | 32 | |
| Kinnaur | Kinnaur | 21 | 59 | 57 | 116 | 4 | 15 | 4 | 4 | 10 | 13 | 2 | 4 | 56 | 10 | 10 | 4 | 3 | 6 | 10 | 4 | 50 | |
| Shimla | Theog | 1 | 3 | 2 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Solan | Nalagarh | 5 | 21 | 17 | 38 | 11 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 19 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 14 | |
| Shimla | Kotgarh | 2 | 6 | 2 | 8 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Solan | Baddi | 2 | 5 | 5 | 10 | 1 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | |
| Total of Graziers/Grassland | | 400 | 1,002 | 961 | 1,963 | 40 | 41 | 15 | 10 | 21 | 23 | 7 | 5 | 162 | 54 | 26 | 16 | 7 | 12 | 15 | 7 | 144 | |
| Grand Total | | 400 | 1,002 | 961 | 1,963 | 90 | 249 | 125 | 59 | 162 | 174 | 64 | 30 | 953 | 213 | 205 | 94 | 37 | 108 | 155 | 47 | 878 | |

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 6) (4)

| District | Division | No of Respondents Interviewed (a) | % to the above 6 Population | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------|-----------------------------------|-----------------------------|-------------|-------------|-------------|-------------|-------------|-----------------------------|-------------|-------------|----------------------------------|------------|-------------|---------------------------|-------------|-------------|--------------------------|-------------|-------------|------------|------------|------------|---------------|------------|------------|
| | | | Non Literacy | | | Primary | | | Middle Education (8th Pass) | | | Under Matriculation (Under 10th) | | | Matriculation (10th Pass) | | | Intermediate (12th pass) | | | Graduate | | | Post Graduate | | |
| | | | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Bilaspur | Bilaspur | 60 | 2.6 | 19.2 | 10.6 | 22.4 | 23.3 | 22.8 | 13.5 | 11.6 | 12.6 | 8.3 | 5.5 | 13.9 | 21.8 | 8.2 | 15.2 | 12.2 | 11.6 | 11.9 | 7.1 | 7.5 | 7.3 | 3.2 | 3.4 | 3.3 |
| | Bharmour | 20 | 5.5 | 21.1 | 11.8 | 27.3 | 15.8 | 22.6 | 7.3 | 5.3 | 6.5 | 1.8 | 2.6 | 11.8 | 18.2 | 21.1 | 19.4 | 29.1 | 23.7 | 26.9 | 5.5 | 5.3 | 5.4 | 1.8 | 0.0 | 1.1 |
| | Chamba WL | 20 | 9.5 | 21.1 | 15.0 | 16.7 | 7.9 | 12.5 | 7.1 | 7.9 | 7.5 | 0.0 | 7.9 | 17.5 | 26.2 | 18.4 | 22.5 | 28.6 | 21.1 | 25.0 | 7.1 | 5.3 | 6.3 | 2.4 | 0.0 | 1.3 |
| Chamba | Pangi | 20 | 9.8 | 26.9 | 19.4 | 39.0 | 19.2 | 28.0 | 17.1 | 17.3 | 17.2 | 2.4 | 0.0 | 7.5 | 17.1 | 9.6 | 12.9 | 12.2 | 15.4 | 14.0 | 2.4 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 |
| | Kinnaur | 40 | 8.7 | 21.1 | 14.6 | 23.3 | 24.2 | 23.7 | 20.4 | 8.4 | 14.6 | 4.9 | 4.2 | 11.1 | 17.5 | 12.6 | 15.2 | 17.5 | 13.7 | 15.7 | 1.9 | 4.2 | 3.0 | 2.9 | 1.1 | 2.0 |
| | Sarahan WL | 20 | 1.8 | 12.7 | 7.3 | 16.4 | 21.8 | 19.1 | 7.3 | 5.5 | 6.4 | 3.6 | 1.8 | 6.4 | 10.9 | 12.7 | 11.8 | 29.1 | 23.6 | 26.4 | 10.9 | 7.3 | 9.1 | 12.7 | 1.8 | 7.3 |
| | Kullu | 20 | 7.7 | 13.6 | 10.8 | 25.6 | 22.7 | 24.1 | 15.4 | 11.4 | 13.3 | 5.1 | 4.5 | 9.6 | 15.4 | 22.7 | 19.3 | 15.4 | 11.4 | 13.3 | 7.7 | 6.8 | 7.2 | 0.0 | 2.3 | 1.2 |
| | Kullu WL | 20 | 18.6 | 23.9 | 21.3 | 18.6 | 26.1 | 22.5 | 11.6 | 15.2 | 13.5 | 7.0 | 2.2 | 10.1 | 18.6 | 8.7 | 13.5 | 14.0 | 17.4 | 15.7 | 7.0 | 2.2 | 4.5 | 2.3 | 0.0 | 1.1 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 3.6 | 21.8 | 12.6 | 28.6 | 10.9 | 19.8 | 8.9 | 9.1 | 9.0 | 5.4 | 1.8 | 5.4 | 8.9 | 12.7 | 10.8 | 17.9 | 23.6 | 20.7 | 12.5 | 5.5 | 9.0 | 1.8 | 3.6 | 2.7 |
| | Karsog | 20 | 2.0 | 19.0 | 9.8 | 32.0 | 23.8 | 28.3 | 10.0 | 7.1 | 8.7 | 6.0 | 4.8 | 12.0 | 18.0 | 7.1 | 13.0 | 18.0 | 26.2 | 21.7 | 10.0 | 4.8 | 7.6 | 4.0 | 0.0 | 2.2 |
| Mandi | Mandi | 20 | 10.0 | 29.1 | 20.0 | 36.0 | 34.5 | 35.2 | 20.0 | 5.5 | 12.4 | 12.0 | 3.6 | 4.8 | 6.0 | 7.3 | 6.7 | 6.0 | 9.1 | 7.6 | 4.0 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 |
| | Kotgarh | 20 | 10.9 | 22.9 | 16.0 | 17.4 | 28.6 | 22.2 | 15.2 | 8.6 | 12.3 | 8.7 | 8.6 | 12.3 | 15.2 | 5.7 | 11.1 | 21.7 | 22.9 | 22.2 | 8.7 | 2.9 | 6.2 | 0.0 | 0.0 | 0.0 |
| | Rampur | 21 | 2.1 | 11.6 | 6.7 | 29.8 | 25.6 | 27.8 | 10.6 | 11.6 | 11.1 | 6.4 | 4.7 | 8.9 | 12.8 | 9.3 | 11.1 | 31.9 | 23.3 | 27.8 | 2.1 | 7.0 | 4.4 | 0.0 | 0.0 | 0.0 |
| Shimla | Theog | 20 | 0.0 | 14.0 | 7.5 | 24.0 | 22.8 | 23.4 | 14.0 | 8.8 | 11.2 | 6.0 | 0.0 | 10.3 | 22.0 | 19.3 | 20.6 | 12.0 | 21.1 | 16.8 | 12.0 | 7.0 | 9.3 | 8.0 | 3.5 | 5.6 |
| Total of Territorial | | 341 | 6.0 | 19.9 | 12.8 | 25.0 | 22.3 | 23.7 | 13.2 | 9.7 | 11.5 | 5.9 | 3.7 | 10.5 | 16.9 | 12.0 | 14.5 | 18.1 | 17.5 | 17.8 | 6.8 | 5.0 | 5.9 | 3.0 | 1.5 | 2.3 |
| Kangra | Bainjath | 3 | 14.3 | 25.0 | 20.0 | 28.6 | 12.5 | 20.0 | 14.3 | 25.0 | 20.0 | 0.0 | 0.0 | 6.7 | 14.3 | 12.5 | 13.3 | 14.3 | 0.0 | 6.7 | 14.3 | 25.0 | 20.0 | 0.0 | 0.0 | 0.0 |
| Kullu | Kullu | 11 | 22.2 | 26.7 | 24.6 | 11.1 | 10.0 | 10.5 | 7.4 | 16.7 | 12.3 | 3.7 | 3.3 | 8.8 | 14.8 | 6.7 | 10.5 | 25.9 | 13.3 | 19.3 | 11.1 | 3.3 | 7.0 | 3.7 | 10.0 | 7.0 |
| Mandi | Mandi | 3 | 9.1 | 33.3 | 14.3 | 45.5 | 0.0 | 35.7 | 9.1 | 33.3 | 14.3 | 0.0 | 0.0 | 14.3 | 18.2 | 33.3 | 21.4 | 9.1 | 0.0 | 7.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Kangra | Palampur | 1 | 0.0 | 100.0 | 33.3 | 50.0 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Kullu | Parvati | 10 | 32.1 | 40.0 | 36.5 | 21.4 | 25.7 | 23.8 | 21.4 | 8.6 | 14.3 | 7.1 | 5.7 | 7.9 | 10.7 | 5.7 | 7.9 | 3.6 | 2.9 | 3.2 | 0.0 | 0.0 | 0.0 | 0.0 | 2.9 | 1.6 |
| Kinnaur | Kinnaur | 21 | 6.8 | 17.5 | 12.1 | 25.4 | 17.5 | 21.6 | 6.8 | 7.0 | 6.9 | 6.8 | 5.3 | 11.2 | 16.9 | 10.5 | 13.8 | 22.0 | 17.5 | 19.8 | 3.4 | 7.0 | 5.2 | 6.8 | 5.3 | 6.0 |
| Shimla | Theog | 1 | 66.7 | 100.0 | 80.0 | 33.3 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Solan | Nalagarh | 5 | 52.4 | 70.6 | 60.5 | 19.0 | 0.0 | 10.5 | 4.8 | 5.9 | 5.3 | 14.3 | 5.9 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Shimla | Kotgarh | 2 | 83.3 | 100.0 | 87.5 | 16.7 | 0.0 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Solan | Baddi | 2 | 20.0 | 40.0 | 30.0 | 60.0 | 60.0 | 60.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 20.0 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total of Graziers/ Grassland Users | | 59 | 23.7 | 33.8 | 28.6 | 24.3 | 16.3 | 20.4 | 8.9 | 10.0 | 9.4 | 5.9 | 4.4 | 8.5 | 12.4 | 7.5 | 10.0 | 13.6 | 9.4 | 11.6 | 4.1 | 4.4 | 4.3 | 3.0 | 4.4 | 3.6 |
| Grand Total | | 400 | 9.0 | 22.2 | 15.4 | 24.9 | 21.3 | 23.1 | 12.5 | 9.8 | 11.2 | 5.9 | 3.9 | 10.1 | 16.2 | 11.2 | 13.8 | 17.4 | 16.1 | 16.8 | 6.4 | 4.9 | 5.7 | 3.0 | 2.0 | 2.5 |

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 18) (5)

| District | Division | No of Respondents Interviewed (a) | Above 18 Population | | | Counts of Responses | | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-----------------------------------|---------------------|------------|-----------------------------|----------------------------------|---------------------------|--------------------------|-----------|---------------|------------|--------------|-----------|-----------------------------|----------------------------------|---------------------------|--------------------------|-----------|---------------|------------|-----------|-----------|------------|----|
| | | | Male | Female | Total | Male | | | | | | | | Female | | | | | | | | Total | | |
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | |
| (a) | (b) | (c) | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total | | | | |
| Bilaspur | Bilaspur | 60 | 116 | 117 | 233 | 4 | 16 | 15 | 8 | 30 | 18 | 10 | 5 | 106 | 28 | 20 | 14 | 4 | 10 | 14 | 11 | 5 | 106 | |
| | Bharmour | 20 | 44 | 35 | 79 | 3 | 8 | 2 | 1 | 8 | 16 | 3 | 1 | 42 | 8 | 6 | 2 | | 7 | 9 | 2 | | 34 | |
| | Chamba WL | 20 | 35 | 33 | 68 | 3 | 4 | 3 | | 9 | 11 | 3 | 1 | 34 | 8 | 2 | 2 | 1 | 6 | 8 | 2 | | 29 | |
| Chamba | Pangi | 20 | 28 | 36 | 64 | 4 | 6 | 6 | | 6 | 5 | 1 | | 28 | 14 | 3 | 5 | | 3 | 6 | | | 31 | |
| | Kinnaur | 40 | 79 | 72 | 151 | 9 | 13 | 14 | 5 | 16 | 14 | 2 | 3 | 76 | 19 | 11 | 6 | 4 | 7 | 12 | 4 | 1 | 64 | |
| | Sarahan WL | 20 | 43 | 35 | 78 | 1 | 4 | 3 | 1 | 5 | 14 | 6 | 7 | 41 | 7 | 2 | 2 | 1 | 4 | 11 | 4 | 1 | 32 | |
| | Kullu | 20 | 30 | 34 | 64 | 3 | 7 | 3 | 1 | 6 | 4 | 3 | | 27 | 6 | 5 | 4 | 1 | 9 | 3 | 3 | 1 | 32 | |
| | Kullu WL | 20 | 38 | 34 | 72 | 8 | 5 | 2 | 3 | 1 | 8 | 1 | | 28 | 7 | 2 | 2 | 2 | 1 | 4 | 11 | 4 | 1 | 32 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 40 | 40 | 80 | 1 | 7 | 3 | 2 | 4 | 9 | 7 | 1 | 34 | 11 | 1 | 4 | | 4 | 11 | 2 | 2 | 35 | |
| | Karsog | 20 | 38 | 35 | 73 | 1 | 8 | 4 | 1 | 8 | 9 | 5 | 2 | 38 | 8 | 7 | | 1 | 3 | 11 | 2 | | 32 | |
| | Mandi | 20 | 36 | 39 | 75 | 5 | 10 | 9 | 3 | 3 | 2 | 2 | | 34 | 16 | 7 | 2 | 2 | 3 | 5 | | | 35 | |
| | Kotgarh | 20 | 41 | 28 | 69 | 4 | 5 | 7 | 3 | 7 | 10 | 4 | | 40 | 8 | 5 | 2 | 3 | 1 | 8 | 1 | | 28 | |
| | Rampur | 21 | 35 | 33 | 68 | 1 | 6 | 3 | 2 | 6 | 15 | 1 | | 34 | 5 | 5 | 2 | 2 | 3 | 10 | 3 | | 30 | |
| | Theog | 20 | 33 | 42 | 75 | 2 | 4 | 3 | 2 | 8 | 5 | 6 | 4 | 32 | 8 | 6 | 2 | | 9 | 9 | 4 | 2 | 40 | |
| Total Territorial | | 341 | 636 | 613 | 1,249 | 47 | 101 | 78 | 33 | 117 | 140 | 54 | 24 | 594 | 153 | 82 | 49 | 20 | 73 | 128 | 42 | 13 | 560 | |
| Kangra | Bajinath | 3 | 6 | 7 | 13 | 1 | 2 | | | 1 | 1 | 1 | | 6 | 2 | 1 | 1 | | 1 | | 2 | | 7 | |
| | Kullu | 11 | 24 | 23 | 47 | 6 | 2 | 2 | 1 | 3 | 6 | 3 | 1 | 24 | 8 | 1 | 3 | 1 | 1 | 4 | 1 | 3 | 22 | |
| | Mandi | 3 | 9 | 3 | 12 | 1 | 3 | 1 | | 2 | 1 | | | 8 | 1 | | 1 | | 1 | | | | 3 | |
| | Kangra | 1 | 1 | | 1 | | 1 | | | | | | | 1 | | | | | | | | | 0 | |
| | Kullu | 10 | 18 | 21 | 39 | 9 | 3 | 3 | 1 | 1 | 1 | | | 18 | 14 | 1 | | 1 | 2 | 1 | | 1 | 20 | |
| | Kinnaur | 21 | 47 | 44 | 91 | 4 | 10 | 3 | 2 | 7 | 12 | 2 | 4 | 44 | 9 | 8 | 3 | 3 | 4 | 8 | 4 | 3 | 42 | |
| | Shimla | 1 | 3 | 1 | 4 | 2 | 1 | | | | | | | 3 | 1 | | | | | | | | 1 | |
| | Solan | 5 | 18 | 14 | 32 | 10 | 4 | 1 | 3 | | | | | 18 | 10 | | 1 | 1 | | | | | 12 | |
| | Shimla | 2 | 3 | 1 | 4 | 2 | 1 | | | | | | | 3 | 1 | | | | | | | | 1 | |
| | Solan | 2 | 2 | 2 | 4 | 1 | 1 | | | | | | | 2 | 2 | | | | | | | | 2 | |
| Total of Graziers/ Grassland | | 59 | 131 | 116 | 247 | 36 | 28 | 10 | 7 | 14 | 21 | 6 | 5 | 127 | 48 | 11 | 9 | 6 | 9 | 13 | 7 | 7 | 110 | |
| Grand Total | | 400 | 767 | 729 | 1,496 | 83 | 129 | 88 | 40 | 131 | 161 | 60 | 29 | 721 | 201 | 93 | 58 | 26 | 82 | 141 | 49 | 20 | 670 | |

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 18) (6)

| District | Division | No of Respondents Interviewed (a) | Above 18 Population | | | % to Above 18 Population (Gender wise) | | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-----------------------------------|---------------------|------------|-----------------------------|--|---------------------------|--------------------------|------------|---------------|----------------------|--------------|------------|-----------------------------|----------------------------------|---------------------------|--------------------------|------------|---------------|----------------------|------------|----------------------|-------------|------|
| | | | Male | Female | Total | Male | | | | | | | | Female | | | | | | | | Total % of Responses | | |
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | |
| (a) | (b) | (c) | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total % of Responses | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total % of Responses | | | | |
| Bilaspur | Bilaspur | 60 | 116 | 117 | 233 | 3.4 | 13.8 | 12.9 | 6.9 | 25.9 | 15.5 | 8.6 | 4.3 | 91.4 | 23.9 | 17.1 | 12.0 | 3.4 | 8.5 | 12.0 | 9.4 | 4.3 | 90.6 | |
| | Bharmour | 20 | 44 | 35 | 79 | 6.8 | 18.2 | 4.5 | 2.3 | 18.2 | 36.4 | 6.8 | 2.3 | 95.5 | 22.9 | 17.1 | | 5.7 | 0.0 | 20.0 | 25.7 | 5.7 | 0.0 | 97.1 |
| | Chamba WL | 20 | 35 | 33 | 68 | 8.6 | 11.4 | 8.6 | 0.0 | 25.7 | 31.4 | 8.6 | 2.9 | 97.1 | 24.2 | 6.1 | 6.1 | 3.0 | 18.2 | 24.2 | 6.1 | 0.0 | 87.9 | |
| Chamba | Pangi | 20 | 28 | 36 | 64 | 14.3 | 21.4 | 21.4 | 0.0 | 21.4 | 17.9 | 3.6 | 0.0 | 100.0 | 38.9 | 8.3 | 13.9 | 0.0 | 8.3 | 16.7 | 0.0 | 0.0 | 86.1 | |
| | Kinnaur | 40 | 79 | 72 | 151 | 11.4 | 16.5 | 17.7 | 6.3 | 20.3 | 17.7 | 2.5 | 3.8 | 96.2 | 26.4 | 15.3 | 8.3 | 5.6 | 9.7 | 16.7 | 5.6 | 1.4 | 88.9 | |
| | Sarahan WL | 20 | 43 | 35 | 78 | 2.3 | 9.3 | 7.0 | 2.3 | 11.6 | 32.6 | 14.0 | 16.3 | 95.3 | 20.0 | 5.7 | 5.7 | 2.9 | 11.4 | 31.4 | 11.4 | 2.9 | 91.4 | |
| | Kullu | 20 | 30 | 34 | 64 | 10.0 | 23.3 | 10.0 | 3.3 | 20.0 | 13.3 | 10.0 | 0.0 | 90.0 | 17.6 | 14.7 | 11.8 | 2.9 | 26.5 | 8.8 | 8.8 | 2.9 | 94.1 | |
| | Kullu WL | 20 | 38 | 34 | 72 | 21.1 | 13.2 | 5.3 | 7.9 | 2.6 | 21.1 | 2.6 | 0.0 | 73.7 | 20.6 | 5.9 | 5.9 | 2.9 | 11.8 | 32.4 | 11.8 | 2.9 | 94.1 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 40 | 40 | 80 | 2.5 | 17.5 | 7.5 | 5.0 | 10.0 | 22.5 | 17.5 | 2.5 | 85.0 | 27.5 | 2.5 | 10.0 | 0.0 | 10.0 | 27.5 | 5.0 | 5.0 | 87.5 | |
| | Karsog | 20 | 38 | 35 | 73 | 2.6 | 21.1 | 10.5 | 2.6 | 21.1 | 23.7 | 13.2 | 5.3 | 100.0 | 22.9 | 20.0 | 0.0 | 2.9 | 8.6 | 31.4 | 5.7 | 0.0 | 91.4 | |
| | Mandi | 20 | 36 | 39 | 75 | 13.9 | 27.8 | 25.0 | 8.3 | 8.3 | 5.6 | 5.6 | 0.0 | 94.4 | 41.0 | 17.9 | 5.1 | 5.1 | 7.7 | 12.8 | 0.0 | 0.0 | 89.7 | |
| | Kotgarh | 20 | 41 | 28 | 69 | 9.8 | 12.2 | 17.1 | 7.3 | 17.1 | 24.4 | 9.8 | 0.0 | 97.6 | 28.6 | 17.9 | 7.1 | 10.7 | 3.6 | 28.6 | 3.6 | 0.0 | 100.0 | |
| | Rampur | 21 | 35 | 33 | 68 | 2.9 | 17.1 | 8.6 | 5.7 | 17.1 | 42.9 | 2.9 | 0.0 | 97.1 | 15.2 | 15.2 | 6.1 | 6.1 | 9.1 | 30.3 | 9.1 | 0.0 | 90.9 | |
| | Theog | 20 | 33 | 42 | 75 | 0.0 | 6.1 | 12.1 | 9.1 | 24.2 | 15.2 | 18.2 | 12.1 | 97.0 | 19.0 | 14.3 | 4.8 | 0.0 | 21.4 | 21.4 | 9.5 | 4.8 | 95.2 | |
| Total Territorial | | 341 | 636 | 613 | 1,249 | 7.4 | 15.9 | 12.3 | 5.2 | 18.4 | 22.0 | 8.5 | 3.8 | 93.4 | 25.0 | 13.4 | 8.0 | 3.3 | 11.9 | 20.9 | 6.9 | 2.1 | 91.4 | |
| Kangra | Bajinath | 3 | 6 | 7 | 13 | 16.7 | 33.3 | 0.0 | 0.0 | 16.7 | 16.7 | 16.7 | 0.0 | 100.0 | 28.6 | 14.3 | 14.3 | 0.0 | 14.3 | 0.0 | 28.6 | 0.0 | 100.0 | |
| | Kullu | 11 | 24 | 23 | 47 | 25.0 | 8.3 | 8.3 | 4.2 | 12.5 | 25.0 | 12.5 | 4.2 | 100.0 | 34.8 | 4.3 | 13.0 | 4.3 | 4.3 | 17.4 | 4.3 | 13.0 | 95.7 | |
| | Mandi | 3 | 9 | 3 | 12 | 11.1 | 33.3 | 11.1 | 0.0 | 22.2 | 11.1 | 0.0 | 0.0 | 88.9 | 33.3 | 0.0 | 33.3 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kangra | 1 | 1 | | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | | | | | | | | 0.0 | |
| | Kullu | 10 | 18 | 21 | 39 | 50.0 | 16.7 | 16.7 | 5.6 | 5.6 | 5.6 | 0.0 | 0.0 | 100.0 | 66.7 | 4.8 | 0.0 | 4.8 | 9.5 | 4.8 | 0.0 | 4.8 | 95.2 | |
| | Kinnaur | 21 | 47 | 44 | 91 | 8.5 | 21.3 | 6.4 | 4.3 | 14.9 | 25.5 | 4.3 | 8.5 | 93.6 | 20.5 | 18.2 | 6.8 | 6.8 | 9.1 | 18.2 | 9.1 | 6.8 | 95.5 | |
| | Shimla | 1 | 3 | 1 | 4 | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Solan | 5 | 18 | 14 | 32 | 55.6 | 22.2 | 5.6 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 71.4 | 0.0 | 7.1 | 7.1 | 0.0 | 0.0 | 0.0 | 0.0 | 85.7 | |
| | Shimla | 2 | 3 | 1 | 4 | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Solan | 2 | 2 | 2 | 4 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassland | | 59 | 131 | 116 | 247 | 27.5 | 21.4 | 7.6 | 5.3 | 10.7 | 16.0 | 4.6 | 3.8 | 96.9 | 41.4 | 9.5 | 7.8 | 5.2 | 7.8 | 11.2 | 6.0 | 6.0 | 94.8 | |
| Grand Total | | 400 | 767 | 729 | 1,496 | 10.8 | 16.8 | 11.5 | 5.2 | 17.1 | 21.0 | 7.8 | 3.8 | 94.0 | 27.6 | 12.8 | 8.0 | 3.6 | 11.2 | 19.3 | 6.7 | 2.7 | 91.9 | |

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 18) (7)

| District | Division | No of Respondents Interviewed (a) | Counts of Responses | | | | | | | | | | | | % to Above 18 Population | | | | | | | | | | |
|-------------------------------------|------------|-----------------------------------|---------------------|------------|--------------|--------------|------------|-----------------------------|----------------------------------|---------------------------|--------------------------|------------|---------------|--------------|--------------------------|-------------|-----------------------------|----------------------------------|---------------------------|--------------------------|------------|---------------|----------------------|--|--|
| | | | Above 18 Population | | | Total | | | | | | | | | | Total | | | | | | | | | |
| | | | Male | Female | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total % of Responses | | |
| | | | (a) | (b) | (c) | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total | Non Literate | Primary | Middle Education (8th Pass) | Under Matriculation (Under 10th) | Matriculation (10th Pass) | Intermediate (12th pass) | Graduate | Post Graduate | Total % of Responses | | |
| Bilaspur | Bilaspur | 60 | 116 | 117 | 233 | 32 | 36 | 29 | 12 | 40 | 32 | 21 | 10 | 212 | 13.7 | 15.5 | 12.4 | 5.2 | 17.2 | 13.7 | 9.0 | 4.3 | 91.0 | | |
| Chamba | Bharmour | 20 | 44 | 35 | 79 | 11 | 14 | 4 | 1 | 15 | 25 | 5 | 1 | 76 | 13.9 | 17.7 | 5.1 | 1.3 | 19.0 | 31.6 | 6.3 | 1.3 | 96.2 | | |
| | Chamba WL | 20 | 35 | 33 | 68 | 11 | 6 | 5 | 1 | 15 | 19 | 5 | 1 | 63 | 16.2 | 8.8 | 7.4 | 1.5 | 22.1 | 27.9 | 7.4 | 1.5 | 92.6 | | |
| | Pangi | 20 | 28 | 36 | 64 | 18 | 9 | 11 | 0 | 9 | 11 | 1 | 0 | 59 | 28.1 | 14.1 | 17.2 | 0.0 | 14.1 | 17.2 | 1.6 | 0.0 | 92.2 | | |
| Kinnaur | Kinnaur | 40 | 79 | 72 | 151 | 28 | 24 | 20 | 9 | 23 | 26 | 6 | 4 | 140 | 18.5 | 15.9 | 13.2 | 6.0 | 15.2 | 17.2 | 4.0 | 2.6 | 92.7 | | |
| | Sarahan WL | 20 | 43 | 35 | 78 | 8 | 6 | 5 | 2 | 9 | 25 | 10 | 8 | 73 | 10.3 | 7.7 | 6.4 | 2.6 | 11.5 | 32.1 | 12.8 | 10.3 | 93.6 | | |
| Kullu | Kullu | 20 | 30 | 34 | 64 | 9 | 12 | 7 | 2 | 15 | 7 | 6 | 1 | 59 | 14.1 | 18.8 | 10.9 | 3.1 | 23.4 | 10.9 | 9.4 | 1.6 | 92.2 | | |
| | Kullu WL | 20 | 38 | 34 | 72 | 15 | 7 | 4 | 4 | 5 | 19 | 5 | 1 | 60 | 20.8 | 9.7 | 5.6 | 5.6 | 6.9 | 26.4 | 6.9 | 1.4 | 83.3 | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 40 | 40 | 80 | 12 | 8 | 7 | 2 | 8 | 20 | 9 | 3 | 69 | 15.0 | 10.0 | 8.8 | 2.5 | 10.0 | 25.0 | 11.3 | 3.8 | 86.3 | | |
| | Karsog | 20 | 38 | 35 | 73 | 9 | 15 | 4 | 2 | 11 | 20 | 7 | 2 | 70 | 12.3 | 20.5 | 5.5 | 2.7 | 15.1 | 27.4 | 9.6 | 2.7 | 95.9 | | |
| Mandi | Mandi | 20 | 36 | 39 | 75 | 21 | 17 | 11 | 5 | 6 | 7 | 2 | 0 | 69 | 28.0 | 22.7 | 14.7 | 6.7 | 8.0 | 9.3 | 2.7 | 0.0 | 92.0 | | |
| | Kotgarh | 20 | 41 | 28 | 69 | 12 | 10 | 9 | 6 | 8 | 18 | 5 | 0 | 68 | 17.4 | 14.5 | 13.0 | 8.7 | 11.6 | 26.1 | 7.2 | 0.0 | 98.6 | | |
| | Rampur | 21 | 35 | 33 | 68 | 6 | 11 | 5 | 4 | 9 | 25 | 4 | 0 | 64 | 8.8 | 16.2 | 7.4 | 5.9 | 13.2 | 36.8 | 5.9 | 0.0 | 94.1 | | |
| Shimla | Theog | 20 | 33 | 42 | 75 | 8 | 8 | 6 | 3 | 17 | 14 | 10 | 6 | 72 | 10.7 | 10.7 | 8.0 | 4.0 | 22.7 | 18.7 | 13.3 | 8.0 | 96.0 | | |
| Total of Territorial | | 341 | 636 | 613 | 1,249 | 200 | 183 | 127 | 53 | 190 | 268 | 96 | 37 | 1,154 | 16 | 15 | 10 | 4 | 15 | 21 | 8 | 3 | 92.4 | | |
| Kangra | Bajjnath | 3 | 6 | 7 | 13 | 3 | 3 | 1 | 0 | 2 | 1 | 3 | 0 | 13 | 23.1 | 23.1 | 7.7 | 0.0 | 15.4 | 7.7 | 23.1 | 0.0 | 100.0 | | |
| Kullu | Kullu | 11 | 24 | 23 | 47 | 14 | 3 | 5 | 2 | 4 | 10 | 4 | 4 | 46 | 29.8 | 6.4 | 10.6 | 4.3 | 8.5 | 21.3 | 8.5 | 8.5 | 97.9 | | |
| Mandi | Mandi | 3 | 9 | 3 | 12 | 2 | 3 | 2 | 0 | 3 | 1 | 0 | 0 | 11 | 16.7 | 25.0 | 16.7 | 0.0 | 25.0 | 8.3 | 0.0 | 0.0 | 91.7 | | |
| Kangra | Palampur | 1 | 1 | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Parvati | 10 | 18 | 21 | 39 | 23 | 4 | 3 | 2 | 3 | 2 | 0 | 1 | 38 | 59.0 | 10.3 | 7.7 | 5.1 | 7.7 | 5.1 | 0.0 | 2.6 | 97.4 | | |
| Kinnaur | Kinnaur | 21 | 47 | 44 | 91 | 13 | 18 | 6 | 5 | 11 | 20 | 6 | 7 | 86 | 14.3 | 19.8 | 6.6 | 5.5 | 12.1 | 22.0 | 6.6 | 7.7 | 94.5 | | |
| Shimla | Theog | 1 | 3 | 1 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Solan | Nalagarh | 5 | 18 | 14 | 32 | 20 | 4 | 2 | 4 | 0 | 0 | 0 | 0 | 30 | 62.5 | 12.5 | 6.3 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 93.8 | | |
| Shimla | Kotgarh | 2 | 3 | 1 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Solan | Baddi | 2 | 2 | 2 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Total of Graziers/ Grassland | | 59 | 131 | 116 | 247 | 84 | 39 | 19 | 13 | 23 | 34 | 13 | 12 | 237 | 34.0 | 15.8 | 7.7 | 5.3 | 9.3 | 13.8 | 5.3 | 4.9 | 96.0 | | |
| Grand Total | | 400 | 767 | 729 | 1,496 | 284 | 222 | 146 | 66 | 213 | 302 | 109 | 49 | 1,391 | 19.0 | 14.8 | 9.8 | 4.4 | 14.2 | 20.2 | 7.3 | 3.3 | 93.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

3.3 Languages (above 6 years old) (1)

| District | Division | No of Respondents Interviewed (a) | Above 6 Population | | | Male | | | | | | | | | Female | | | | | | | | | Total | | | | | | | | | Total % to above 6 population | | | | | | | | |
|-------------------------------------|------------|-----------------------------------|--------------------|------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|--------------|--------------|------------|--------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|------|-------|-------|-------------------------------|--|--|--|--|--|--|--|--|
| | | | (a) | (b) | (c) | Hindi | | | English | | | Read | Write | Speak | Hindi | | | English | | | Read | Write | Speak | Hindi | | | English | | | | | | | | | | | | | | |
| | | | | | | Read | Write | Speak | Read | Write | Speak | | | | Read | Write | Speak | Read | Write | Speak | | | | Read | Write | Speak | Read | Write | Speak | Read | Write | Speak | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 156 | 146 | 302 | 131 | 129 | 129 | 81 | 77 | 49 | 105 | 102 | 114 | 54 | 52 | 33 | 236 | 231 | 243 | 135 | 179 | 82 | 78.1 | 76.5 | 80.5 | 44.7 | 59.3 | 27.2 | | | | | | | | | | | | |
| Chamba | Bharmour | 20 | 54 | 38 | 92 | 47 | 47 | 49 | 38 | 38 | 24 | 22 | 23 | 28 | 22 | 21 | 13 | 69 | 70 | 77 | 60 | 61 | 37 | 75.0 | 76.1 | 83.7 | 65.2 | 66.3 | 40.2 | | | | | | | | | | | | |
| | Chamba WL | 20 | 42 | 38 | 80 | 38 | 38 | 40 | 30 | 30 | 14 | 27 | 26 | 34 | 23 | 23 | 10 | 65 | 64 | 74 | 53 | 56 | 24 | 81.3 | 80.0 | 92.5 | 66.3 | 70.0 | 30.0 | | | | | | | | | | | | |
| | Pangi | 20 | 41 | 52 | 93 | 35 | 35 | 38 | 24 | 24 | 16 | 35 | 35 | 44 | 23 | 23 | 13 | 70 | 70 | 82 | 47 | 59 | 29 | 75.3 | 75.3 | 88.2 | 50.5 | 63.4 | 31.2 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 40 | 102 | 95 | 197 | 90 | 90 | 94 | 49 | 49 | 36 | 71 | 72 | 79 | 42 | 40 | 28 | 161 | 162 | 173 | 91 | 121 | 64 | 81.7 | 82.2 | 87.8 | 46.2 | 61.4 | 32.5 | | | | | | | | | | | | |
| | Sarahan WL | 20 | 55 | 55 | 110 | 50 | 50 | 51 | 33 | 32 | 26 | 44 | 43 | 48 | 28 | 28 | 19 | 94 | 93 | 99 | 61 | 75 | 45 | 85.5 | 84.5 | 90.0 | 55.5 | 68.2 | 40.9 | | | | | | | | | | | | |
| Kullu | Kullu WL | 20 | 39 | 44 | 83 | 34 | 34 | 35 | 23 | 23 | 12 | 36 | 36 | 39 | 29 | 29 | 11 | 70 | 70 | 74 | 52 | 59 | 23 | 84.3 | 84.3 | 89.2 | 62.7 | 71.1 | 27.7 | | | | | | | | | | | | |
| | Sprit(W/L) | 20 | 43 | 46 | 89 | 34 | 34 | 37 | 20 | 19 | 16 | 29 | 29 | 36 | 16 | 16 | 15 | 63 | 63 | 73 | 36 | 48 | 31 | 70.8 | 70.8 | 82.0 | 40.4 | 53.9 | 34.8 | | | | | | | | | | | | |
| Lahaul & Spiti | Sprit(W/L) | 20 | 56 | 55 | 111 | 50 | 50 | 52 | 26 | 29 | 28 | 42 | 42 | 47 | 27 | 29 | 25 | 92 | 92 | 99 | 53 | 71 | 53 | 82.9 | 82.9 | 89.2 | 47.7 | 64.0 | 47.7 | | | | | | | | | | | | |
| | Karsog | 20 | 50 | 42 | 92 | 46 | 46 | 47 | 22 | 22 | 14 | 32 | 32 | 36 | 16 | 16 | 6 | 78 | 78 | 83 | 38 | 54 | 20 | 84.8 | 84.8 | 90.2 | 41.3 | 58.7 | 21.7 | | | | | | | | | | | | |
| Mandi | Mandi | 20 | 50 | 55 | 105 | 40 | 40 | 46 | 15 | 14 | 9 | 34 | 34 | 40 | 13 | 12 | 6 | 74 | 74 | 86 | 28 | 48 | 15 | 70.5 | 70.5 | 81.9 | 26.7 | 45.7 | 14.3 | | | | | | | | | | | | |
| | Kotgarh | 20 | 46 | 35 | 81 | 39 | 39 | 44 | 27 | 20 | 13 | 24 | 25 | 28 | 14 | 12 | 8 | 63 | 64 | 72 | 41 | 45 | 21 | 77.8 | 79.0 | 88.9 | 50.6 | 55.6 | 25.9 | | | | | | | | | | | | |
| | Rampur | 21 | 47 | 43 | 90 | 43 | 43 | 44 | 33 | 32 | 20 | 37 | 36 | 41 | 29 | 28 | 19 | 80 | 79 | 85 | 62 | 68 | 39 | 88.9 | 87.8 | 94.4 | 68.9 | 75.6 | 43.3 | | | | | | | | | | | | |
| Shimla | Theog | 20 | 50 | 57 | 107 | 49 | 49 | 48 | 35 | 35 | 28 | 45 | 45 | 52 | 34 | 34 | 25 | 94 | 94 | 100 | 69 | 80 | 53 | 87.9 | 87.9 | 93.5 | 64.5 | 74.8 | 49.5 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 831 | 801 | 1,632 | 726 | 724 | 754 | 456 | 444 | 305 | 583 | 580 | 666 | 370 | 363 | 231 | 1,309 | 1,304 | 1,420 | 826 | 1,024 | 536 | 80.2 | 79.9 | 87.0 | 50.6 | 62.7 | 32.8 | | | | | | | | | | | | |
| Kangra | Bajmath | 3 | 7 | 8 | 15 | 5 | 5 | 7 | 2 | 2 | | 6 | 4 | 8 | 2 | 2 | 11 | 9 | 15 | 4 | 6 | 0 | 73.3 | 60.0 | 100.0 | 26.7 | 40.0 | 0.0 | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | 27 | 30 | 57 | 20 | 24 | 24 | 10 | 7 | 3 | 20 | 15 | 24 | 11 | 8 | 2 | 40 | 39 | 48 | 21 | 22 | 5 | 70.2 | 68.4 | 84.2 | 36.8 | 38.6 | 8.8 | | | | | | | | | | | | |
| Mandi | Mandi | 3 | 11 | 3 | 14 | 2 | | | | | | | | | | | 2 | 0 | 2 | 0 | 0 | 0 | 14.3 | 0.0 | 14.3 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | 2 | 1 | 3 | 2 | 2 | 2 | | | | | | 1 | | | 2 | 2 | 3 | 0 | 0 | 0 | 66.7 | 66.7 | 100.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 28 | 35 | 63 | 12 | 13 | 28 | | | | 14 | 14 | 35 | | | 26 | 27 | 63 | 0 | 14 | 0 | 41.3 | 42.9 | 100.0 | 0.0 | 22.2 | 0.0 | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | 59 | 57 | 116 | 53 | 35 | 34 | 14 | 14 | 12 | 47 | 34 | 34 | 14 | 14 | 12 | 100 | 69 | 68 | 28 | 48 | 24 | 86.2 | 59.5 | 58.6 | 24.1 | 41.4 | 20.7 | | | | | | | | | | | | |
| Shimla | Theog | 1 | 3 | 2 | 5 | 1 | 1 | 3 | | | | 1 | | 2 | | | 1 | 1 | 5 | 0 | 0 | 0 | 20.0 | 20.0 | 100.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | 21 | 17 | 38 | 9 | 4 | 16 | | | | 5 | 1 | 9 | | | 14 | 5 | 25 | 0 | 1 | 0 | 36.8 | 13.2 | 65.8 | 0.0 | 2.6 | 0.0 | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | 6 | 2 | 8 | 2 | 1 | 3 | | | | 3 | | 1 | | | 2 | 1 | 4 | 0 | 0 | 0 | 25.0 | 12.5 | 50.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | |
| Solan | Baddi | 2 | 5 | 5 | 10 | 5 | | | | | | 4 | | | | | 9 | 0 | 0 | 0 | 0 | 0 | 90.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 169 | 160 | 329 | 111 | 85 | 117 | 26 | 23 | 15 | 96 | 68 | 116 | 27 | 24 | 14 | 207 | 153 | 233 | 53 | 91 | 29 | 62.9 | 46.5 | 70.8 | 16.1 | 27.7 | 8.8 | | | | | | | | | | | | |
| Grand Total | | 400 | 1,000 | 961 | 1,961 | 837 | 809 | 871 | 482 | 467 | 320 | 679 | 648 | 782 | 397 | 387 | 245 | 1,516 | 1,457 | 1,652 | 879 | 1,115 | 565 | 77.3 | 74.3 | 84.3 | 44.8 | 56.9 | 28.8 | | | | | | | | | | | | |

Source: Livelihood Survey, JICA Study Team (2017)

3.3 Languages (above 6 years old) (2)

Other languages Used in the Survey Area

| District | Division | No of Respondents Interviewed (a) | No of Persons Speaking Local Languages | | | | | | | | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|-----------------------------------|--|-----------|-----------|-----------|-----------|------------|-----------|------------|------------|-----------|-----------|------------|-----------|-----------|--------------|--|-----|--|--|--|--|----|----|-----|
| | | | Dogri | Bharmour | Bhoti | Bilaspur | Bodhis | Gaddi | Gujjari | Kinnauri | Kulluvi | Malwi | Mandaya | Pahari | Pangwali | Punjabi | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 61 | | | 40 | | | | | | | | | | | | | 128 | | | | | | 52 | 281 |
| Chamba | Bharmour | 20 | | 13 | | | | | | 64 | | | | | | | | | | | | | | | | 77 |
| | Chamba WL | 20 | | 2 | | | | | | 60 | | | | | | | | | | | | | | | | 62 |
| Kinnaur | Pangi | 20 | | | | | | | | | | | | | | | | | | | | | | 88 | 88 | |
| | Kinnaur | 40 | 40 | | | | | | | | 144 | | | | | | | | | | | | | | | 184 |
| Kullu | Sarahan WL | 20 | 19 | | | | | | | | | | | | | | | | | | | | | | | 93 |
| | Kullu | 20 | 1 | | | | | | | | | 76 | | | | | | | | | | | | | | 78 |
| Lahaul & Spiti | Kullu WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | 79 |
| | Sprit(W/L) | 20 | 4 | | 97 | | 13 | | | | | | | | | | | | | | | | | | | 114 |
| Mandi | Karsog | 20 | 29 | | | | | | | | | | | | | | | | | | | | | | | 87 |
| | Mandi | 20 | 33 | | | | | | | | | | | | | | | | | | | | | | | 103 |
| Shimla | Kotgarh | 20 | 14 | | | | | | | | | | | | | | | | | | | | | | | 76 |
| | Rampur | 21 | 35 | | | | | | | | | | | | | | | | | | | | | | | 88 |
| | Theog | 20 | 25 | | | | | | | | | | | | | | | | | | | | | | | 111 |
| Total of Territorial | | 341 | 261 | 15 | 97 | 40 | 13 | 124 | 0 | 199 | 153 | 0 | 61 | 418 | 88 | 52 | 1,521 | | | | | | | | | |
| Kangra | Bajmath | 3 | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Parvati | 10 | | | | | | | | | | | | | 55 | | | | | | | | | | | 55 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | 50 | | | | | | | | | | | | 50 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | 28 | | | | | | | | | | | | 28 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | 7 | | | | | | | | | | | | 7 |
| Solan | Baddi | 2 | | | | | | | | | | | | 10 | | | | | | | | | | | | 10 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 50 | 0 | 55 | 0 | 0 | 0 | 0 | 150 | | | | | | | | | |
| Grand Total | | 400 | 261 </ | | | | | | | | | | | | | | | | | | | | | | | |

3.4 Migration

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | Non JFM | | | | | | Total | | | | | |
|-------------------------------------|------------|-----------------------------------|-----------------------|----------------------------|-------------------------|----------------------------|-------------------------|----------------------------------|-----------------------|----------------------------|-------------------------|----------------------------|-------------------------|----------------------------------|-----------------------|----------------------------|-------------------------|----------------------------|-------------------------|----------------------------------|
| | | | No of Male in persons | Average duration in months | No of Female in persons | Average duration in months | Total number of persons | Total average duration in months | No of Male in persons | Average duration in months | No of Female in persons | Average duration in months | Total number of persons | Total average duration in months | No of Male in persons | Average duration in months | No of Female in persons | Average duration in months | Total number of persons | Total average duration in months |
| Bilaspur | Bilaspur | 60 | 8 | 5.1 | 1 | 4.0 | 9 | 5.0 | 8 | 11.0 | 1 | 12.0 | 9 | 11.1 | 16 | 8.1 | 2 | 8.0 | 18 | 8.1 |
| | Bharmour | 20 | 4 | 6.3 | 2 | 4.0 | 6 | 5.5 | 1 | - | | 1 | - | 5 | 6.3 | 2 | 4.0 | 7 | 5.5 | |
| | Chamba WL | 20 | | | | | | | 7 | 7.4 | 4 | 8.0 | 11 | 7.6 | 7 | 7.4 | 4 | 8.0 | 11 | 7.6 |
| Chamba | Pangi | 20 | | | | | | | 1 | 7.0 | 1 | 7.0 | 2 | 7.0 | 1 | 7.0 | 1 | 7.0 | 2 | 7.0 |
| | Kinnaur | 40 | 5 | 8.0 | 3 | 10.0 | 8 | 9.0 | 3 | 12.0 | 3 | 12.0 | 6 | 12.0 | 8 | 10.0 | 6 | 10.7 | 14 | 10.3 |
| Kinnaur | Sarahan WL | 20 | | | | | | | 3 | - | | | 3 | - | 3 | - | | | 3 | - |
| | Kullu | 20 | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 6 | 9.5 | 7 | 9.4 | 13 | 9.5 | 6 | 9.5 | 7 | 9.4 | 13 | 9.5 |
| | Karsog | 20 | 3 | 10.0 | | | 3 | 10.0 | | | | | | 3 | 10.0 | | | 3 | 10.0 | |
| Mandi | Mandi | 20 | 2 | 5.5 | | | 2 | 5.5 | 1 | 3.0 | 1 | 6.0 | 2 | 4.5 | 3 | 4.7 | 1 | 6.0 | 4 | 5.0 |
| | Kotgarh | 20 | | | | | | | 4 | 10.8 | | | 4 | 10.8 | 4 | 10.8 | | | 4 | 10.8 |
| | Rampur | 21 | 2 | 4.5 | | | 2 | 4.5 | 1 | 8.0 | 1 | 10.0 | 2 | 9.0 | 3 | 5.7 | 1 | 10.0 | 4 | 6.8 |
| Shimla | Theog | 20 | | | 2 | 6.0 | 2 | 6.0 | | | | | | | | | 2 | 6.0 | 2 | 6.0 |
| Total of Territorial | | 341 | 24 | 6.4 | 8 | 6.3 | 32 | 6.3 | 35 | 9.3 | 18 | 9.1 | 53 | 9.2 | 59 | 8.1 | 26 | 8.2 | 85 | 8.2 |
| Kangra | Bainath | 3 | | | | | | | 3 | 4.3 | 1 | 4.0 | 4 | 4.3 | 3 | 4.3 | 1 | 4.0 | 4 | 4.3 |
| Kullu | Kullu | 11 | | | | | | | 7 | 5.3 | 1 | 3.0 | 8 | 5.0 | 7 | 5.3 | 1 | 3.0 | 8 | 5.0 |
| Mandi | Mandi | 3 | | | | | | | 2 | 4.0 | | | 2 | 4.0 | 2 | 4.0 | | | 2 | 4.0 |
| Kangra | Palampur | 1 | | | | | | | 1 | 4.0 | | | 1 | 4.0 | 1 | 4.0 | | | 1 | 4.0 |
| Kullu | Parvati | 10 | | | | | | | 7 | 5.0 | 4 | 4.0 | 11 | 4.6 | 7 | 5.0 | 4 | 4.0 | 11 | 4.6 |
| Kinnaur | Kinnaur | 21 | | | | | | | 5 | 4.2 | 6 | 6.1 | 11 | 5.2 | 5 | 4.2 | 6 | 6.1 | 11 | 5.2 |
| Shimla | Theog | 1 | | | | | | | 3 | 4.0 | 1 | 4.0 | 4 | 4.0 | 3 | 4.0 | 1 | 4.0 | 4 | 4.0 |
| Solan | Nalagarh | 5 | | | | | | | 17 | 4.5 | 10 | 4.4 | 27 | 4.4 | 17 | 4.5 | 10 | 4.4 | 27 | 4.4 |
| Shimla | Kotgarh | 2 | | | | | | | 6 | 6.0 | 1 | 6.0 | 7 | 6.0 | 6 | 6.0 | 1 | 6.0 | 7 | 6.0 |
| Solan | Baddi | 2 | | | | | | | 2 | 6.0 | 2 | 6.0 | 4 | 6.0 | 2 | 6.0 | 2 | 6.0 | 4 | 6.0 |
| Total of Graziers/ Grassland | | 59 | | | | | | | 53 | 4.8 | 26 | 4.8 | 79 | 4.8 | 53 | 4.8 | 26 | 4.8 | 79 | 4.8 |
| Grand Total | | 400 | 24 | 6.4 | 8 | 6.3 | 32 | 6.3 | 88 | 6.4 | 44 | 6.4 | 132 | 6.4 | 112 | 6.392 | 52 | 6.4 | 164 | 6.4 |

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

3.5 Primary Occupation (1)

| | | JFM | | | | | | | | | | | | | | | | | Total | |
|--|------------|-----------------------------------|--------------------|-------------------|----------|-----------------------------------|-----------------------|------------------------------|------------------------|--------------------|----------------|------------------|---------------------|-----------|-----------------------|------------|---------------------|---------------------|----------|------------|
| | | Male | | | | | | | | | | | | | | | | | | |
| District | Division | No of Respondents Interviewed (a) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | 17 |
| | | | Subsistence farmer | Commercial Farmer | Shepherd | Daily Wages Agricultural Labourer | Skilled Wage Labourer | Semi/Unskilled Wage Labourer | Service-Private Sector | Service-Government | Trade Business | Cottage Industry | Other self-Employed | Housewife | Retired pensioner and | Unemployed | Student not earning | Retired not earning | Vendor | |
| Bilaspur | Bilaspur | 60 | 7 | 3 | | 8 | 8 | 2 | 10 | 8 | 5 | | 6 | | 7 | 3 | 5 | | | 72 |
| | Bharmour | 20 | 4 | | | | | | 1 | 2 | 1 | | | | 2 | 4 | 7 | | | 21 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | 0 |
| Chamba | Pangi | 20 | 2 | 1 | | 3 | | | | | 1 | | | 1 | | | 2 | | | 10 |
| | Kinnaur | 40 | 11 | 4 | | 6 | 3 | | 1 | 3 | 1 | | | | 1 | 2 | 3 | | | 35 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | 0 |
| | Kullu | 20 | 4 | 6 | 1 | 4 | 1 | | 1 | 1 | | | 1 | | | | 2 | | | 21 |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | | | 0 |
| Lahaul & Spiti (W/L) | | 20 | | | | | | | | | | | | | | | | | | 0 |
| | Karsog | 20 | 11 | 3 | | | 2 | | 1 | 2 | | | | | 1 | 1 | 3 | | | 24 |
| Mandi | Mandi | 20 | 2 | 4 | | 1 | 1 | 1 | 3 | | 1 | | | | | | 6 | | | 19 |
| | Kotgarh | 20 | 2 | 2 | | 1 | 2 | 1 | 2 | | 1 | | 1 | | 2 | 1 | 2 | | | 17 |
| | Rampur | 21 | 4 | 1 | | 1 | 2 | | | | 3 | 1 | | | | | 1 | | | 13 |
| Shimla | Theog | 20 | 7 | | | 3 | | | | 6 | 1 | | 1 | | 3 | 2 | 1 | | | 24 |
| Total of Territorial | | 341 | 47 | 31 | 1 | 24 | 22 | 4 | 19 | 22 | 14 | 1 | 9 | 1 | 16 | 13 | 32 | 0 | 0 | 256 |
| Kangra | Baginath | 3 | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland User | | 59 | | | | | | | | | | | | | | | | | | |
| Grand Total | | 400 | 47 | 31 | 1 | 24 | 22 | 4 | 19 | 22 | 14 | 1 | 9 | 1 | 16 | 13 | 32 | 0 | 0 | 256 |

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation (2)

| | | JFM | | | | | | | | | | | | | | | | | Total | |
|--|------------|-----------------------------------|--------------------|-------------------|----------|-----------------------------------|-----------------------|------------------------------|------------------------|--------------------|----------------|------------------|---------------------|------------|-----------------------|------------|---------------------|---------------------|----------|------------|
| | | Female | | | | | | | | | | | | | | | | | | |
| District | Division | No of Respondents Interviewed (a) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | 17 |
| | | | Subsistence farmer | Commercial Farmer | Shepherd | Daily Wages Agricultural Labourer | Skilled Wage Labourer | Semi/Unskilled Wage Labourer | Service-Private Sector | Service-Government | Trade Business | Cottage Industry | Other self-Employed | Housewife | Retired pensioner and | Unemployed | Student not earning | Retired not earning | Vendor | |
| Bilaspur | Bilaspur | 60 | 5 | | 1 | 1 | | | | 2 | | | 2 | 44 | 1 | | 4 | | | 60 |
| | Bharmour | 20 | | | | | | | | 2 | | | | 13 | | 2 | 2 | | | 19 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | 0 |
| Chamba | Pangi | 20 | | | | 2 | | | | | | | | 10 | | | 3 | | | 15 |
| | Kinnaur | 40 | 8 | 2 | | 3 | | | 1 | | | | | 19 | 1 | 1 | | | | 35 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | 0 |
| | Kullu | 20 | 1 | | | | | | 1 | | | | | 10 | 1 | | 2 | | | 15 |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | | | 0 |
| Lahaul & Spiti (W/L) | | 20 | | | | | | | | | | | | | | | | | | 0 |
| | Karsog | 20 | 10 | 2 | | | | | | | | | | 8 | | | 1 | | | 21 |
| Mandi | Mandi | 20 | | | | | | | | | | | | 9 | | 1 | 2 | | | 12 |
| | Kotgarh | 20 | 3 | 1 | | | | | 1 | | | | | 3 | | | 1 | | | 9 |
| | Rampur | 21 | 1 | 1 | | 2 | | | | | | 1 | | 10 | | | 2 | | | 17 |
| Shimla | Theog | 20 | | 6 | | | | | 1 | 2 | | | | 14 | 1 | | | | | 24 |
| Total of Territorial | | 341 | 28 | 12 | 1 | 8 | 0 | 0 | 1 | 9 | 0 | 1 | 2 | 140 | 4 | 4 | 17 | 0 | 0 | 227 |
| Kangra | Baginath | 3 | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland User | | 59 | | | | | | | | | | | | | | | | | | |
| Grand Total | | 400 | 28 | 12 | 1 | 8 | 0 | 0 | 1 | 9 | 0 | 1 | 2 | 140 | 4 | 4 | 17 | 0 | 0 | 227 |

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation (3)

| | | Non JFM | | | | | | | | | | | | | | | | | Total | |
|--|------------|-----------------------------------|--------------------|-------------------|----------|-----------------------------------|-----------------------|------------------------------|------------------------|--------------------|----------------|------------------|---------------------|-----------|-----------------------|------------|---------------------|---------------------|----------|------------|
| | | Male | | | | | | | | | | | | | | | | | | |
| District | Division | No of Respondents Interviewed (a) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | 17 |
| | | | Subsistence farmer | Commercial Farmer | Shepherd | Daily Wages Agricultural Labourer | Skilled Wage Labourer | Semi/Unskilled Wage Labourer | Service-Private Sector | Service-Government | Trade Business | Cottage Industry | Other self-Employed | Housewife | Retired pensioner and | Unemployed | Student not earning | Retired not earning | Vendor | |
| Bilaspur | Bilaspur | 60 | 6 | | | 3 | 2 | | 17 | 3 | 1 | | | | 2 | | 4 | | | 38 |
| | Bharmour | 20 | 2 | 2 | | 3 | 1 | | 1 | 4 | | 1 | | | | | 3 | | | 16 |
| | Chamba WL | 20 | 3 | | 3 | | 3 | | 3 | 4 | | | | 3 | 1 | 6 | 1 | | | 27 |
| Chamba | Pangi | 20 | 3 | | | 4 | | | 1 | 2 | 2 | | | | 1 | 1 | | | | 14 |
| | Kinnaur | 40 | 13 | 7 | | 2 | 2 | | 2 | 3 | 1 | | | 1 | 1 | 1 | 6 | | | 39 |
| Kinnaur | Sarahan WL | 20 | 10 | | 2 | 3 | 2 | | 4 | 5 | 1 | | | 1 | 4 | 2 | 5 | | | 39 |
| | Kullu | 20 | 2 | 6 | | 1 | | | | | 2 | | | | 1 | 2 | | | | 14 |
| Kullu | Kullu WL | 20 | 10 | 6 | | 5 | | | 1 | 8 | | 4 | | | | | 1 | | | 35 |
| Lahaul & Spiti (W/L) | | 20 | 5 | 8 | | 2 | | | | 9 | | | | | | | 7 | 8 | | 40 |
| | Karsog | 20 | 4 | 1 | | 1 | | | | 3 | | | | 1 | | 4 | 1 | | | 15 |
| Mandi | Mandi | 20 | 7 | 1 | | | 1 | 1 | | 1 | | | | | | 1 | 1 | | | 13 |
| | Kotgarh | 20 | 4 | 4 | | 1 | | | 7 | | 1 | 1 | | | 4 | | 1 | | | 23 |
| | Rampur | 21 | 9 | 3 | | 1 | | | | | | | 1 | | | 3 | 3 | | | 20 |
| Shimla | Theog | 20 | 1 | 2 | | | 1 | | | 2 | | | | | 3 | | 1 | | | 10 |
| Total of Territorial | | 341 | 79 | 40 | 5 | 26 | 12 | 3 | 43 | 36 | 10 | 2 | 2 | 5 | 17 | 25 | 38 | 0 | 0 | 343 |
| Kangra | Baginath | 3 | 2 | | 2 | | | | | 3 | | | | | | | | | | 7 |
| Kullu | Kullu | 11 | 13 | 3 | 2 | | | | 1 | 1 | 2 | 1 | | | | | 1 | 1 | | 25 |
| Mandi | Mandi | 3 | 1 | | | | | | | | | | | | | | | | | 1 |
| Kangra | Palampur | 1 | 1 | | | | | | | | | | | | | | | | | 1 |
| Kullu | Parvati | 10 | 15 | | | | | | | | | | | | | | | | 1 | 16 |
| Kinnaur | Kinnaur | 21 | 15 | 2 | | 4 | 2 | | | 5 | | | | 1 | 6 | 6 | | | 1 | 42 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | 1 | | | | | | | 1 | | 2 | | 4 |
| Shimla | Kotgarh | 2 | | | | | | | | | 2 | | | | | | | | | 2 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | 3 | | | 3 |
| Total of Graziers/ Grassland User | | 59 | 47 | 5 | 4 | 4 | 2 | 2 | 1 | 10 | 3 | 0 | 0 | 0 | 1 | 7 | 10 | 3 | 2 | 101 |
| Grand Total | | 400 | 126 | 45 | 9 | 30 | 14 | 5 | 44 | 46 | 13 | 2 | 2 | 5 | 18 | 32 | 48 | 3 | 2 | 444 |

Source: Livelihood Survey, JICA Study Team (2017)

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

3.5 Primary Occupation

(4)

| | | Non JFM | | | | | | | | | | | | | | | | | Total | |
|----------|--|-----------------------------------|-------------------------|------------------------|---------------|--|----------------------------|-----------------------------------|-----------------------------|-------------------------|---------------------|------------------------|---------------------------|-----------------|------------------------------|------------------|---------------------------|---------------------------|--------------|------------|
| | | Female | | | | | | | | | | | | | | | | | | |
| District | Division | No of Respondents Interviewed (a) | 1 Subsistence farmer | 2 Commercial Farmer | 3 Shepherd | 4 Daily Wages Agricultural Labourer | 5 Skilled Wage Labourer | 6 Semi/Unskilled Wage Labourer | 7 Service-Private Sector | 8 Service Government | 9 Trade Business | 10 Cottage Industry | 11 Other self-Employed | 12 Housewife | 13 Retiring pensioner and | 14 Unemployed | 15 Student not earning | 16 Retired not earning | 17 Vendor | Total |
| Bilaspur | Bilaspur | 60 | 6 | | | 3 | 1 | 1 | | | | | | 23 | 1 | 1 | 3 | | | 39 |
| | Bharmour | 20 | | 1 | | | | | | 1 | | | | 8 | | 2 | | | | 12 |
| | Chamba WL | 20 | 1 | | | 1 | | | | | | | | 22 | 3 | 1 | 3 | | | 32 |
| Chamba | Pangi | 20 | | | | 2 | | | | | | | | 13 | | | 4 | | | 20 |
| | Kinnaur | 40 | 5 | 3 | | 3 | | | 1 | 3 | | | | 15 | | | 9 | | | 39 |
| Kinnaur | Sarahan WL | 20 | 6 | | | 4 | | | | 3 | | | 1 | 16 | | | 8 | | | 38 |
| | Kullu | 20 | | 1 | | | | | | | | | | 8 | | | 5 | 1 | | 16 |
| | Kullu WL | 20 | 4 | 1 | | | | | 1 | | | | | 20 | 1 | | 3 | | | 31 |
| Lahaul & | Spiri(W/L) | 20 | 7 | 7 | 1 | | | | 1 | 6 | | | 1 | 10 | 1 | 3 | 3 | | | 39 |
| | Karsog | 20 | 2 | | | | | | | | | | | 12 | | 2 | | | | 16 |
| Mandi | Mandi | 20 | 8 | | | | 2 | | | | | | | 6 | | | 2 | | | 18 |
| | Kotgarh | 20 | 4 | | | | | | 1 | 2 | | | | 11 | 1 | | | | | 19 |
| | Rampur | 21 | 1 | | | 1 | | | 2 | | | 1 | | 2 | | 1 | 5 | | | 13 |
| Shimla | Theog | 20 | 2 | | | | | | | | | | | 7 | | | 2 | | | 13 |
| | Total of Territorial | 341 | 46 | 14 | 1 | 14 | 3 | 1 | 5 | 19 | 0 | 2 | 2 | 173 | 7 | 10 | 47 | 1 | 0 | 345 |
| Kangra | Baijnath | 3 | 7 | | | | | | | | | | | | | | | | | 7 |
| Kullu | Kullu | 11 | 11 | 2 | | | 1 | | 1 | 2 | | | | | | 1 | 1 | | | 19 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Parvati | 10 | 10 | | | | | | | | | | | | | | | | | 10 |
| Kinnaur | Kinnaur | 21 | 8 | | | 1 | 1 | | 1 | 3 | | | | 13 | | 3 | 7 | | | 37 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | 7 | | | 1 | | | 8 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | 2 | | | | | | 2 |
| Solan | Baddi | 2 | | | | | | | | | | | | 2 | | | 3 | | | 5 |
| | Total of Graziers/ Grassland User | 59 | 36 | 2 | 0 | 1 | 2 | 0 | 2 | 5 | 0 | 0 | 0 | 24 | 0 | 4 | 12 | 0 | 0 | 88 |
| | Grand Total | 400 | 82 | 16 | 1 | 15 | 5 | 1 | 7 | 24 | 0 | 2 | 2 | 197 | 7 | 14 | 59 | 1 | 0 | 433 |

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation

(5)

| | | Total | | | | | | | | | | | | | | | | | Total | |
|----------|--|-----------------------------------|-------------------------|------------------------|---------------|--|----------------------------|-----------------------------------|-----------------------------|-------------------------|---------------------|------------------------|---------------------------|-----------------|------------------------------|------------------|---------------------------|---------------------------|--------------|------------|
| | | Male | | | | | | | | | | | | | | | | | | |
| District | Division | No of Respondents Interviewed (a) | 1 Subsistence farmer | 2 Commercial Farmer | 3 Shepherd | 4 Daily Wages Agricultural Labourer | 5 Skilled Wage Labourer | 6 Semi/Unskilled Wage Labourer | 7 Service-Private Sector | 8 Service Government | 9 Trade Business | 10 Cottage Industry | 11 Other self-Employed | 12 Housewife | 13 Retiring pensioner and | 14 Unemployed | 15 Student not earning | 16 Retired not earning | 17 Vendor | Total |
| Bilaspur | Bilaspur | 60 | 13 | 3 | 0 | 11 | 10 | 2 | 27 | 11 | 6 | 0 | 6 | 0 | 9 | 3 | 9 | 0 | 0 | 110 |
| | Bharmour | 20 | 6 | 2 | 0 | 3 | 1 | 0 | 1 | 6 | 1 | 1 | 0 | 0 | 2 | 4 | 10 | 0 | 0 | 37 |
| | Chamba WL | 20 | 3 | 0 | 3 | 0 | 3 | 0 | 3 | 4 | 0 | 0 | 0 | 3 | 1 | 6 | 1 | 0 | 0 | 27 |
| Chamba | Pangi | 20 | 5 | 1 | 0 | 7 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 24 |
| | Kinnaur | 40 | 24 | 11 | 0 | 8 | 5 | 0 | 3 | 6 | 2 | 0 | 0 | 1 | 2 | 3 | 9 | 0 | 0 | 74 |
| Kinnaur | Sarahan WL | 20 | 10 | 0 | 2 | 3 | 2 | 0 | 4 | 5 | 1 | 0 | 0 | 1 | 4 | 2 | 5 | 0 | 0 | 39 |
| | Kullu | 20 | 6 | 12 | 1 | 5 | 1 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 0 | 35 |
| | Kullu WL | 20 | 10 | 6 | 0 | 5 | 0 | 1 | 8 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 35 |
| Lahaul & | Spiri(W/L) | 20 | 5 | 8 | 0 | 2 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 1 | 7 | 8 | 0 | 0 | 0 | 40 |
| | Karsog | 20 | 15 | 4 | 0 | 1 | 2 | 0 | 1 | 5 | 0 | 0 | 1 | 0 | 1 | 5 | 4 | 0 | 0 | 39 |
| Mandi | Mandi | 20 | 9 | 5 | 0 | 1 | 2 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 32 |
| | Kotgarh | 20 | 6 | 6 | 0 | 2 | 2 | 1 | 9 | 0 | 2 | 1 | 1 | 0 | 6 | 1 | 3 | 0 | 0 | 40 |
| | Rampur | 21 | 13 | 4 | 0 | 2 | 2 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 3 | 4 | 0 | 0 | 33 |
| Shimla | Theog | 20 | 1 | 9 | 0 | 0 | 4 | 0 | 0 | 8 | 1 | 0 | 1 | 0 | 6 | 2 | 2 | 0 | 0 | 34 |
| | Total of Territorial | 341 | 126 | 71 | 6 | 50 | 34 | 7 | 62 | 58 | 24 | 3 | 11 | 6 | 33 | 38 | 70 | 0 | 0 | 599 |
| Kangra | Baijnath | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Kullu | Kullu | 11 | 13 | 3 | 2 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 25 |
| Mandi | Mandi | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Kangra | Palampur | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Kullu | Parvati | 10 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Kinnaur | Kinnaur | 21 | 15 | 2 | 0 | 4 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 6 | 6 | 0 | 1 | 42 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 4 |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| | Total of Graziers/ Grassland User | 59 | 47 | 5 | 4 | 4 | 2 | 2 | 1 | 10 | 3 | 0 | 0 | 0 | 1 | 7 | 10 | 3 | 2 | 101 |
| | Grand Total | 400 | 173 | 76 | 10 | 54 | 36 | 9 | 63 | 68 | 27 | 3 | 11 | 6 | 34 | 45 | 80 | 3 | 2 | 700 |

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation

(6)

| | | Total | | | | | | | | | | | | | | | | | Total | |
|----------|-----------------------------|-----------------------------------|-------------------------|------------------------|---------------|--|----------------------------|-----------------------------------|-----------------------------|-------------------------|---------------------|------------------------|---------------------------|-----------------|------------------------------|------------------|---------------------------|---------------------------|--------------|-------|
| | | Female | | | | | | | | | | | | | | | | | | |
| District | Division | No of Respondents Interviewed (a) | 1 Subsistence farmer | 2 Commercial Farmer | 3 Shepherd | 4 Daily Wages Agricultural Labourer | 5 Skilled Wage Labourer | 6 Semi/Unskilled Wage Labourer | 7 Service-Private Sector | 8 Service Government | 9 Trade Business | 10 Cottage Industry | 11 Other self-Employed | 12 Housewife | 13 Retiring pensioner and | 14 Unemployed | 15 Student not earning | 16 Retired not earning | 17 Vendor | Total |
| Bilaspur | Bilaspur | 60 | 11 | 0 | 1 | 4 | 1 | 1 | 0 | 2 | 0 | 0 | 2 | 67 | 2 | 1 | 7 | 0 | 0 | 99 |
| | Bharmour | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 21 | 0 | 4 | 2 | 0 | 0 | 31 |
| | Chamba WL | 20 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 3 | 1 | 3 | 0 | 0 | 32 |
| Chamba | Pangi | 20 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 23 | 0 | 0 | 7 | 0 | 0 | 35 |
| | Kinnaur | 40 | 13 | 5 | 0 | 6 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 34 | 1 | 1 | 9 | 0 | 0 | 74 |
| Kinnaur | Sarahan WL | 20 | 6 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 16 | 0 | 0 | 8 | 0 | 0 | 38 |
| | Kullu | 20 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 18 | 1 | 0 | 7 | 1 | 0 | 31 |
| | Kullu WL | 20 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 20 | 1 | 0 | 3 | 0 | 0 | 31 |
| Lahaul & | Spiri(W/L) | 20 | 7 | 7 | 1 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 10 | 1 | 3 | 3 | 0 | 0 | 39 |
| | Karsog | 20 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 2 | 1 | 0 | 0 | 37 |
| Mandi | Mandi | 20 | 8 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 1 | 4 | 0 | 0 | 30 |
| | Kotgarh | 20 | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 14 | 1 | 0 | 1 | 0 | 0 | 28 |
| | Rampur | 21 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 12 | 0 | 1 | 7 | 0 | 0 | 30 |
| Shimla | Theog | 20 | 2 | 6 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 21 | 1 | 0 | 2 | 0 | 0 | 37 |
| | Total of Territorial | 341 | 74 | 26 | 2 | 22 | 3 | 1 | 6 | 28 | 0 | 3 | 4 | 313 | 11 | 14 | 64 | 1 | | |

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

3.5 Primary Occupation (7)

| District | Division | No of Respondents Interviewed (a) | Total | | | | | | | | | | | | | | | | | |
|---|------------|-----------------------------------|--------------------|-------------------|-----------|-----------------------------------|-----------------------|------------------------------|------------------------|--------------------|----------------|------------------|---------------------|------------|------------------------|------------|---------------------|---------------------|----------|--------------|
| | | | Division Total | | | | | | | | | | | | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | Total |
| | | | Subsistence farmer | Commercial Farmer | Shepherd | Daily Wages Agricultural Labourer | Skilled Wage Labourer | Semi/Unskilled Wage Labourer | Service-Private Sector | Service-Government | Trade Business | Cottage Industry | Other self-Employed | Housewife | Retiring pensioner and | Unemployed | Student not earning | Retired not earning | Vendor | Total |
| Bilaspur | Bilaspur | 60 | 24 | 3 | 1 | 15 | 11 | 3 | 27 | 13 | 6 | 0 | 8 | 67 | 11 | 4 | 16 | 0 | 0 | 209 |
| | Bharmour | 20 | 6 | 3 | 0 | 3 | 1 | 0 | 1 | 9 | 1 | 1 | 0 | 21 | 2 | 8 | 12 | 0 | 0 | 68 |
| | Chamba WL | 20 | 4 | 1 | 3 | 1 | 3 | 0 | 3 | 4 | 0 | 0 | 0 | 25 | 4 | 7 | 4 | 0 | 0 | 59 |
| Chamba | Pangi | 20 | 5 | 1 | 0 | 11 | 0 | 1 | 2 | 3 | 1 | 0 | 0 | 24 | 1 | 0 | 10 | 0 | 0 | 59 |
| | Kinnaur | 40 | 37 | 16 | 0 | 14 | 5 | 0 | 4 | 10 | 2 | 0 | 0 | 35 | 3 | 4 | 18 | 0 | 0 | 148 |
| Kinnaur | Sarahan WL | 20 | 16 | 0 | 2 | 7 | 2 | 0 | 4 | 8 | 1 | 1 | 0 | 17 | 4 | 2 | 13 | 0 | 0 | 77 |
| | Kulu | 20 | 7 | 13 | 1 | 5 | 1 | 0 | 1 | 3 | 2 | 0 | 1 | 18 | 1 | 1 | 11 | 1 | 0 | 66 |
| | Kulu WL | 20 | 14 | 7 | 0 | 5 | 0 | 1 | 9 | 0 | 4 | 1 | 0 | 20 | 1 | 0 | 4 | 0 | 0 | 66 |
| Lahaul & Spiti (W/L) | | 20 | 12 | 15 | 1 | 2 | 0 | 0 | 1 | 15 | 0 | 0 | 0 | 10 | 2 | 10 | 11 | 0 | 0 | 79 |
| | Karsog | 20 | 27 | 6 | 0 | 1 | 2 | 0 | 1 | 5 | 0 | 0 | 1 | 20 | 1 | 7 | 5 | 0 | 0 | 76 |
| Mandi | Mandi | 20 | 17 | 5 | 0 | 1 | 4 | 2 | 3 | 1 | 1 | 0 | 0 | 15 | 0 | 2 | 11 | 0 | 0 | 62 |
| | Kotgarh | 20 | 13 | 7 | 0 | 2 | 2 | 1 | 10 | 3 | 2 | 1 | 1 | 14 | 7 | 1 | 4 | 0 | 0 | 68 |
| | Rampur | 21 | 15 | 5 | 0 | 5 | 2 | 0 | 0 | 2 | 3 | 2 | 2 | 12 | 0 | 4 | 11 | 0 | 0 | 63 |
| Shimla | Theog | 20 | 3 | 15 | 0 | 0 | 4 | 0 | 2 | 10 | 1 | 0 | 2 | 21 | 7 | 2 | 4 | 0 | 0 | 71 |
| Total of Territorial | | 341 | 200 | 97 | 8 | 72 | 37 | 8 | 68 | 86 | 24 | 6 | 15 | 319 | 44 | 52 | 134 | 1 | 0 | 1,171 |
| Kangra | Bainath | 3 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Kulu | Kulu | 11 | 24 | 5 | 2 | 0 | 1 | 1 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 44 |
| Mandi | Mandi | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Kangra | Palampur | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Kulu | Parvati | 10 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 26 |
| Kinnaur | Kinnaur | 21 | 23 | 2 | 0 | 5 | 3 | 0 | 1 | 8 | 0 | 0 | 0 | 13 | 1 | 9 | 13 | 0 | 1 | 79 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nagarh | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 1 | 2 | 0 | 12 |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 |
| Total of Graziers/Grassland User | | 59 | 83 | 7 | 4 | 5 | 4 | 2 | 3 | 15 | 3 | 0 | 0 | 24 | 1 | 11 | 22 | 3 | 2 | 189 |
| Grand Total | | 400 | 283 | 104 | 12 | 77 | 41 | 10 | 71 | 101 | 27 | 6 | 15 | 343 | 45 | 63 | 156 | 4 | 2 | 1,360 |

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation (8)

| District | Division | No of Respondents Interviewed (a) | % to the Division Total | | | | | | | | | | | | | | | | | |
|---|------------|-----------------------------------|-------------------------|-------------------|------------|-----------------------------------|-----------------------|------------------------------|------------------------|--------------------|----------------|------------------|---------------------|-------------|------------------------|------------|---------------------|---------------------|------------|--------------|
| | | | Division Total | | | | | | | | | | | | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | Total |
| | | | Subsistence farmer | Commercial Farmer | Shepherd | Daily Wages Agricultural Labourer | Skilled Wage Labourer | Semi/Unskilled Wage Labourer | Service-Private Sector | Service-Government | Trade Business | Cottage Industry | Other self-Employed | Housewife | Retiring pensioner and | Unemployed | Student not earning | Retired not earning | Vendor | Total |
| Bilaspur | Bilaspur | 60 | 11.5 | 1.4 | 0.5 | 7.2 | 5.3 | 1.4 | 12.9 | 6.2 | 2.9 | 0.0 | 3.8 | 32.1 | 5.3 | 1.9 | 7.7 | 0.0 | 0.0 | 100.0 |
| | Bharmour | 20 | 8.8 | 4.4 | 0.0 | 4.4 | 1.5 | 0.0 | 1.5 | 13.2 | 1.5 | 1.5 | 0.0 | 30.9 | 2.9 | 11.8 | 17.6 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | 6.8 | 1.7 | 5.1 | 1.7 | 5.1 | 0.0 | 5.1 | 6.8 | 0.0 | 0.0 | 0.0 | 42.4 | 6.8 | 11.9 | 6.8 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 8.5 | 1.7 | 0.0 | 18.6 | 0.0 | 1.7 | 3.4 | 5.1 | 1.7 | 0.0 | 0.0 | 40.7 | 1.7 | 0.0 | 16.9 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 25.0 | 10.8 | 0.0 | 9.5 | 3.4 | 0.0 | 2.7 | 6.8 | 1.4 | 0.0 | 0.0 | 23.6 | 2.0 | 2.7 | 12.2 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | 20 | 20.8 | 0.0 | 2.6 | 9.1 | 2.6 | 0.0 | 5.2 | 10.4 | 1.3 | 1.3 | 0.0 | 22.1 | 5.2 | 2.6 | 16.9 | 0.0 | 0.0 | 100.0 |
| | Kulu | 20 | 10.6 | 19.7 | 1.5 | 7.6 | 1.5 | 0.0 | 1.5 | 4.5 | 3.0 | 0.0 | 1.5 | 27.3 | 1.5 | 1.5 | 16.7 | 1.5 | 0.0 | 100.0 |
| | Kulu WL | 20 | 21.2 | 10.6 | 0.0 | 7.6 | 0.0 | 1.5 | 13.6 | 0.0 | 6.1 | 1.5 | 0.0 | 30.3 | 1.5 | 0.0 | 6.1 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti (W/L) | | 20 | 15.2 | 19.0 | 1.3 | 2.5 | 0.0 | 0.0 | 1.3 | 19.0 | 0.0 | 0.0 | 0.0 | 12.7 | 2.5 | 12.7 | 13.9 | 0.0 | 0.0 | 100.0 |
| | Karsog | 20 | 35.5 | 7.9 | 0.0 | 1.3 | 2.6 | 0.0 | 1.3 | 6.6 | 0.0 | 0.0 | 1.3 | 26.3 | 1.3 | 9.2 | 6.6 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 27.4 | 8.1 | 0.0 | 1.6 | 6.5 | 3.2 | 4.8 | 1.6 | 1.6 | 0.0 | 0.0 | 24.2 | 0.0 | 3.2 | 17.7 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | 19.1 | 10.3 | 0.0 | 2.9 | 2.9 | 1.5 | 14.7 | 4.4 | 2.9 | 1.5 | 1.5 | 20.6 | 10.3 | 1.5 | 5.9 | 0.0 | 0.0 | 100.0 |
| | Rampur | 21 | 23.8 | 7.9 | 0.0 | 7.9 | 3.2 | 0.0 | 0.0 | 3.2 | 4.8 | 3.2 | 3.2 | 19.0 | 0.0 | 6.3 | 17.5 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 4.2 | 21.1 | 0.0 | 0.0 | 5.6 | 0.0 | 2.8 | 14.1 | 1.4 | 0.0 | 2.8 | 29.6 | 9.9 | 2.8 | 5.6 | 0.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 17.1 | 8.3 | 0.7 | 6.1 | 3.2 | 0.7 | 5.8 | 7.3 | 2.0 | 0.5 | 1.3 | 27.2 | 3.8 | 4.4 | 11.4 | 0.1 | 0.0 | 100.0 |
| Kangra | Bainath | 3 | 64.3 | 0.0 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kulu | Kulu | 11 | 54.5 | 11.4 | 4.5 | 0.0 | 2.3 | 2.3 | 4.5 | 9.1 | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 4.5 | 2.3 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kulu | Parvati | 10 | 96.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 100.0 |
| Kinnaur | Kinnaur | 21 | 29.1 | 2.5 | 0.0 | 6.3 | 3.8 | 0.0 | 1.3 | 10.1 | 0.0 | 0.0 | 0.0 | 16.5 | 1.3 | 11.4 | 16.5 | 0.0 | 1.3 | 100.0 |
| Shimla | Theog | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.0 |
| Solan | Nagarh | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 58.3 | 0.0 | 8.3 | 8.3 | 16.7 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Baddi | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 75.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/Grassland User | | 59 | 43.9 | 3.7 | 2.1 | 2.6 | 2.1 | 1.1 | 1.6 | 7.9 | 1.6 | 0.0 | 0.0 | 12.7 | 0.5 | 5.8 | 11.6 | 1.6 | 1.1 | 100.0 |
| Grand Total | | 400 | 20.8 | 7.6 | 0.9 | 5.7 | 3.0 | 0.7 | 5.2 | 7.4 | 2.0 | 0.4 | 1.1 | 25.2 | 3.3 | 4.6 | 11.5 | 0.3 | 0.1 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

3.6 Economic Activities Other than Primary Occupation

(1)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|-----------------------------------|-----------|------------------|--------------|----------------------|------------|--------------------------------|----------|-----------------------|----------|-----------|------------------|--------------|----------------------|------------|--------------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|---|--|
| | | | Male | | | | | | | | | Female | | | | | | | | | | | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total | | | | | | |
| Weaving | Vegetable cultivating | Knitting | Tailoring | Backyard Poultry | Goat rearing | Mushroom cultivating | Small Shop | Selling milk and milk products | Weaving | Vegetable cultivating | Knitting | Tailoring | Backyard Poultry | Goat rearing | Mushroom cultivating | Small Shop | Selling milk and milk products | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | | 2 | | | | | 4 | | | 2 | 2 | 10 | | | 3 | 1 | | | 2 | | | 1 | 3 | 10 | | |
| | Bharmour | 20 | | | | | | | | | | 2 | 2 | 4 | | | | | | | | | | | 1 | 1 | 1 | |
| | Chamba WL | 20 | | | | | | | | | | | 0 | 0 | | | | | | | | | | | | 0 | 0 | |
| Chamba | Pangi | 20 | | 1 | | | | | 1 | | | 1 | 3 | 4 | | | 1 | | | | | | | | | 1 | 1 | |
| | Kinnaur | 40 | | 1 | | | | | 1 | | | | 2 | 2 | | | 1 | | | | | | | | | 3 | 3 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | 0 | 0 | | | | | | | | | | | | 0 | 0 | |
| | Kullu | 20 | | | | | | | 3 | | | | 3 | 1 | | | | | | | | | | | | 1 | 1 | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | 0 | 0 | | | | | | | | | | | | 0 | 0 | |
| Lahaul & Spiti(W/L) | | 20 | | | | 1 | | | | | | | 1 | 1 | | | | | | | | | | | | 0 | 0 | |
| | Karsog | 20 | | 6 | | | | | 1 | | | 2 | 9 | 1 | 4 | | | | | | | | | | | 2 | 7 | |
| Mandi | Mandi | 20 | | 6 | | | | | 1 | | 1 | 8 | 2 | 2 | | | | | | | 1 | | | | | 3 | 3 | |
| | Kotgarh | 20 | | | | | | | 1 | | | 1 | 2 | 2 | | | | | | | | | | | | 0 | 0 | |
| | Rampur | 21 | | 2 | | | | | | | | 2 | 2 | 2 | | | | | | | 1 | | 1 | | | 2 | 2 | |
| Shimla | Theog | 20 | | 3 | | | | | | | 1 | 4 | 4 | 3 | | | | | | | | | | | | 3 | 3 | |
| Total of Territorial | | 341 | 0 | 21 | 0 | 1 | 2 | 10 | 0 | 8 | 4 | 46 | 4 | 13 | 2 | 0 | 1 | 4 | 0 | 1 | 4 | 0 | 1 | 6 | 31 | 31 | | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland Users | | 59 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grand Total | | 400 | 0 | 21 | 0 | 1 | 2 | 10 | 0 | 8 | 4 | 46 | 4 | 13 | 2 | 0 | 1 | 4 | 0 | 1 | 4 | 0 | 1 | 6 | 31 | 31 | | |

Source: Livelihood Survey, JICA Study Team (2017)

3.6 Economic Activities Other than Primary Occupation

(2)

| District | Division | No of Respondents Interviewed (a) | Non JFM | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|-----------------------------------|-----------|------------------|--------------|----------------------|------------|--------------------------------|----------|-----------------------|-----------|-----------|------------------|--------------|----------------------|------------|--------------------------------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|----|
| | | | Male | | | | | | | | | Female | | | | | | | | | | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total | | | | | |
| Weaving | Vegetable cultivating | Knitting | Tailoring | Backyard Poultry | Goat rearing | Mushroom cultivating | Small Shop | Selling milk and milk products | Weaving | Vegetable cultivating | Knitting | Tailoring | Backyard Poultry | Goat rearing | Mushroom cultivating | Small Shop | Selling milk and milk products | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | 5 | | | | | | | | | | | | | | 1 |
| | Bharmour | 20 | | | 1 | | 1 | | 1 | | | 1 | 3 | | | | | | | | | | | | | | 0 |
| | Chamba WL | 20 | | 1 | | | | | | | | 3 | 4 | | | | | | | | | | | | | | 0 |
| Chamba | Pangi | 20 | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | 0 |
| | Kinnaur | 40 | | | | | | | | | | | 0 | 4 | | | | | 1 | | | | | | | 1 | 6 |
| Kinnaur | Sarahan WL | 20 | 1 | | 1 | | 1 | | 2 | | 1 | 1 | 8 | | | | | | | | | | | | | 1 | 1 |
| | Kullu | 20 | | | | | | | 1 | | | 1 | 2 | | | | | | | | | | | | | | 0 |
| Kullu | Kullu WL | 20 | | | | | | | 4 | | | 1 | 6 | 2 | | | | | | | | | | | 1 | 1 | 4 |
| Lahaul & Spiti(W/L) | | 20 | | | 1 | | | | | | | 1 | 2 | 2 | | | | | 1 | | | | | | | 1 | 4 |
| | Karsog | 20 | | | 3 | | | | 1 | | | 1 | 5 | | | | | | | | | | | | | 1 | 3 |
| Mandi | Mandi | 20 | 1 | | | | | | | | | 3 | 4 | 1 | | | | | | | 1 | | | | | 1 | 3 |
| | Kotgarh | 20 | | | 3 | | | | | | | 1 | 5 | | | | | | | | | | | | | 2 | 2 |
| | Rampur | 21 | | | | | | | 4 | | | 1 | 5 | | | | | | | | | | | | | 0 | 0 |
| Shimla | Theog | 20 | | | | | | | | | | | 0 | 1 | 2 | | | | | | | | | | | 3 | 3 |
| Total of Territorial | | 341 | 2 | 10 | 1 | 2 | 4 | 13 | 1 | 6 | 11 | 50 | 10 | 3 | 0 | 2 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 8 | 27 | 27 | |
| Kangra | Bajnath | 3 | | | | | | | | | | | 0 | | 2 | | | | | | | | | | | | 2 |
| Kullu | Kullu | 11 | | 5 | 2 | 2 | | | | | | 1 | 10 | 5 | | | | | | | | | | | | 2 | 8 |
| Mandi | Mandi | 3 | | | | | | | | | | | 0 | | 1 | | | | | | | | | | | 0 | 0 |
| Kangra | Palampur | 1 | | | | | | | 1 | | | | 1 | | | | | | | | | | | | | 0 | 0 |
| Kullu | Parvati | 10 | | 4 | | | | | | | | 9 | 5 | | | | | | | | | | | | | 7 | 7 |
| Kinnaur | Kinnaur | 21 | | 4 | 3 | | 2 | | | | | 2 | 11 | 4 | 1 | 4 | | | | | | | | | 1 | 12 | 12 |
| Shimla | Theog | 1 | | | | | | | | | | 3 | 3 | | | | | | | | | | | | | 2 | 2 |
| Solan | Nalagarh | 5 | | | | | | | | | | 2 | 2 | 1 | | | | | | | | | | | | 2 | 3 |
| Shimla | Kotgarh | 2 | | | | | | | | | | 2 | 2 | | | | | | | | | | | | | 1 | 1 |
| Solan | Baddi | 2 | | | | | | | | | | 2 | 2 | | | | | | | | | | | | | 2 | 2 |
| Total of Graziers/ Grassland Users | | 59 | 13 | 5 | 2 | 2 | 1 | 5 | 0 | 0 | 12 | 40 | 15 | 4 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 0 | 10 | 37 | 37 | |
| Grand Total | | 400 | 15 | 15 | 3 | 4 | 5 | 18 | 1 | 6 | 23 | 90 | 25 | 7 | 4 | 2 | 1 | 6 | 0 | 1 | 6 | 0 | 1 | 18 | 64 | 64 | |

Source: Livelihood Survey, JICA Study Team (2017)

3.6 Economic Activities Other than Primary Occupation
(3)

| District | Division | No of Respondents Interviewed (a) | Division Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------|-----------------------------------|----------------|-----------|----------|----------|----------|-----------|----------|-----------|-----------|------------|-----------|-----------|----------|----------|----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------------|-----------|-----------|-----------|------------|------------|
| | | | Male | | | | | | | | | | | | | | Female | | | | | | | | | | Division Total | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
| Bilaspur | Bilaspur | 60 | 0 | 2 | 1 | 1 | 1 | 5 | 0 | 3 | 2 | 15 | 0 | 3 | 1 | 0 | 0 | 3 | 0 | 1 | 3 | 11 | 0 | 5 | 2 | 1 | 1 | 8 | 0 | 4 | 5 | 26 |
| Bilaspur | Bharmour | 20 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 6 |
| Chamba | Chamba WL | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | |
| Chamba | Pangi | 20 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 5 | |
| Kinnaur | Kinnaur | 40 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 9 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 11 | |
| Kinnaur | Sarahan WL | 20 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 2 | 9 | |
| Kulhu | Kulhu | 20 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 1 | 6 | |
| Kulhu | Kulhu WL | 20 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 2 | 0 | 0 | 0 | 4 | 0 | 2 | 2 | 10 | |
| Lahaul & Spiti W/L | Spiti W/L | 20 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 2 | 1 | 0 | 2 | 0 | 0 | 1 | 7 | |
| Mandi | Karsog | 20 | 0 | 9 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 14 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 10 | 1 | 14 | 0 | 1 | 2 | 0 | 3 | 3 | 24 | |
| Mandi | Mandi | 20 | 1 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 12 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 6 | 2 | 8 | 0 | 0 | 3 | 0 | 0 | 5 | 18 | |
| Shimla | Kotgarh | 20 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 3 | 0 | 0 | 1 | 0 | 2 | 3 | 9 | |
| Shimla | Rampur | 21 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 1 | 5 | 0 | 1 | 9 | |
| Shimla | Theog | 20 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 10 | |
| Total of Territorial | | 341 | 2 | 31 | 1 | 3 | 6 | 23 | 1 | 14 | 15 | 96 | 14 | 16 | 2 | 2 | 2 | 6 | 0 | 2 | 14 | 58 | 16 | 47 | 3 | 5 | 8 | 29 | 1 | 16 | 29 | 154 |
| Kangra | Bajpath | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Kulhu | Kulhu | 11 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 10 | 3 | 2 | 0 | 0 | 0 | 0 | 3 | 18 | |
| Mandi | Mandi | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Kulhu | Parvati | 10 | 4 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 9 | 5 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 7 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Kinnaur | Kinnaur | 21 | 4 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 11 | 4 | 1 | 4 | 0 | 0 | 2 | 0 | 0 | 1 | 12 | 8 | 4 | 4 | 2 | 0 | 2 | 0 | 3 | 23 | |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 |
| Solan | Nalagarh | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| Total of Graziers/ Grassland Users | | 59 | 13 | 5 | 2 | 2 | 1 | 5 | 0 | 0 | 12 | 40 | 15 | 4 | 4 | 0 | 0 | 4 | 0 | 10 | 37 | 28 | 9 | 6 | 2 | 1 | 9 | 0 | 22 | 77 | | |
| Grand Total | | 400 | 15 | 36 | 3 | 5 | 7 | 28 | 1 | 14 | 27 | 136 | 29 | 20 | 6 | 2 | 2 | 14 | 0 | 24 | 95 | 44 | 56 | 9 | 7 | 9 | 38 | 1 | 16 | 51 | 231 | |

Source: Livelihood Survey, JICA Study Team (2017)

3.6 Economic Activities Other than Primary Occupation
(4)

| District | Division | No of Respondents Interviewed (a) | % to Division Total | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|------------|-----------------------------------|---------------------|------------|-------------|-----------------------|-------------|-------------|------------|-------------|------------|------------|------------|------------|------------------|------------|------------|--------------|------------|------------|----------------------|------------|------------|------------|------------|------------|--------------------------|------------|-------------|
| | | | Weaving | | | Vegetable Cultivation | | | Knitting | | | Tailoring | | | Backyard Poultry | | | Goat Rearing | | | Mushroom Cultivation | | | Small Shop | | | Selling of Milk and Milk | | |
| | | | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Bilaspur | Bilaspur | 60 | 0.0 | 0.0 | 0.0 | 7.7 | 11.5 | 19.2 | 3.8 | 50.0 | 7.7 | 3.8 | 0.0 | 3.8 | 3.8 | 0.0 | 3.8 | 19.2 | 11.5 | 0.3 | 0.0 | 0.0 | 0.0 | 11.5 | 11.5 | 0.2 | 7.7 | 7.7 | 19.2 |
| Bilaspur | Bharmour | 20 | 0.0 | 0.0 | 0.0 | 16.7 | 0.0 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 33.3 | 16.7 | 0.3 | 16.7 | 16.7 | 33.3 |
| Chamba | Chamba WL | 20 | 0.0 | 0.0 | 0.0 | 25.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 75.0 | 75.0 | 75.0 |
| Chamba | Pangi | 20 | 0.0 | 0.0 | 0.0 | 20.0 | 20.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | 20.0 | 20.0 |
| Kinnaur | Kinnaur | 40 | 0.0 | 54.5 | 54.5 | 9.1 | 0.0 | 9.1 | 0.0 | 100.0 | 9.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 | 9.1 | 9.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 9.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 |
| Kinnaur | Sarahan WL | 20 | 11.1 | 0.0 | 11.1 | 11.1 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 | 11.1 | 0.0 | 11.1 | 11.1 | 0.0 | 11.1 | 22.2 | 0.0 | 0.2 | 11.1 | 0.0 | 11.1 | 0.0 | 11.1 | 0.0 | 11.1 | 11.1 | 22.2 |
| Kulhu | Kulhu | 20 | 0.0 | 16.7 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 0.0 | 16.7 | 50.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 | 0.0 | 16.7 | 16.7 | 16.7 |
| Kulhu | Kulhu WL | 20 | 0.0 | 20.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 10.0 | 10.0 | 0.2 | 10.0 | 10.0 | 20.0 |
| Lahaul & Spiti W/L | Spiti W/L | 20 | 0.0 | 28.6 | 28.6 | 14.3 | 0.0 | 14.3 | 0.0 | 0.0 | 0.0 | 14.3 | 14.3 | 28.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 14.3 | 0.1 | 0.0 | 0.0 | 14.3 |
| Mandi | Karsog | 20 | 0.0 | 4.2 | 4.2 | 37.5 | 20.8 | 58.3 | 0.0 | 0.0 | 0.0 | 4.2 | 4.2 | 8.3 | 0.0 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.5 | 12.5 | 0.1 | 0.0 | 0.0 | 12.5 |
| Mandi | Mandi | 20 | 5.6 | 5.6 | 11.1 | 33.3 | 11.1 | 44.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.6 | 11.1 | 0.2 | 0.0 | 0.0 | 0.0 | 5.6 | 0.0 | 22.2 | 22.2 | 27.8 | 27.8 |
| Shimla | Kotgarh | 20 | 0.0 | 0.0 | 0.0 | 33.3 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.2 | 22.2 | 0.2 | 11.1 | 11.1 | 33.3 |
| Shimla | Rampur | 21 | 0.0 | 0.0 | 0.0 | 22.2 | 0.0 | 22.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 11.1 | 0.6 | 0.0 | 0.0 | 0.0 | 11.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| Shimla | Theog | 20 | 0.0 | 10.0 | 10.0 | 30.0 | 50.0 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| Total of Territorial | | 341 | 1.3 | 9.1 | 10.4 | 20.1 | 10.4 | 30.5 | 0.6 | 66.7 | 1.9 | 1.9 | 1.3 | 3.2 | 3.9 | 1.3 | 5.2 | 14.9 | 3.9 | 0.2 | 0.6 | 0.0 | 0.6 | 9.1 | 9.1 | 0.1 | 9.7 | 9.7 | 18.8 |
| Kangra | Bajpath | 3 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Kulhu | Kulhu | 11 | 27.8 | 27.8 | 55.6 | 11.1 | 5.6 | 16.7 | 11.1 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 0.0 | 5.6 | 5.6 | 16.7 | 16.7 |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Kangra | Palampur | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Kulhu | Parvati | 10 | 25.0 | 31.3 | 56.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0. | | | | | | | | | | | | | |

4. Wages

4.1 Number of Persons Engaged in Different Types of Work (Male) (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | Total | Non JFM | | | | | | | | | | | | Total |
|-------------------------------------|------------|-------------------------------|-------------|----------|--------------|--------------------|-------------------------|--------------|------------------------|----------------------------|--|----------|----------|----------|-------------|-----------|--------------|--------------------|-------------------------|--------------|------------------------|----------------------------|--|----------|----------|------------|----|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | Agriculture | Orchard | Construction | Forest Plantations | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Construction | UKN | Mix | ASHA | Agriculture | Orchard | Construction | Forest Plantations | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Construction | UKN | Mix | ASHA | | |
| Bilaspur | Bilaspur | 60 | 1 | | 20 | | | | | | | | | | 21 | | | 6 | | | | | | | | | 7 | |
| | Bharmour | 20 | 1 | | 6 | | | | | | | | | | 7 | | | 9 | | | | | | | | | 11 | |
| | Chamba WL | 20 | | | | | | | | | | | | | 0 | | | 8 | 2 | | | | | | | | 10 | |
| Chamba | Pangi | 20 | | | 2 | 1 | 2 | | | | | | | | 5 | | | 5 | | 6 | | | | | | | 11 | |
| | Kinnaur | 40 | | | 6 | | 1 | | | | | | | | 7 | | | 7 | | 1 | | 0 | 1 | | | | 9 | |
| | Sarahan WL | 20 | | | | | | | | | | | | | 0 | | | 10 | | 3 | | | | | | | 14 | |
| | Kullu | 20 | | 1 | 6 | | | | | | | | | | 7 | | 1 | 2 | | | | | | | | | 3 | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | 0 | | | 2 | | 1 | | | | | | | 3 | |
| Lahaul & Spiti | Spiti WL | 20 | | | | | | | | | | | | | 0 | | | 7 | | | | | | | | | 7 | |
| | Karsog | 20 | 2 | | 7 | | 1 | | | | | | | | 10 | | 1 | 1 | | 2 | | | | | | | 5 | |
| | Mandi | 20 | 1 | | 6 | | 2 | | | | | | | | 9 | | 1 | 6 | 1 | | | | | | | | 8 | |
| | Kotgarh | 20 | | 2 | 1 | | 3 | | | | | | | | 7 | | 1 | | | | | | | | | | 1 | |
| | Rampur | 21 | | 1 | 6 | | 3 | | | | | | | | 11 | | | 9 | | | | | | | | | 9 | |
| | Theog | 20 | 1 | | 3 | | | | | | | | | | 4 | | | 1 | | 1 | | | | | | | 2 | |
| Total of Territorial | | 341 | 6 | 4 | 63 | 1 | 12 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 88 | 4 | 3 | 73 | 3 | 14 | 0 | 2 | 0 | 1 | 0 | 100 | | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | 2 | |
| | Kullu | 11 | | | | | | | | | | | | | | | 1 | 2 | 5 | | 3 | | | | 1 | | 12 | |
| | Mandi | 2 | | | | | | | | | | | | | | | 1 | | 2 | | | | | | | | 3 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Kullu | 10 | | | | | | | | | | | | | | | 6 | | | | | | | | | | 10 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | 4 | | 7 | | 1 | | 1 | 1 | 1 | | 15 | |
| | Theog | 1 | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | 1 | | | 1 | | | | | | | 2 | |
| | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 2 | 14 | 1 | 9 | 1 | 1 | 1 | 1 | 1 | 45 | | |
| Grand Total | | 400 | 6 | 4 | 63 | 1 | 12 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 88 | 18 | 5 | 87 | 4 | 23 | 1 | 1 | 3 | 1 | 2 | 145 | | |

Source: Livelihood Survey, JICA Study Team (2017)

4.1 Number of Persons Engaged in Different Types of Work (Male) (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | | Total | % | | | | | | | | | | | | Total |
|-------------------------------------|------------|-------------------------------|-------------|----------|--------------|--------------------|-------------------------|--------------|------------------------|----------------------------|--|----------|----------|----------|-------------|-------------|--------------|--------------------|-------------------------|--------------|------------------------|----------------------------|--|------------|------------|------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | Agriculture | Orchard | Construction | Forest Plantations | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Construction | UKN | Mix | ASHA | Agriculture | Orchard | Construction | Forest Plantations | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Construction | UKN | Mix | ASHA | | |
| Bilaspur | Bilaspur | 60 | 1 | 0 | 26 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 28 | 3.6 | 0.0 | 92.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Bharmour | 20 | 1 | 2 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 5.6 | 11.1 | 83.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Chamba WL | 20 | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0.0 | 0.0 | 80.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Pangi | 20 | 0 | 0 | 7 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0.0 | 0.0 | 43.8 | 6.3 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kinnaur | 40 | 0 | 0 | 13 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | 0.0 | 0.0 | 81.3 | 0.0 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | 1 | 0 | 10 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 7.1 | 0.0 | 71.4 | 0.0 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu | 20 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0.0 | 20.0 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0.0 | 0.0 | 66.7 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti WL | 20 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Karsog | 20 | 3 | 0 | 8 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 15 | 20.0 | 0.0 | 53.3 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.7 | 0.0 | 100.0 | |
| | Mandi | 20 | 2 | 0 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 11.8 | 0.0 | 70.6 | 5.9 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | 20 | 1 | 2 | 1 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 12.5 | 25.0 | 12.5 | 0.0 | 37.5 | 0.0 | 0.0 | 12.5 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Rampur | 21 | 0 | 1 | 15 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | 0.0 | 5.0 | 75.0 | 0.0 | 15.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Theog | 20 | 1 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 16.7 | 0.0 | 66.7 | 0.0 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Territorial | | 341 | 10 | 7 | 136 | 4 | 26 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 188 | 5.3 | 3.7 | 72.3 | 2.1 | 13.8 | 0.0 | 0.0 | 1.6 | 0.5 | 0.5 | 0.0 | 100.0 | |
| Kangra | Bajnath | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu | 11 | 0 | 2 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | 8.3 | 16.7 | 41.7 | 0.0 | 25.0 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Mandi | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 33.3 | 0.0 | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | |
| | Kullu | 10 | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 60.0 | 0.0 | 0.0 | 0.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 4 | 0 | 7 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 15 | 26.7 | 0.0 | 46.7 | 6.7 | 0.0 | 0.0 | 6.7 | 6.7 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Theog | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | |
| | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | |
| Total of Graziers/ Grassland | | 59 | 14 | 2 | 14 | 1 | 9 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 45 | 31.1 | 4.4 | 31.1 | 2.2 | 20.0 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 0.0 | 100.0 | |
| Grand Total | | 400 | 24 | 9 | 150 | 5 | 35 | 1 | 1 | 4 | 2 | 2 | 0 | 0 | 233 | 10.3 | 3.9 | 64.4 | 2.1 | 15.0 | 0.4 | 0.4 | 1.7 | 0.9 | 0.9 | 0.0 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

4.2 Place of Work (Male)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | | Non JFM | | | | | | Total | | | | | |
|-------------------------------------|------------|-------------------------------|----------------|----------------|-----------------|------------------|-------------------------|-----------|----------------|----------------|-----------------|------------------|-------------------------|-----------|----------------|----------------|-----------------|------------------|-------------------------|----------|-----------|----------|------------|--|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | Total | 1 | 2 | 3 | 4 | 5 | 6 | Total | 1 | 2 | 3 | 4 | 5 | 6 | Total | | | | |
| | | | Within Village | Nearby Village | Distant Village | Nearby Town/city | in & around the village | UKN | Within Village | Nearby Village | Distant Village | Nearby Town/city | in & around the village | UKN | Within Village | Nearby Village | Distant Village | Nearby Town/city | in & around the village | UKN | | | | | | | |
| Bilaspur | Bilaspur | 60 | 15 | 5 | 1 | | 21 | 3 | 4 | | | | | | 7 | 18 | 9 | 1 | 0 | 0 | 0 | 28 | | | | | |
| | Bharmour | 20 | 6 | | | | 7 | 10 | | | | | | 1 | 11 | 16 | 0 | 0 | 0 | 2 | 0 | 18 | | | | | |
| | Chamba WL | 20 | | | | | 0 | 7 | 2 | | | | 2 | 11 | 7 | 2 | 0 | 0 | 2 | 0 | 11 | | | | | | |
| Chamba | Pang | 20 | 2 | 3 | | | 5 | 5 | 4 | 2 | | | | 11 | 7 | 7 | 2 | 0 | 0 | 0 | 16 | | | | | | |
| | Kinnaur | 40 | 6 | | | | 7 | 7 | 1 | | | | 1 | 9 | 13 | 1 | 0 | 0 | 2 | 0 | 16 | | | | | | |
| Kinnaur | Sarahan WL | 20 | | | | | 0 | 11 | 3 | | | | | 14 | 11 | 3 | 0 | 0 | 0 | 0 | 14 | | | | | | |
| | Kullu | 20 | 6 | | 1 | | 7 | 3 | | | | | | 3 | 9 | 0 | 1 | 0 | 0 | 0 | 10 | | | | | | |
| Kullu | Kullu WL | 20 | | | | | 0 | 1 | | | | 2 | | 3 | 1 | 0 | 0 | 0 | 2 | 0 | 3 | | | | | | |
| Lahaul & Spiti | Spiti WL | 20 | | | | | 0 | 4 | | 1 | | | | 5 | 4 | 0 | 1 | 0 | 0 | 0 | 5 | | | | | | |
| | Karsog | 20 | 4 | 2 | 3 | | 10 | 1 | 1 | | | 3 | | 5 | 5 | 3 | 3 | 0 | 4 | 0 | 15 | | | | | | |
| Mandi | Mandi | 20 | 8 | | | | 8 | 7 | | | | | 8 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 16 | | | | | | |
| | Kotgarh | 20 | 1 | 2 | 2 | | 7 | 1 | | | | 1 | | 11 | 11 | 2 | 2 | 0 | 3 | 0 | 8 | | | | | | |
| | Rampur | 21 | 9 | | | 1 | 11 | 9 | | | | | | 9 | 18 | 0 | 0 | 1 | 1 | 0 | 20 | | | | | | |
| | Theog | 20 | 3 | | 1 | | 4 | 2 | | | | | 2 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | | | | | | |
| Total of Territorial | | 341 | 60 | 12 | 8 | 1 | 6 | 0 | 87 | 70 | 15 | 3 | 0 | 11 | 0 | 99 | 130 | 27 | 11 | 1 | 17 | 0 | 186 | | | | |
| Kangra | Bajnath | 3 | | | | | 0 | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | | | | | | |
| Kullu | Kullu | 11 | | | | | 0 | 6 | 4 | 1 | | 1 | | 12 | 6 | 4 | 1 | 0 | 1 | 0 | 12 | | | | | | |
| Mandi | Mandi | 3 | | | | | 0 | 3 | | | | | | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | | | | | | |
| Kangra | Palampur | 1 | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Kullu | Parvati | 10 | | | | | 0 | 7 | 1 | 1 | | 1 | | 10 | 7 | 1 | 1 | 0 | 1 | 0 | 10 | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | 0 | 11 | 3 | | | 1 | | 15 | 11 | 3 | 0 | 0 | 1 | 0 | 15 | | | | | | |
| Shimla | Theog | 1 | | | | | 0 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | | | | |
| Solan | Nalagarh | 5 | | | | | 0 | 2 | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Solan | Baddi | 2 | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | 0 | 30 | 8 | 2 | 0 | 5 | 0 | 45 | 30 | 8 | 2 | 0 | 5 | 0 | 45 | | | | | | |
| Grand Total | | 400 | 60 | 12 | 8 | 1 | 6 | 0 | 87 | 100 | 23 | 5 | 0 | 16 | 0 | 144 | 160 | 35 | 13 | 1 | 22 | 0 | 231 | | | | |

Source: Livelihood Survey, JICA Study Team (2017)

4.3 Average Number of Days Worked (Male) (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | | Non JFM | | | | | | | | | | | | |
|-------------------------------------|------------|-------------------------------|-------------|-----------|---------------|------------------------------|-------------------------|--------------|-------------------------|-----------------------------|---|-----|-----|-----------|-------------|------------|---------------|------------------------------|-------------------------|--------------|-------------------------|-----------------------------|--|------------|------------|------------|----|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total |
| | | | Agriculture | Orchard | Constructi on | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Constructi on | Constructi on & Agriculture | Agricultur e and Orchard and Constructi on and Forest | UKN | Mix | ASHA | Agriculture | Orchard | Constructio n | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Constructio n | Constructio n & Agriculture | Agriculture and Orchard and Constructio n and Forest | UKN | Mix | ASHA | | |
| Bilaspur | Bilaspur | 60 | 150 | | 83 | | | | | | | | | 86 | | | 132 | | | | 20 | | | | | 116 | | |
| | Bharmour | 20 | 20 | | 87 | | | | | | | | | 77 | | | 91 | | | | | | | | | 75 | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | 6 | 150 | | | | | | | | | 87 | | |
| Chamba | Pang | 20 | | | 125 | 150 | 200 | | | | | | 160 | | | | 96 | 171 | | | | | | | | 137 | | |
| | Kinnaur | 40 | | | 69 | | 180 | | | | | | 85 | | 120 | | 33 | 150 | 200 | | 100 | | | | | 59 | | |
| | Sarahan WL | 20 | | | | | | | | | | | | | | | 55 | 150 | | | | | | | | 80 | | |
| | Kullu | 20 | | | 50 | | | | | | | | | 57 | | 30 | 52 | | | | | | | | | 45 | | |
| | Kullu WL | 20 | | | | | | | | | | | | | | | 175 | 250 | | | | | | | | 200 | | |
| Lahaul & Spiti | Spiti WL | 20 | | | | | | | | | | | | | | | 74 | | | | | | | | | 74 | | |
| | Karsog | 20 | 85 | | 67 | | 150 | | | | | | | 79 | | 20 | 40 | 105 | | | | | 220 | | | 98 | | |
| Mandi | Mandi | 20 | | | 62 | | 303 | | | | | | | 122 | | 120 | 145 | 30 | | | | | | | | 128 | | |
| | Kotgarh | 20 | | 115 | 100 | | 173 | | | 30 | | | | 126 | | 200 | | | | | | | | | | 200 | | |
| | Rampur | 21 | | 60 | 44 | | 52 | | | | | 200 | | 62 | | | 54 | | | | | | | | | 54 | | |
| | Theog | 20 | 13 | | 68 | | | | | | | | | 55 | | | 100 | 30 | | | | | | | | 65 | | |
| Total of Territorial | | 341 | 71 | 98 | 72 | 150 | 168 | | | 30 | 200 | | | 88 | | 115 | 14 | 81 | 110 | 155 | 60 | | 220 | | 93 | | | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | 310 | 240 | | | | | | 275 | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | 240 | | 250 | 70 | | 345 | | | 90 | | | | 779 | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | 30 | | | 100 | | | | | | | | | 177 | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | 172 | | | 288 | | | | | | 218 | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | 133 | 74 | 150 | | 80 | 80 | 200 | | | 104 | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | 60 | | | | | | | | | 60 | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | 120 | | 60 | | | | | | | 90 | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | | | | | 144 | 250 | 76 | 150 | 284 | 240 | 80 | 200 | 90 | 153 | | |
| Grand Total | | 400 | 71 | 98 | 72 | 150 | 168 | | | 30 | 200 | | | 88 | | 137 | 73 | 80 | 120 | 205 | 240 | 80 | 67 | 200 | 155 | 111 | | |

Source: Livelihood Survey, JICA Study Team (2017)

4.3 Average Number of Days Worked (Male) (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | | Total |
|-------------------------------------|------------|-------------------------------|-------------|------------|--------------|------------------------------|-------------------------|--------------|------------------------|----------------------------|------------------------------------|------------|-----|------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Forest | UKN | Mix | ASHA | |
| Bilaspur | Bilaspur | 60 | 150 | | 94 | | | | | | | | | | 93 |
| | Bharmour | 20 | 20 | 6 | 89 | | | | | 20 | | | | | 76 |
| | Chamba WL | 20 | | | 71 | 150 | | | | | | | | | 87 |
| Chamba | Pangi | 20 | | | 104 | 150 | 178 | | | | | | | | 144 |
| | Kinnaur | 40 | | | 49 | 190 | | | | 100 | | | | | 70 |
| Kinnaur | Sarahan WL | 20 | 120 | | 55 | 150 | | | | | | | | | 80 |
| | Kullu | 20 | | 65 | 50 | | | | | | | | | | 53 |
| Kullu | Kullu WL | 20 | | | 175 | | 250 | | | | | | | | 200 |
| Lahul & Spiti | Spiti WL | 20 | | | 74 | | | | | | | | | | 74 |
| | Karsog | 20 | 63 | | 63 | 120 | | | | | | 220 | | | 85 |
| Mandi | Mandi | 20 | 120 | | 104 | 30 | 303 | | | | | | | | 125 |
| | Kotgarh | 20 | 200 | 115 | 100 | 173 | | | 30 | | | | | | 135 |
| | Rampur | 21 | | 60 | 50 | | 52 | | | | 200 | | | | 58 |
| Shimla | Theog | 20 | 13 | | 76 | 30 | | | | | | | | | 58 |
| Total of Territorial | | 341 | 90 | 62 | 77 | 120 | 161 | | 50 | 200 | 220 | | | | 91 |
| Kangra | Bajnath | 3 | | | | | 310 | 240 | | | | | | | 275 |
| Kullu | Kullu | 11 | 240 | 250 | 70 | | 345 | | | | 90 | | | | 179 |
| Mandi | Mandi | 3 | 30 | | 100 | | | | | | | | | | 77 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 172 | | | | 288 | | | | | | | | 218 |
| Kinnaur | Kinnaur | 21 | 133 | | 74 | 150 | | | 80 | 80 | 200 | | | | 104 |
| Shimla | Theog | 1 | 60 | | | | | | | | | | | | 60 |
| Solan | Nalagarh | 5 | 120 | | | | 60 | | | | | | | | 90 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 144 | 250 | 76 | 150 | 284 | 240 | 80 | 80 | 200 | 90 | | | 153 |
| Grand Total | | 400 | 123 | 85 | 77 | 126 | 192 | 240 | 80 | 58 | 200 | 155 | | | 103 |

Source: Livelihood Survey, JICA Study Team (2017)

4.4 Average Wages by Work Type (Male) (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | Non JFM | | | | | | | | | | | | Total | |
|-------------------------------------|------------|-------------------------------|-------------|------------|--------------|------------------------------|-------------------------|--------------|------------------------|----------------------------|------------------------------------|-----|-----|------------|-------------|------------|--------------|------------------------------|-------------------------|--------------|------------------------|----------------------------|------------------------------------|------------|-----|------|------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | |
| | | | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Forest | UKN | Mix | ASHA | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Forest | UKN | Mix | ASHA | | |
| Bilaspur | Bilaspur | 60 | 175 | | 209 | | | | | | | | | | 207 | | | 206 | | | | | | | | | | 219 |
| | Bharmour | 20 | 300 | | 228 | | | | | | | | | | 238 | | 300 | 246 | | | | | | | | | | 256 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | 245 | 300 | | | | | | | | | 256 |
| Chamba | Pangi | 20 | | | 262 | 250 | 300 | | | | | | | | 275 | | | 238 | | 300 | | | | | | | | 272 |
| | Kinnaur | 40 | | | 230 | | 400 | | | | | | | | 259 | | | 220 | | 300 | | 500 | | | | | | 260 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | 300 | | | 259 | | 367 | | | | | | | | 285 |
| | Kullu | 20 | | 400 | 278 | | | | | | | | | | | 400 | | 156 | | | | | | | | | | 237 |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | 300 | | 500 | | | | | | | | 367 |
| Lahul & Spiti | Spiti WL | 20 | | | | | | | | | | | | | | | | 230 | | | | | | | | | | 230 |
| | Karsog | 20 | 340 | | 273 | | 350 | | | | | | | | 294 | 150 | | 400 | | 500 | | | | | | | | 470 |
| Mandi | Mandi | 20 | | | 171 | | 230 | | | | | | | | 186 | 300 | | 232 | 200 | | | | | 800 | | | | 236 |
| | Kotgarh | 20 | | 300 | 300 | | 367 | | | 175 | | | | | 311 | 250 | | | | | | | | | | | | 250 |
| | Rampur | 21 | | 200 | 195 | | 267 | | | | | | | | 225 | | | 172 | | | | | | | | | | 172 |
| Shimla | Theog | 20 | 180 | | 157 | | | | | | | | | | 163 | | | 170 | | 400 | | | | | | | | 285 |
| Total of Territorial | | 341 | 267 | 300 | 222 | 250 | 309 | | | 175 | 300 | | | 241 | 250 | 333 | 229 | 267 | 364 | | 400 | | 800 | | | | 261 | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | 180 | | 174 | | 285 | | | | | | | | 206 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | 175 | | | | | | | | | | 177 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | 413 | | | | 175 | | | | | | | | | 311 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | 258 | | | 218 | | 250 | | | 250 | 250 | | | | 237 |
| Shimla | Theog | 1 | | | | | | | | | | | | | 300 | | | | | | | | | | | | | 300 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | 300 | | | | 300 | | | | | | | | | 300 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | | | 315 | | 196 | 250 | 233 | | 250 | 250 | 250 | 800 | | | | 246 |
| Grand Total | | 400 | | | | | | | | | | | | | 297 | 333 | 224 | 263 | 325 | | 250 | 350 | 250 | 800 | | | 259 | |

Source: Livelihood Survey, JICA Study Team (2017)

4.4 Average Wages by Work Type (Male) (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | | Total | | | | | | | | |
|------------------------------------|------------|-------------------------------|------------------|--------------|-------------------|-----------------------------------|------------------------------|-------------------|-----------------------------|---------------------------------|--|------------|------------|------------|----------|----------|----------|----------|----------|----------|----------|------------|------------|
| | | | 1 Agriculture | 2 Orchard | 3 Construction | 4 Forest Plantation Activities | 5 Agriculture and Orchard | 6 Goat Rearing | 7 Orchard & Construction | 8 Construction & Agriculture | 9 Agriculture and Orchard and Construction and Forest | 10 UKN | 11 Mix | 12 ASHA | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 175 | | 208 | | | | | | | | | | | | | | | | | | 210 |
| | Bharmour | 20 | 300 | | 238 | | | | | | | | | | | | | | | | | | 249 |
| | Chamba WL | 20 | | 300 | 245 | | 300 | | | | | | | | | | | | | | | | 256 |
| Chamba | Pangi | 20 | | | 245 | | 250 | | 300 | | | | | | | | | | | | | | 273 |
| | Kinnaur | 40 | | | 224 | | 350 | | | | 500 | | | | | | | | | | | | 259 |
| Kinnaur | Sarahan WL | 20 | 300 | | 259 | | 367 | | | | | | | | | | | | | | | | 285 |
| | Kullu | 20 | | 400 | 248 | | | | | | | | | | | | | | | | | | 278 |
| Kullu | Kullu WL | 20 | | | 300 | | | 500 | | | | | | | | | | | | | | | 367 |
| Lahaul & Spiti | Spiti W/L | 20 | | | 230 | | | | | | | | | | | | | | | | | | 230 |
| | Karsog | 20 | 276 | | 289 | | 450 | | | | | | | | | 800 | | | | | | | 352 |
| Mandi | Mandi | 20 | 300 | | 201 | | 230 | | | | | | | | | | | | | | | | 211 |
| | Kotgarh | 20 | 250 | 300 | 300 | | 367 | | | | 175 | | | | | | | | | | | | 303 |
| | Rampur | 21 | 200 | | 181 | | 267 | | | | | | 300 | | | | | | | | | | 201 |
| Shimla | Theog | 20 | 180 | | 160 | | 490 | | | | | | | | | | | | | | | | 203 |
| Total of Territorial | | 341 | 259 | 314 | 226 | 263 | 339 | 0 | 0 | 325 | 300 | 800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 253 | |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | 174 | | 285 | | | | | | | | | | | | | | | | 206 |
| Mandi | Mandi | 3 | 180 | | 175 | | | | | | | | | | | | | | | | | | 177 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 413 | | | | 175 | | | | | | | | | | | | | | | | 311 |
| Kinnaur | Kinnaur | 21 | 258 | | 218 | | 250 | | | 250 | 250 | 250 | | | | | | | | | | | 237 |
| Shimla | Theog | 1 | 300 | | | | | | | | | | | | | | | | | | | | 300 |
| Solan | Nalagarh | 5 | 300 | | | | 300 | | | | | | | | | | | | | | | | 300 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/Grassland | | 59 | 315 | | 196 | 250 | 233 | | | 250 | 250 | 250 | | | | | | | | | | | 246 |
| Grand Total | | 400 | 290 | 314 | 223 | 260 | 319 | | | 250 | 306 | 275 | 800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 252 |

Source: Livelihood Survey, JICA Study Team (2017)

4.5 Average Total Wages Earned (Male) (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | Non JFM | | | | | | | | | | | | Total |
|------------------------------------|------------|-------------------------------|------------------|---------------|-------------------|-----------------------------------|------------------------------|-------------------|-----------------------------|---------------------------------|--|-----------|-----------|---------------|------------------|--------------|-------------------|-----------------------------------|------------------------------|-------------------|-----------------------------|---------------------------------|--|----------------|-----------|---------------|--------|
| | | | 1 Agriculture | 2 Orchard | 3 Construction | 4 Forest Plantation Activities | 5 Agriculture and Orchard | 6 Goat Rearing | 7 Orchard & Construction | 8 Construction & Agriculture | 9 Agriculture and Orchard and Construction and Forest | 10 UKN | 11 Mix | 12 ASHA | 1 Agriculture | 2 Orchard | 3 Construction | 4 Forest Plantation Activities | 5 Agriculture and Orchard | 6 Goat Rearing | 7 Orchard & Construction | 8 Construction & Agriculture | 9 Agriculture and Orchard and Construction and Forest | 10 UKN | 11 Mix | 12 ASHA | |
| Bilaspur | Bilaspur | 60 | 26,250 | | 20,340 | | | | | | | | | 20,621 | | | 29,967 | | | | | | | | | | 26,400 |
| | Bharmour | 20 | 6,000 | | 20,271 | | | | | | | | | 18,232 | | | 24,364 | | | | | | | | | | 20,261 |
| | Chamba WL | 20 | | | | | | | | | | | | | | 1,800 | 19,239 | 45,000 | | | | | | | | | 24,392 |
| Chamba | Pangi | 20 | | | 33,700 | 37,500 | 60,000 | | | | | | | 44,980 | | | 22,618 | | 51,200 | | | | | | | 38,208 | |
| | Kinnaur | 40 | | | 16,771 | | 7,200 | | | | | | | 15,176 | | | 7,358 | | 60,000 | | | 50,000 | | | | 17,945 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | 21,681 | | 50,833 | | | | | | | 28,951 | |
| | Kullu | 20 | | 40,000 | 16,502 | | | | | | | | | 19,859 | | 36,000 | 12,000 | 6,460 | | | | | | | | 8,307 | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | 52,500 | | 125,000 | | | | | | | 76,667 | |
| Lahaul & Spiti | Spiti W/L | 20 | | | | | | | | | | | | | | | 19,285 | | | | | | | | | 19,285 | |
| | Karsog | 20 | 39,290 | | 21,089 | | 52,500 | | | | | | | 27,870 | 3,000 | | 16,000 | | 65,000 | | | | 176,000 | | | 65,000 | |
| Mandi | Mandi | 20 | | | 10,652 | | 68,325 | | | | | | | 25,070 | 36,000 | | 36,300 | | 6,000 | | | | | | | 32,475 | |
| | Kotgarh | 20 | | 26,000 | 30,000 | | 62,667 | | | 5,250 | | | | 39,321 | 50,000 | | | | | | | | | | | 50,000 | |
| | Rampur | 21 | | 12,000 | 8,455 | | 14,167 | | | | | | | 15,021 | | | 9,992 | | | | | | | | | 9,992 | |
| Shimla | Theog | 20 | 2,340 | | 10,283 | | | | | | | | | 8,298 | | | 17,000 | | 15,000 | | | | | | | 16,000 | |
| Total of Territorial | | 341 | 22,634 | 26,000 | 17,771 | 37,500 | 45,571 | | | 5,250 | 60,000 | | | 22,890 | 31,250 | 5,200 | 20,978 | 32,000 | 56,407 | | | 27,500 | 176,000 | 0 | 0 | 28,028 | |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | 75,000 | 35,000 | | | | | | | 55,000 | |
| Kullu | Kullu | 11 | | | | | | | | | | | | 6,000 | | 12,368 | | 115,500 | | | | | 30,000 | | | 36,338 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | 5,400 | | 17,500 | | | | | | | | | | 13,467 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | 48,900 | | | | 41,844 | | | | | | | | 46,078 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | 32,850 | | 16,050 | 37,500 | | | 20,000 | 20,000 | 50,000 | | | | 24,750 | |
| Shimla | Theog | 1 | | | | | | | | | | | | 18,000 | | | | | | | | | | | | 18,000 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | 36,000 | | | | 18,000 | | | | | | | | 27,000 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/Grassland | | 59 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grand Total | | 400 | 22,634 | 26,000 | 17,771 | 37,500 | 45,571 | | | 5,250 | 60,000 | | | 22,890 | 34,178 | 5,200 | 19,984 | 33,375 | 58,231 | 35,000 | 20,000 | 25,000 | 50,000 | 103,000 | 0 | 32,935 | |

Source: Livelihood Survey, JICA Study Team (2017)

4.5 Average Total Wages Earned (Male) (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | | Total |
|-------------------------------------|------------|-------------------------------|---------------|---------------|---------------|------------------------------|-------------------------|---------------|------------------------|----------------------------|------------------------------------|----------------|-----|------|---------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Forest | UKN | Mix | ASHA | |
| Bilaspur | Bilaspur | 60 | 26,250 | | 22,562 | | | | | | | | | | 22,066 |
| | Bharmour | 20 | 6,000 | 1,800 | 22,727 | | | | | | | | | | 19,472 |
| | Chamba WL | 20 | | | 19,239 | 45,000 | | | | | | | | | 24,392 |
| Chamba | Pangi | 20 | | | 25,784 | 37,500 | 53,400 | | | | | | | | 40,324 |
| | Kinnaur | 40 | | | 11,280 | | 33,600 | | | 50,000 | | | | | 16,837 |
| Kinnaur | Sarahan WL | 20 | 36,000 | | 21,681 | | 50,833 | | | | | | | | 28,951 |
| | Kullu | 20 | | 26,000 | 13,991 | | | | | | | | | | 16,393 |
| Kullu | Kullu WL | 20 | | | 52,500 | | 125,000 | | | | | | | | 76,667 |
| Lahaul & Spiti | Spiti W/L | 20 | | | 19,285 | | | | | | | | | | 19,285 |
| | Karsog | 20 | 27,193 | | 20,453 | | 60,833 | | | | | 176,000 | | | 40,247 |
| Mandi | Mandi | 20 | 36,000 | | 23,476 | 6,000 | 68,325 | | | | | | | | 28,773 |
| | Kotgarh | 20 | 50,000 | 26,000 | 30,000 | | 62,667 | | | 5,250 | | | | | 40,656 |
| | Rampur | 21 | | 12,000 | 9,377 | | 14,167 | | | | 60,000 | | | | 12,758 |
| | Theog | 20 | 2,340 | | 11,963 | | 15,000 | | | | | | | | 10,865 |
| Total of Territorial | | 341 | 26,463 | 17,086 | 19,483 | 33,375 | 51,406 | | | 20,083 | 60,000 | 176,000 | | | 25,627 |
| Kangra | Bajjnath | 3 | | | | | 75,000 | 35,000 | | | | | | | 55,000 |
| Kullu | Kullu | 11 | 6,000 | | 12,368 | | 115,500 | | | | | 30,000 | | | 36,538 |
| Mandi | Mandi | 3 | 5,400 | | 17,500 | | | | | | | | | | 13,467 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 48,900 | | | | 41,844 | | | | | | | | 46,078 |
| Kinnaur | Kinnaur | 21 | 32,850 | | 16,050 | 37,500 | | | 20,000 | 20,000 | 50,000 | | | | 24,750 |
| Shimla | Theog | 1 | 18,000 | | | | | | | | | | | | 18,000 |
| Solan | Nalagarh | 5 | 36,000 | | | | 18,000 | | | | | | | | 27,000 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 35,014 | | 14,942 | 37,500 | 61,422 | 35,000 | 20,000 | 20,000 | 50,000 | 30,000 | | | 32,935 |
| Grand Total | | 400 | 31,668 | 17,086 | 19,051 | 34,200 | 53,763 | 35,000 | 20,000 | 20,063 | 55,000 | 103,000 | | | 26,985 |

Source: Livelihood Survey, JICA Study Team (2017)

4.6 Number of Persons Engaged in Different Types of Work (Female) (1)

| District | Division | No of Respondents | JFM | | | | | | | | | | | | Non JFM | | | | | | | | | | | | Total |
|-------------------------------------|------------|-------------------|-------------|----------|--------------|------------|---------------|--------------|-------------------|-----------------|----------|----------|----------|-------------|----------|--------------|------------|---------------|--------------|-------------------|-----------------|----------|----------|----------|------------|-----------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | Agriculture | Orchard | Construction | Plantation | Aulture and O | Goat Rearing | rd & Construction | & Agrard and Co | UKN | Mix | ASHA | Agriculture | Orchard | Construction | Plantation | Aulture and O | Goat Rearing | rd & Construction | & Agrard and Co | UKN | Mix | ASHA | Total | | |
| Bilaspur | Bilaspur | 60 | | | 5 | | | | | | | | | | | 6 | | | | | | | | | 6 | | |
| | Bharmour | 20 | | | 3 | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Chamba WL | 20 | | | | | | | | | | | | | | 12 | | | | | | | | | | 12 | |
| Chamba | Pangi | 20 | | | 8 | | | | | | | | | | | 9 | | | | | | | | | | 9 | |
| | Kinnaur | 40 | 3 | | 9 | | | 1 | | | | | | | | 14 | | | | | | | | | | 12 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kullu | 20 | | | | | | | | | | | | | | 11 | | | | | | | | | | 12 | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | 2 | | | | | | | | | | 2 | |
| Lahaul & Spiti | Spiti W/L | 20 | | | | | | | | | | | | | | 7 | | | | | | | | | | 7 | |
| | Karsog | 20 | 1 | | 3 | | | 2 | | | | | | | | 4 | | | | | | | | | | 6 | |
| Mandi | Mandi | 20 | | | 4 | | | | | | | | | | | 7 | | | | | | | | | | 7 | |
| | Kotgarh | 20 | | | | | | | | | | | 1 | | | 7 | | | | | | | | | | 7 | |
| | Rampur | 21 | 2 | | 7 | | | | | | | | | | | 3 | | | 2 | | | | | | | 0 | |
| | Theog | 20 | | | 5 | | | | | | | | | | | 4 | | | | | | | | | | 5 | |
| Total of Territorial | | 341 | 6 | 0 | 44 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 55 | 2 | 2 | 84 | 0 | 2 | 0 | 0 | 0 | 0 | 90 | |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | | | 2 | | | | | | | | | | 4 | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | 4 | | | 3 | | | | 1 | | | 9 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | 1 | | | | | | | | | | 2 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | 4 | | | 3 | | | | | | | 8 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | 1 | | | | | | | | | | 0 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | 10 | | | 1 | | | | | 2 | | 15 | |
| Shimla | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | | | | 9 | 0 | 18 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 38 | |
| Grand Total | | 400 | 6 | 0 | 44 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 55 | 11 | 2 | 102 | 0 | 9 | 0 | 1 | 0 | 128 | | |

Source: Livelihood Survey, JICA Study Team (2017)

4.6 Number of Persons Engaged in Different Types of Work (Female) (2)

| District | Division | No of Respondents | Total | | | | | | | | | | | | Total | |
|-------------------------------------|------------|-------------------|------------------|--------------|-------------------|-----------------|---------------------|--------------------|---------------------|------------------------|------------------|-----------|-----------|------------|----------|------------|
| | | | 1 Agriculture | 2 Orchard | 3 Construction | 4 Plantation | 5 Culture and Or | 6 Joint Rearing | 7 & Construction | 8 Construction & Ag | 9 gard and Co | 10 UKN | 11 Mix | 12 ASHA | | |
| Bilaspur | Bilaspur | 60 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | Bharmour | 20 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | Chamba WL | 20 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Chamba | Pangi | 20 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| | Kinnaur | 40 | 3 | 0 | 21 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 26 |
| | Sarahan WL | 20 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| | Kullu | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | Kullu WL | 20 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| | Karsog | 20 | 1 | 0 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Mandi | Mandi | 20 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | Kotgarh | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| | Rampur | 21 | 2 | 0 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| | Theog | 20 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total of Territorial | | 341 | 8 | 2 | 128 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 145 |
| Kangra | Bajjnath | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Kullu | Kullu | 11 | 1 | 0 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 |
| Mandi | Mandi | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | 4 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Kinnaur | Kinnaur | 21 | 1 | 0 | 10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 15 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/ Grassland | | 59 | 9 | 0 | 18 | 0 | 7 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 38 |
| Grand Total | | 400 | 17 | 2 | 146 | 0 | 12 | 0 | 1 | 0 | 0 | 2 | 3 | 0 | 0 | 183 |

Source: Livelihood Survey, JICA Study Team (2017)

4.7 Place of Work (Female)

| District | Division | No of Respondents Interviewed | JFM | | | | | | Non JFM | | | | | | Total | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-------------------------------|----------------|----------------|-----------------|------------------|-------------------------|----------|----------------|----------------|-----------------|------------------|-------------------------|-----------|----------------|----------------|-----------------|------------------|-------------------------|----------|----------|------------|------------|-----------|-----------|----------|----------|----------|------------|----|----|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | Total | | | | |
| | | | Within Village | Nearby Village | Distant Village | Nearby Town/city | in & around the village | UKN | Within Village | Nearby Village | Distant Village | Nearby Town/city | in & around the village | UKN | Within Village | Nearby Village | Distant Village | Nearby Town/city | in & around the village | UKN | Total | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 2 | 2 | 1 | | | | | | | 5 | 3 | 2 | 1 | | | | | | | | | 6 | 5 | 4 | 2 | 0 | 0 | 0 | 11 |
| | Bharmour | 20 | 3 | | | | | | | | | 3 | | | | | | | | | | | | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| | Chamba WL | 20 | | | | | | | | | | 0 | 12 | | | | | | | | | | 12 | 12 | 0 | 0 | 0 | 0 | 0 | 12 | |
| Chamba | Pangi | 20 | 8 | | | | | | | | | 8 | 9 | | | | | | | | | | 9 | 17 | 0 | 0 | 0 | 0 | 0 | 17 | |
| | Kinnaur | 40 | 11 | | 3 | | | | | | | 14 | 10 | 1 | 1 | | | | | | | | 12 | 21 | 1 | 4 | 0 | 0 | 0 | 26 | |
| | Sarahan WL | 20 | | | | | | | | | | 0 | 10 | 2 | | | | | | | | | 12 | 10 | 2 | 0 | 0 | 0 | 0 | 12 | |
| | Kullu | 20 | | | | | | | | | | 0 | 2 | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | Kullu WL | 20 | | | | | | | | | | 0 | 5 | 2 | | | | | | | | | 7 | 5 | 2 | 0 | 0 | 0 | 0 | 7 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | 0 | 4 | | | | | | | | | | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | |
| | Karsog | 20 | 4 | 2 | | | | | | | | 6 | | | | | | | | | | | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 6 | |
| Mandi | Mandi | 20 | 4 | | | | | | | | | 4 | 7 | | | | | | | | | | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 11 | |
| | Kotgarh | 20 | 1 | | | | | | | | | 1 | 5 | 2 | | | | | | | | | 7 | 6 | 2 | 0 | 0 | 0 | 0 | 8 | |
| | Rampur | 21 | 8 | | | | | | | | | 8 | 5 | | | | | | | | | | 5 | 13 | 0 | 0 | 0 | 0 | 0 | 13 | |
| | Theog | 20 | 5 | | | | | | | | | 5 | 4 | 1 | | | | | | | | | 5 | 9 | 1 | 0 | 0 | 0 | 0 | 10 | |
| Total of Territorial | | 341 | 46 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 76 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | 122 | 14 | 6 | 0 | 0 | 0 | 142 | | |
| Kangra | Bajjnath | 3 | | | | | | | | | | 0 | 2 | 1 | 1 | | | | | | | | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 4 | |
| Kullu | Kullu | 11 | | | | | | | | | | 0 | 5 | 1 | 2 | | | | | | | | 9 | 5 | 1 | 2 | 0 | 1 | 0 | 9 | |
| Mandi | Mandi | 3 | | | | | | | | | | 0 | 2 | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Kangra | Palampur | 1 | | | | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Parvati | 10 | | | | | | | | | | 0 | 5 | 1 | 1 | | | | | | | | 8 | 5 | 1 | 1 | 0 | 1 | 0 | 8 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | 0 | 11 | 3 | | | | | | | | | 15 | 11 | 3 | 0 | 0 | 1 | 0 | 15 | |
| Shimla | Theog | 1 | | | | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | 0 | 0 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | 0 | 0 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Baddi | 2 | | | | | | | | | | 0 | 0 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | 0 | 25 | 6 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 38 | 25 | 6 | 4 | 0 | 3 | 0 | 38 | | |
| Grand Total | | 400 | 46 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 101 | 16 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 126 | 147 | 20 | 10 | 0 | 3 | 0 | 180 | | |

Source: Livelihood Survey, JICA Study Team (2017)

4.8 Average Number of Days Worked (Female) (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | Total | Non JFM | | | | | | | | | | | | Total |
|----------------|------------------------------|-------------------------------|-------------|---------|--------------|------------------------------|-------------------------|--------------|------------------------|----------------------------|---|-----|-----|------|-------------|---------|--------------|------------------------------|-------------------------|--------------|------------------------|----------------------------|---|-----|-----|------|-----|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Construction and Forest | UKN | Mix | ASHA | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Construction and Forest | UKN | Mix | ASHA | | |
| Bilaspur | Bilaspur | 60 | | | 70 | | | | | | | | | | | | | | | | | | | | | | 38 | |
| | Bharmour | 20 | | | 40 | | | | | | | | | | | | | | | | | | | | | | 40 | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 41 | |
| Chamba | Pangj | 20 | | | 94 | | | | | | | | | | | | | | | | | | | | | | 88 | |
| | Kinnaur | 40 | 12 | | 39 | | | 14 | | | | | | 14 | | | | | | | | | | | | | 30 | |
| | Sarahan WL | 20 | | | | | | | | | | | | | 120 | | | | | | | | | | | | 55 | |
| | Kullu | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 40 | |
| | Kullu WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | 55 | |
| Kullu | Sprit/W/L | 20 | | | | | | | | | | | | | | | 240 | | | | | | | | | | 47 | |
| Lahaul & Spiti | Karsog | 20 | 14 | | 31 | | | 18 | | | | | | | | | | | | | | | | | | | 18 | |
| | Mandi | 20 | | | 46 | | | | | | | | | | | | | | | | | | | | | | 20 | |
| | Kotgarh | 20 | | | | | | | | | | | | 30 | | | | | | | | | | | | | 71 | |
| | Rampur | 21 | 150 | | 56 | | | | | | | | | | | | | | | | | | | | | | 30 | |
| | Shimla | 20 | | | 54 | | | | | | | | | | | | | | | | | | | | | | 77 | |
| | Theog | 20 | | | | | | | | | | | | | | | | | 53 | | 260 | | | | | | 30 | |
| | Total of Territorial | 341 | 59 | | 57 | | | 16 | | | | | | 14 | 30 | | | 54 | 35 | | 78 | 240 | 49 | | 260 | | 54 | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 35 | |
| | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | 78 | |
| | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 240 | |
| | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 100 | |
| Kangra | Parvati | 10 | | | | | | | | | | | | | | | | | 135 | | | | | | | | 78 | |
| | Kinnaur | 21 | | | | | | | | | | | | | | | | | 65 | | | | | | | | 100 | |
| | Shimla | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 65 | |
| | Solan | 5 | | | | | | | | | | | | | | | | | | | | | | | | | 300 | |
| | Shimla | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 75 | |
| | Solan | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 100 | |
| | Total of Graziers/ Grassland | 59 | | | | | | | | | | | | | | | | | 181 | | | | | | | | 74 | |
| | Grand Total | 400 | 59 | | 57 | | | 16 | | | | | | 14 | 30 | | | 54 | 161 | | 240 | 54 | | 273 | | 75 | 137 | |

Source: Livelihood Survey, JICA Study Team (2017)

4.8 Average Number of Days Worked (Female) (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | | Total | | | | | | | | | | | | | |
|----------------|------------------------------|-------------------------------|-------------|---------|--------------|------------------------------|-------------------------|--------------|------------------------|----------------------------|---|-----|-----|------|-------|--|---|----|-----|--|-----|----|--|-----|--|----|-----|----|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | | | | | | | | | | | | | |
| | | | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Construction and Forest | UKN | Mix | ASHA | | | | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | | | 52 | | | | | | | | | | | | | | | | | | | | | | 52 | |
| | Bharmour | 20 | | | 40 | | | | | | | | | | | | | | | | | | | | | | | 40 |
| | Chamba WL | 20 | | | 41 | | | | | | | | | | | | | | | | | | | | | | | 41 |
| Chamba | Pangj | 20 | | | 90 | | | | | | | | | | | | | | | | | | | | | | 90 | |
| | Kinnaur | 40 | 12 | | 48 | | | 14 | | | | | | 14 | | | | | | | | | | | | | 41 | |
| | Sarahan WL | 20 | 120 | | 40 | | | | | | | | | | | | | | | | | | | | | | 47 | |
| | Kullu | 20 | | | 55 | | | | | | | | | | | | | | | | | | | | | | 55 | |
| | Kullu WL | 20 | | | 47 | | | | | | | | | | | | | | | | | | | | | | 47 | |
| Lahaul & Spiti | Sprit/W/L | 20 | | | 240 | | | 18 | | | | | | | | | | | | | | | | | | | 92 | |
| | Karsog | 20 | 14 | | 23 | | | 18 | | | | | | | | | | | | | | | | | | | 22 | |
| | Mandi | 20 | | | 62 | | | | | | | | | | | | | | | | | | | | | | 62 | |
| | Kotgarh | 20 | | | | | | | | | | | | 30 | | | | | | | | | | | | | 30 | |
| | Rampur | 21 | 150 | | 55 | | | 260 | | | | | | | | | | | | | | | | | | | 98 | |
| | Shimla | 20 | 35 | | 58 | | | | | | | | | | | | | | | | | | | | | | 56 | |
| | Theog | 20 | | | 53 | | | | | | | | | | | | | | | | | | | | | | 57 | |
| | Total of Territorial | 341 | 59 | | 240 | | 0 | 114 | 0 | 0 | 0 | 0 | 0 | 14 | 30 | | 0 | 54 | 161 | | 240 | 54 | | 273 | | 75 | 137 | |
| Kangra | Bajnath | 3 | | | 100 | | | | | | | | | | | | | | | | | | | | | | 100 | |
| | Kullu | 11 | | | 240 | | | 345 | | | | | | 90 | | | | | | | | | | | | | 186 | |
| | Mandi | 3 | | | 100 | | | | | | | | | | | | | | | | | | | | | | 100 | |
| | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 100 | |
| Kullu | Parvati | 10 | | | 135 | | | 202 | | | | | | | | | | | | | | | | | | | 151 | |
| | Kinnaur | 21 | | | 65 | | | 300 | | | | | | 100 | | | | | | | | | | | | | 86 | |
| | Shimla | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 75 | |
| | Solan | 5 | | | | | | | | | | | | | | | | | | | | | | | | | 300 | |
| | Shimla | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 75 | |
| | Solan | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 100 | |
| | Total of Graziers/ Grassland | 59 | | | 74 | | | 277 | | | | | | 90 | 100 | | | | 181 | | 240 | 54 | | 273 | | 75 | 137 | |
| | Grand Total | 400 | 59 | | 240 | | 0 | 209 | 0 | 0 | 0 | 0 | 0 | 14 | 30 | | 0 | 54 | 161 | | 240 | 54 | | 273 | | 75 | 137 | |

Source: Livelihood Survey, JICA Study Team (2017)

4.9 Average Wages by Type of Work (Female) (1)

| District | Division | No of Respondents | JFM | | | | | | | | | | | | Non JFM | | | | | | | | | | | | |
|-------------------------------------|----------------|-------------------|------------|---|------------|---|---|------------|---|---|---|-----|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----|---|---|------------|------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Bilaspur | Bilaspur | 60 | | | 172 | | | | | | | | | 172 | | | 165 | | | | | | | | | | 168 |
| | Bharmour | 20 | | | 213 | | | | | | | | | 213 | | | | | | | | | | | | | 213 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | 206 | | | | | | | | | | 206 |
| Chamba | Pangi | 20 | | | 214 | | | | | | | | | 214 | | | 215 | | | | | | | | | | 214 |
| | Kinnaur | 40 | 213 | | 208 | | | 213 | | | | | 213 | 210 | | | 212 | | | | | | | | | | 211 |
| | Sarahan WL | 20 | | | | | | | | | | | | | 150 | | 203 | | | | | | | | | | 199 |
| | Kullu | 20 | | | | | | | | | | | | | | | 165 | | | | | | | | | | 165 |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | 183 | | | | | | | | | | 183 |
| | Lahaul & Spiti | 20 | | | | | | | | | | | | | | 230 | 213 | | | | | | | | | | 219 |
| | Karsog | 20 | 179 | | 200 | | | 175 | | | | | | 188 | | | 170 | | | | | | | | | | 178 |
| Mandi | Mandi | 20 | | | 170 | | | | | | | | | 170 | | | 171 | | | | | | | | | | 171 |
| | Kotgarh | 20 | | | | | | | | | | 175 | | 175 | | | | | | | | | | | | | 175 |
| | Rampur | 21 | 185 | | 169 | | | | | | | | | 173 | | | 173 | | | 210 | | | | | | | 178 |
| | Theog | 20 | | | 158 | | | | | | | | | 158 | 250 | | 170 | | | | | | | | | | 172 |
| Total of Territorial | | 341 | 198 | | 190 | | | 187 | | | | | 213 | 175 | 190 | 200 | 230 | 193 | | 210 | | | | | | | 195 |
| Kangra | Bainath | 3 | | | | | | | | | | | | | 170 | | 170 | | | | | | | | | | 170 |
| | Kullu | 11 | | | | | | | | | | | | | | | 175 | | | 185 | | | | | | | 178 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | 180 | | | | | | | | | | 180 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | 200 | | 170 | | | 150 | | | | | | | 178 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | 230 | | 228 | | | 33 | | 250 | | | 225 | | 216 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | | | 200 | | 204 | | 141 | | 250 | | | | 225 | | 196 |
| Grand Total | | 400 | 198 | | 190 | | | 187 | | | | | 213 | 175 | 190 | 200 | 230 | 196 | | 210 | | | | | 225 | 195 | |

Source: Livelihood Survey, JICA Study Team (2017)

4.9 Average Wages by Type of Work (Female) (2)

| District | Division | No of Respondents | Total | | | | | | | | | | | | |
|-------------------------------------|----------------|-------------------|------------|------------|------------|---|---|------------|---|------------|---|-----|------------|------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total |
| Bilaspur | Bilaspur | 60 | | | 168 | | | | | | | | | | 168 |
| | Bharmour | 20 | | | 213 | | | | | | | | | | 213 |
| | Chamba WL | 20 | | | 206 | | | | | | | | | | 206 |
| Chamba | Pangi | 20 | | | 214 | | | | | | | | | | 214 |
| | Kinnaur | 40 | 213 | | 210 | | | 213 | | | | | 213 | 211 | |
| | Sarahan WL | 20 | | 150 | 203 | | | | | | | | | 199 | |
| | Kullu | 20 | | | 165 | | | | | | | | | 165 | |
| | Kullu WL | 20 | | | 183 | | | | | | | | | 183 | |
| Kullu | Lahaul & Spiti | 20 | | | 213 | | | | | | | | | 213 | |
| | Lahaul & Spiti | 20 | | | 230 | | | | | | | | | 230 | |
| | Karsog | 20 | 179 | | 179 | | | 175 | | | | | | 178 | |
| Mandi | Mandi | 20 | | | 171 | | | | | | | | | 171 | |
| | Kotgarh | 20 | | | | | | | | | | 175 | | 175 | |
| | Rampur | 21 | 185 | | 170 | | | 210 | | | | | | 178 | |
| | Theog | 20 | | 250 | 162 | | | | | | | | | 172 | |
| Shimla | Theog | 20 | | 250 | 162 | | | | | | | | | 172 | |
| Total of Territorial | | 341 | 199 | | 192 | | | 196 | | | | | 213 | 175 | 193 |
| Kangra | Bainath | 3 | | 170 | 170 | | | | | | | | | 170 | |
| | Kullu | 11 | | | 175 | | | 185 | | | | | | 178 | |
| Mandi | Mandi | 3 | | | 180 | | | | | | | | | 180 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | 200 | 170 | | | 150 | | | | | | 178 | |
| Kinnaur | Kinnaur | 21 | | 230 | 228 | | | 33 | | 250 | | | 225 | 216 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | 200 | 204 | | | 141 | | 250 | | | 225 | 196 | |
| Grand Total | | 400 | 199 | | 193 | | | 169 | | 250 | | | 213 | 208 | 194 |

Source: Livelihood Survey, JICA Study Team (2017)

4.10 Average Total Wages Earned (Female) (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | Non JFM | | | | | | | | | | | | | |
|------------------------------------|------------|-------------------------------|---------------|---------|---------------|------------------------------|-------------------------|--------------|------------------------|----------------------------|------------------------------------|--------------|--------------|------|---------------|---------------|---------------|---------------|------------------------------|-------------------------|---------------|------------------------|----------------------------|------------------------------------|---------------|---------------|---------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total |
| | | | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Forest | UKN | Mix | ASHA | Total | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Forest | UKN | Mix | ASHA | Total |
| Bilaspur | Bilaspur | 60 | | | 12,100 | | | | | | | | | | 12,100 | | | 6,075 | | | | | | | | | 6,075 | |
| | Bharmour | 20 | | | 8,520 | | | | | | | | | | 8,520 | | | | | | | | | | | | 8,520 | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | 8,675 | | | | | | | | 8,675 | |
| Chamba | Pangi | 20 | | | 20,473 | | | | | | | | | | 20,473 | | | | 18,852 | | | | | | | | 18,852 | |
| | Kinnaur | 40 | 2,627 | | 8,045 | | 2,982 | | | | | 2,982 | | | 6,161 | | | | | | | | | | | | 11,901 | |
| | Sarahan WL | 20 | | | | | | | | | | | | | | 18,000 | | | 8,353 | | | | | | | | 9,157 | |
| | Kullu | 20 | | | | | | | | | | | | | | | | | 9,100 | | | | | | | | 9,100 | |
| | Kullu WL | 20 | | | | | | | | | | | | | | | | | 9,490 | | | | | | | | 9,490 | |
| Lahaul & Spiti | Spiti W/L | 20 | | | | | | | | | | | | | | | 55,200 | | 3,887 | | | | | | | | 20,992 | |
| | Karsog | 20 | 2,506 | | 6,631 | | 3,088 | | | | | | | | 4,762 | | | | 3,400 | | | | | | | | 3,400 | |
| Mandi | Mandi | 20 | | | 7,863 | | | | | | | | | | 7,863 | | | | 12,523 | | | | | | | | 12,523 | |
| | Kotgarh | 20 | | | | | | | | | | 5,250 | | | 5,250 | | | | | | | | | | | | | |
| | Rampur | 21 | 28,500 | | 9,075 | | | | | | | | | | 13,392 | | | | | | 54,600 | | | | | | 27,262 | |
| | Theog | 20 | | | 7,699 | | | | | | | | | | 7,699 | | | | 11,288 | | | | | | | | 10,780 | |
| Total of Territorial | | 341 | 11,231 | | 10,809 | | 3,052 | | | | | 2,982 | 5,250 | | 10,189 | 13,375 | 55,200 | 9,842 | 54,600 | | | | | | | | 11,947 | |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | | | 23,700 | | | 17,000 | | | | | | | | 20,350 | |
| | Kullu | 11 | | | | | | | | | | | | | | 6,000 | | | 13,675 | | 79,000 | | | 30,000 | | | 31,088 | |
| | Mandi | 3 | | | | | | | | | | | | | | | | | 18,000 | | | | | | | | 18,000 | |
| | Kangra | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kullu | 10 | | | | | | | | | | | | | | | 15,675 | | 10,200 | | 20,333 | | | | | | 16,738 | |
| | Kinnaur | 21 | | | | | | | | | | | | | | 14,950 | | | 14,635 | | 10,000 | | 18,750 | | 21,250 | | 15,503 | |
| | Shimla | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Solan | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Shimla | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Solan | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/Grassland | | 59 | | | | | | | | | | | | | | 16,381 | | 14,625 | 38,167 | | | 18,750 | | 30,000 | 21,250 | | 19,849 | |
| Grand Total | | 400 | 11,231 | | 10,809 | | 3,052 | | | | | 2,982 | 5,250 | | 10,189 | 15,780 | 55,200 | 10,695 | 42,275 | | 18,750 | | 30,000 | 21,250 | | 14,223 | | |

Source: Livelihood Survey, JICA Study Team (2017)

4.10 Average Total Wages Earned (Female) (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | | Total |
|------------------------------------|------------|-------------------------------|---------------|---------------|---------------|------------------------------|-------------------------|--------------|------------------------|----------------------------|------------------------------------|--------------|---------------|---------------|---------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | Agriculture | Orchard | Construction | Forest Plantation Activities | Agriculture and Orchard | Goat Rearing | Orchard & Construction | Construction & Agriculture | Agriculture and Orchard and Forest | UKN | Mix | ASHA | Total |
| Bilaspur | Bilaspur | 60 | | | 8,814 | | | | | | | | | | 8,814 |
| | Bharmour | 20 | | | 8,520 | | | | | | | | | | 8,520 |
| | Chamba WL | 20 | | | 8,675 | | | | | | | | | | 8,675 |
| Chamba | Pangi | 20 | | | 19,615 | | | | | | | | | | 19,615 |
| | Kinnaur | 40 | 2,627 | | 10,166 | | 2,982 | | | | | 2,982 | | | 8,686 |
| | Sarahan WL | 20 | 18,000 | | 8,353 | | | | | | | | | | 9,157 |
| | Kullu | 20 | | | 9,100 | | | | | | | | | | 9,100 |
| | Kullu WL | 20 | | | 9,490 | | | | | | | | | | 9,490 |
| Lahaul & Spiti | Spiti W/L | 20 | | 55,200 | 3,887 | | | | | | | | | | 20,992 |
| | Karsog | 20 | 2,506 | | 4,369 | | 3,088 | | | | | | | | 4,029 |
| Mandi | Mandi | 20 | | | 10,828 | | | | | | | | | | 10,828 |
| | Kotgarh | 20 | | | | | | | | | | 5,250 | | | 5,250 |
| | Rampur | 21 | 28,500 | | 9,064 | | 54,600 | | | | | | | | 18,346 |
| | Theog | 20 | | | 9,294 | | | | | | | | | | 9,240 |
| Total of Territorial | | 341 | 11,767 | 55,200 | 10,177 | | 23,671 | | | | | 2,982 | 5,250 | | 11,275 |
| Kangra | Bajjnath | 3 | | | 17,000 | | | | | | | | | | 20,350 |
| | Kullu | 11 | | 6,000 | 13,675 | | 79,000 | | | | | 30,000 | | | 31,088 |
| | Mandi | 3 | | | 18,000 | | | | | | | | | | 18,000 |
| | Kangra | 1 | | | | | | | | | | | | | |
| | Kullu | 10 | | 15,675 | 10,200 | | 20,333 | | | | | | | | 16,738 |
| | Kinnaur | 21 | | 14,950 | 14,635 | | 10,000 | | | | 18,750 | | 21,250 | | 15,503 |
| | Shimla | 1 | | | | | | | | | | | | | |
| | Solan | 5 | | | | | | | | | | | | | |
| | Shimla | 2 | | | | | | | | | | | | | |
| | Solan | 2 | | | | | | | | | | | | | |
| | Baddi | 2 | | | | | | | | | | | | | |
| Total of Graziers/Grassland | | 59 | 16,381 | | 14,625 | | 38,167 | | | | 18,750 | | 30,000 | 21,250 | 19,849 |
| Grand Total | | 400 | 14,074 | 55,200 | 10,730 | | 31,578 | | | | 18,750 | | 16,491 | 15,917 | 12,990 |

Source: Livelihood Survey, JICA Study Team (2017)

5. Housing Condition
5.1 Type of Housing

| District | Division | No of Respondents Interviewed | JFM | | | | Non-JFM | | | | Total | | | | % to Total | | | | |
|-------------------------------------|------------|-------------------------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------|------------|------------|-----------|------------|-------------|-------------|-------------|--------------|-------|
| | | | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | |
| | | | Pakka | Kaccha | Mix | | Pakka | Kaccha | Mix | | Pakka | Kaccha | Mix | | Pakka | Kaccha | Mix | | |
| Bilaspur | Bilaspur | 60 | 19 | 12 | 9 | 40 | 12 | 4 | 4 | 20 | 31 | 16 | 13 | 60 | 51.7 | 26.7 | 21.7 | 100.0 | |
| Bilaspur | Bharmour | 20 | 5 | 6 | | 11 | | | 8 | 1 | 9 | 5 | 14 | 1 | 20 | 25.0 | 70.0 | 5.0 | 100.0 |
| Chamba | Chamba WL | 20 | | | | 0 | 6 | 10 | 4 | 20 | 6 | 10 | 4 | 20 | 30.0 | 50.0 | 20.0 | 100.0 | |
| Chamba | Pang | 20 | | 9 | 1 | 10 | 1 | 7 | 2 | 10 | 1 | 16 | 3 | 20 | 5.0 | 80.0 | 15.0 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 4 | 12 | 3 | 19 | 13 | 5 | 3 | 21 | 17 | 17 | 6 | 40 | 42.5 | 42.5 | 15.0 | 100.0 | |
| Kinnaur | Sarahan WL | 20 | | | | 0 | 1 | 13 | 6 | 20 | 1 | 13 | 6 | 20 | 5.0 | 65.0 | 30.0 | 100.0 | |
| Kullu | Kullu | 20 | 1 | 8 | 1 | 10 | 6 | 2 | 2 | 10 | 7 | 10 | 3 | 20 | 35.0 | 50.0 | 15.0 | 100.0 | |
| Kullu | Kullu WL | 20 | | | | 0 | 15 | 5 | | 20 | 15 | 5 | 0 | 20 | 75.0 | 25.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | 4 | 15 | 1 | 20 | 4 | 15 | 1 | 20 | 20.0 | 75.0 | 5.0 | 100.0 | |
| Mandi | Karsog | 20 | 8 | 1 | 1 | 10 | 5 | 1 | 4 | 10 | 13 | 2 | 5 | 20 | 65.0 | 10.0 | 25.0 | 100.0 | |
| Mandi | Mandi | 20 | 1 | 8 | | 9 | 1 | 8 | 2 | 11 | 2 | 16 | 2 | 20 | 10.0 | 80.0 | 10.0 | 100.0 | |
| Mandi | Kotgarh | 20 | 5 | 3 | 2 | 10 | 7 | 2 | 1 | 10 | 12 | 5 | 3 | 20 | 60.0 | 25.0 | 15.0 | 100.0 | |
| Mandi | Rampur | 21 | 1 | 9 | | 10 | | 8 | 3 | 11 | 1 | 17 | 3 | 21 | 4.8 | 81.0 | 14.3 | 100.0 | |
| Shimla | Theog | 20 | 7 | 2 | 2 | 11 | 6 | 3 | | 9 | 13 | 5 | 2 | 20 | 65.0 | 25.0 | 10.0 | 100.0 | |
| Total of Territorial | | 341 | 51 | 70 | 19 | 140 | 77 | 91 | 33 | 201 | 128 | 161 | 52 | 341 | 37.5 | 47.2 | 15.2 | 100.0 | |
| Kangra | Bajnath | 3 | | | | | | | | 0 | 2 | 1 | | 3 | 66.7 | 33.3 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | | | 0 | 7 | 3 | 1 | 11 | 63.6 | 27.3 | 9.1 | 100.0 | |
| Mandi | Mandi | 3 | | | | | | | | 0 | 1 | 1 | 1 | 3 | 33.3 | 33.3 | 33.3 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | | | 0 | 1 | | | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | | | | 0 | 5 | 4 | 1 | 10 | 50.0 | 40.0 | 10.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | 0 | 5 | 14 | 2 | 21 | 23.8 | 66.7 | 9.5 | 100.0 | |
| Shimla | Theog | 1 | | | | | | | | 0 | | 1 | | 1 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | | | | | 0 | | 5 | | 5 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | 0 | 0 | 2 | | 2 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | | | 0 | 2 | | | 2 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 31 | 5 | 59 | 39.0 | 52.5 | 8.5 | 100.0 | |
| Grand Total | | 400 | 51 | 70 | 19 | 140 | 77 | 91 | 33 | 201 | 128 | 161 | 52 | 400 | 37.5 | 47.2 | 15.2 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

5.2 Materials Used for Houses
Wall

| District | Division | No of Respondents Interviewed | JFM | | | | | | | Non-JFM | | | | | | | Total | | | | | | | % to Total | | | | | | |
|-------------------------------------|------------|-------------------------------|------------|----------------|-------------|-----------------------|----------|----------------|------------|------------|----------------|-------------|-----------------------|----------|----------------|------------|------------|----------------|-------------|-----------------------|----------|----------------|-------------|-------------|----------------|-------------|-----------------------|------------|----------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | Total | 1 | 2 | 3 | 4 | 5 | 6 | Total | 1 | 2 | 3 | 4 | 5 | 6 | Total | 1 | 2 | 3 | 4 | 5 | 6 | Total |
| | | | Mud & Clay | Brick or Stone | Brick & Mud | Brick, Mud, Stone Mix | Wood | Wood and Stone | | Mud & Clay | Brick or Stone | Brick & Mud | Brick, Mud, Stone Mix | Wood | Wood and Stone | | Mud & Clay | Brick or Stone | Brick & Mud | Brick, Mud, Stone Mix | Wood | Wood and Stone | | Mud & Clay | Brick or Stone | Brick & Mud | Brick, Mud, Stone Mix | Wood | Wood and Stone | |
| Bilaspur | Bilaspur | 60 | 14 | 25 | 5 | | 1 | 45 | 6 | 16 | 1 | | | 23 | 20 | 41 | 6 | 0 | 1 | 0 | 68 | 29.4 | 60.3 | 9.3 | 0.0 | 1.5 | 0.0 | 100.0 | | |
| Bilaspur | Bharmour | 20 | 6 | 8 | | | | 14 | 7 | 3 | | | 2 | 1 | 13 | 13 | 11 | 0 | 0 | 2 | 1 | 27 | 48.1 | 40.7 | 0.0 | 0.0 | 7.4 | 3.7 | 100.0 | |
| Chamba | Chamba WL | 20 | | | | | | 0 | 14 | 13 | | | 1 | 28 | 14 | 13 | 0 | 0 | 1 | 0 | 28 | 50.0 | 46.4 | 0.0 | 0.0 | 3.6 | 0.0 | 100.0 | | |
| Chamba | Pang | 20 | 8 | 4 | | | | 12 | 9 | 3 | | 1 | | 13 | 17 | 7 | 0 | 1 | 0 | 0 | 25 | 68.0 | 28.0 | 0.0 | 4.0 | 0.0 | 0.0 | 100.0 | | |
| Kinnaur | Kinnaur | 40 | 6 | 9 | 2 | 1 | 4 | 22 | 5 | 12 | 4 | | 1 | 22 | 11 | 21 | 6 | 1 | 5 | 0 | 44 | 25.0 | 47.7 | 13.6 | 2.3 | 11.4 | 0.0 | 100.0 | | |
| Kinnaur | Sarahan WL | 20 | | | | | | 0 | 13 | 7 | | 2 | 7 | 29 | 13 | 7 | 0 | 2 | 7 | 0 | 29 | 44.8 | 24.1 | 0.0 | 6.9 | 24.1 | 0.0 | 100.0 | | |
| Kullu | Kullu | 20 | 6 | 3 | 1 | 1 | 2 | 13 | 3 | 9 | | | | 12 | 9 | 12 | 1 | 1 | 2 | 0 | 25 | 36.0 | 48.0 | 4.0 | 4.0 | 8.0 | 0.0 | 100.0 | | |
| Kullu | Kullu WL | 20 | | | | | | 0 | 5 | 13 | 2 | | 1 | 21 | 5 | 13 | 2 | 0 | 1 | 0 | 21 | 23.8 | 61.9 | 9.5 | 0.0 | 4.8 | 0.0 | 100.0 | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | 15 | 6 | 1 | | | 22 | 15 | 6 | 1 | 0 | 0 | 0 | 22 | 68.2 | 27.3 | 4.5 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Mandi | Karsog | 20 | 1 | 9 | | | | 10 | 5 | 9 | 1 | | | 15 | 6 | 18 | 1 | 0 | 0 | 0 | 25 | 24.0 | 72.0 | 4.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Mandi | Mandi | 20 | 5 | 1 | 2 | 1 | | 9 | 6 | 3 | 2 | 1 | | 12 | 11 | 4 | 4 | 2 | 0 | 0 | 21 | 52.4 | 19.0 | 19.0 | 9.5 | 0.0 | 0.0 | 100.0 | | |
| Mandi | Kotgarh | 20 | 3 | 7 | | 1 | | 11 | 2 | 7 | 3 | 1 | | 13 | 5 | 14 | 3 | 2 | 0 | 0 | 24 | 20.8 | 58.3 | 12.5 | 8.3 | 0.0 | 0.0 | 100.0 | | |
| Mandi | Rampur | 21 | 8 | 2 | 1 | | 1 | 12 | 7 | 1 | 3 | | 1 | 12 | 15 | 3 | 4 | 0 | 2 | 0 | 24 | 62.5 | 12.5 | 16.7 | 0.0 | 8.3 | 0.0 | 100.0 | | |
| Shimla | Theog | 20 | 3 | 8 | | | 1 | 12 | 2 | 6 | 1 | | | 9 | 5 | 14 | 1 | 0 | 1 | 0 | 21 | 23.8 | 66.7 | 4.8 | 0.0 | 4.8 | 0.0 | 100.0 | | |
| Total of Territorial | | 341 | 60 | 76 | 11 | 4 | 9 | 160 | 99 | 108 | 18 | 5 | 13 | 1 | 244 | 159 | 184 | 29 | 9 | 22 | 1 | 404 | 39.4 | 45.5 | 7.2 | 2.2 | 5.4 | 0.2 | 100.0 | |
| Kangra | Bajnath | 3 | | | | | | | 1 | 3 | | | | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 25.0 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Kullu | 11 | | | | | | | 5 | 6 | | | | 11 | 5 | 6 | 0 | 0 | 0 | 0 | 11 | 45.5 | 54.5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Mandi | Mandi | 3 | | | | | | | 2 | 1 | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kangra | Palampur | 1 | | | | | | | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | 100.0 | | |
| Kullu | Parvati | 10 | | | | | | | 5 | 4 | | 1 | | 10 | 5 | 4 | 0 | 1 | 0 | 0 | 10 | 50.0 | 40.0 | 0.0 | 10.0 | 0.0 | 0.0 | 100.0 | | |
| Kinnaur | Kinnaur | 21 | | | | | | | 11 | 10 | | | 2 | 23 | 11 | 10 | 0 | 0 | 2 | 0 | 23 | 47.8 | 43.5 | 0.0 | 8.7 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Theog | 1 | | | | | | | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | 100.0 | | |
| Solan | Nalagarh | 5 | | | | | | | 4 | | | | 1 | 5 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | 80.0 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 100.0 | | |
| Shimla | Kotgarh | 2 | | | | | | | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Solan | Baddi | 2 | | | | | | | 2 | | | | | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | 30 | 25 | 0 | 1 | 3 | 0 | 59 | 30 | 25 | 0 | 1 | 3 | 0 | 59 | 50.8 | 42.4 | 0.0 | 1.7 | 5.1 | 0.0 | 100.0 | |
| Grand Total | | 400 | 60 | 76 | 11 | 4 | 9 | 160 | 129 | 133 | 18 | 6 | 16 | 1 | 303 | 189 | 209 | 29 | 10 | 25 | 1 | 463 | 40.8 | 45.1 | 6.3 | 2.2 | 5.4 | 0.2 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

Roof

| District | Division | No of Respondents Interviewed | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Total | | | | | | | |
|-------------------------------------|------------|-------------------------------|-------------|--------------------|----------|-------------------|-----------|------------|-------------|--------------------|----------|-------------------|-----------|------------|-------------|--------------------|-----------|-------------------|------------|-------------|--------------------|-------------|-------------------|-------------|-------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | | | |
| | | | RCC/ Cement | GI sheet/ asbestos | Tiled | Grass&/ or Bamboo | Mix | | RCC/ Cement | GI sheet/ asbestos | Tiled | Grass&/ or Bamboo | Mix | | RCC/ Cement | GI sheet/ asbestos | Tiled | Grass&/ or Bamboo | Mix | RCC/ Cement | GI sheet/ asbestos | Tiled | Grass&/ or Bamboo | Mix | | | |
| Bilaspur | Bilaspur | 60 | 21 | 4 | 1 | 6 | 11 | 43 | 14 | 1 | 2 | 2 | 5 | 24 | 35 | 5 | 3 | 8 | 16 | 67 | 52.2 | 7.5 | 4.5 | 11.9 | 23.9 | 100.0 | |
| | Bharmour | 20 | 4 | | | | 7 | 11 | 1 | | | | 9 | 10 | 5 | 0 | 0 | 16 | 21 | 23.8 | 0.0 | 0.0 | 0.0 | 76.2 | 100.0 | | |
| | Chamba WL | 20 | | | | | | 0 | 7 | 4 | | | 17 | 28 | 7 | 4 | 0 | 17 | 28 | 25.0 | 14.3 | 0.0 | 0.0 | 60.7 | 100.0 | | |
| Chamba | Pangi | 20 | | 2 | | | 8 | 10 | | 3 | | | 7 | 10 | 0 | 5 | 0 | 15 | 20 | 0.0 | 25.0 | 0.0 | 0.0 | 75.0 | 100.0 | | |
| | Kinnaur | 40 | 1 | 14 | 1 | | 4 | 20 | 8 | 7 | | | 7 | 22 | 9 | 21 | 1 | 0 | 11 | 42 | 21.4 | 50.0 | 2.4 | 0.0 | 26.2 | 100.0 | |
| Kinnaur | Sarahan WL | 20 | | | | | | 0 | 2 | 15 | | | 7 | 24 | 2 | 15 | 0 | 0 | 7 | 24 | 8.3 | 62.5 | 0.0 | 0.0 | 29.2 | 100.0 | |
| | Kullu | 20 | | 3 | | | 8 | 11 | 4 | 1 | 1 | | 5 | 11 | 4 | 4 | 1 | 0 | 13 | 22 | 18.2 | 18.2 | 4.5 | 0.0 | 59.1 | 100.0 | |
| Kullu | Kullu WL | 20 | | | | | | 0 | 10 | 8 | | | 1 | 4 | 23 | 10 | 8 | 0 | 1 | 4 | 43.5 | 34.8 | 0.0 | 4.3 | 17.4 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | 3 | | | | 2 | 15 | 20 | 3 | 0 | 0 | 2 | 15 | 20 | 15.0 | 0.0 | 0.0 | 10.0 | 75.0 | 100.0 |
| | Karsog | 20 | 8 | | 1 | | 1 | 10 | 7 | 1 | 1 | | 2 | 11 | 15 | 1 | 2 | 0 | 3 | 21 | 71.4 | 4.8 | 9.5 | 0.0 | 14.3 | 100.0 | |
| Mandi | Mandi | 20 | | | | 4 | 5 | 9 | 1 | | 1 | 3 | 5 | 10 | 1 | 0 | 1 | 7 | 10 | 19 | 5.3 | 0.0 | 5.3 | 36.8 | 52.6 | 100.0 | |
| | Kotgarh | 20 | 4 | 6 | | | 1 | 11 | 5 | 5 | | | 1 | 11 | 9 | 11 | 0 | 0 | 2 | 22 | 40.9 | 50.0 | 0.0 | 0.0 | 9.1 | 100.0 | |
| | Rampur | 21 | 1 | 8 | | | 1 | 11 | 1 | 4 | | 4 | 2 | 11 | 2 | 12 | 0 | 5 | 3 | 22 | 9.1 | 54.5 | 0.0 | 22.7 | 13.6 | 100.0 | |
| Shimla | Theog | 20 | 7 | | | | 4 | 11 | 4 | 2 | 1 | | 2 | 9 | 11 | 2 | 1 | 0 | 6 | 20 | 55.0 | 10.0 | 5.0 | 0.0 | 30.0 | 100.0 | |
| Total of Territorial | | 341 | 46 | 37 | 3 | 11 | 50 | 147 | 67 | 51 | 6 | 12 | 88 | 224 | 113 | 88 | 9 | 23 | 138 | 371 | 30.5 | 23.7 | 2.4 | 6.2 | 37.2 | 100.0 | |
| Kangra | Bajjnath | 3 | | | | | | | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | | 4 | 1 | 1 | | 1 | 7 | 4 | 1 | 1 | 0 | 7 | 57.1 | 14.3 | 14.3 | 0.0 | 14.3 | 100.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | | | | 1 | | | | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | | 1 | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | | | 4 | 4 | | | 1 | 9 | 4 | 4 | 0 | 1 | 0 | 9 | 44.4 | 44.4 | 0.0 | 11.1 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | 8 | 8 | 1 | 4 | 4 | 25 | 8 | 8 | 1 | 4 | 4 | 25 | 32.0 | 32.0 | 4.0 | 16.0 | 16.0 | 100.0 | |
| Shimla | Theog | 1 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | 0.0 | |
| Solan | Nalagarh | 5 | | | | | | | | 2 | | 2 | 1 | 5 | 0 | 2 | 0 | 2 | 1 | 5 | 0.0 | 40.0 | 0.0 | 40.0 | 20.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | 1 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 2 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | 100.0 | | |
| Solan | Baddi | 2 | | | | | | | | 2 | | | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | 20 | 17 | 2 | 8 | 8 | 55 | 20 | 17 | 2 | 8 | 8 | 55 | 36.4 | 30.9 | 3.6 | 14.5 | 14.5 | 100.0 | |
| Grand Total | | 400 | 46 | 37 | 3 | 11 | 50 | 147 | 87 | 68 | 8 | 20 | 96 | 279 | 133 | 105 | 11 | 31 | 146 | 426 | 31.2 | 24.6 | 2.6 | 7.3 | 34.3 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

Floor

| District | Division | No of Respondents Interviewed | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Total | | | | | | |
|-------------------------------------|------------|-------------------------------|------------------|-----------|-------------|----------|-----------|------------|------------------|-----------|-------------|-----------|-----------|------------|------------------|-----------|-------------|-----------|-----------|------------------|-------------|-------------|-------------|-------------|-------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | | |
| | | | Concrete/ marble | Tiled | Mud or clay | Cemebt | Mix | | Concrete/ marble | Tiled | Mud or clay | Cemebt | Mix | | Concrete/ marble | Tiled | Mud or clay | Cemebt | Mix | Concrete/ marble | Tiled | Mud or clay | Cemebt | Mix | | |
| Bilaspur | Bilaspur | 60 | 23 | 7 | 14 | 2 | 46 | 12 | 5 | 4 | 1 | 22 | 35 | 12 | 18 | 3 | 0 | 68 | 51.5 | 17.6 | 26.5 | 4.4 | 0.0 | 100.0 | | |
| | Bharmour | 20 | 3 | 3 | 5 | | 1 | 12 | 1 | 1 | 7 | | 1 | 10 | 4 | 4 | 12 | 0 | 2 | 22 | 18.2 | 18.2 | 54.5 | 0.0 | 9.1 | 100.0 |
| | Chamba WL | 20 | | | | | | 0 | 9 | 2 | 11 | | 1 | 23 | 9 | 2 | 11 | 0 | 1 | 23 | 39.1 | 8.7 | 47.8 | 0.0 | 4.3 | 100.0 |
| Chamba | Pangi | 20 | 1 | | 8 | 1 | 10 | 4 | 1 | 5 | | | 10 | 5 | 1 | 13 | 1 | 0 | 20 | 25.0 | 5.0 | 65.0 | 5.0 | 0.0 | 100.0 | |
| | Kinnaur | 40 | 5 | 1 | 8 | 2 | 5 | 21 | 8 | 2 | 5 | 2 | 4 | 21 | 13 | 3 | 13 | 4 | 9 | 42 | 31.0 | 7.1 | 31.0 | 9.5 | 21.4 | 100.0 |
| Kinnaur | Sarahan WL | 20 | | | | | | 0 | 8 | | | | 5 | 2 | 9 | 24 | 8 | 0 | 5 | 2 | 33.3 | 0.0 | 20.8 | 8.3 | 37.5 | 100.0 |
| | Kullu | 20 | 2 | | 4 | | 4 | 10 | 5 | 1 | 2 | 1 | 1 | 10 | 7 | 1 | 6 | 1 | 5 | 20 | 35.0 | 5.0 | 30.0 | 5.0 | 25.0 | 100.0 |
| Kullu | Kullu WL | 20 | | | | | | 0 | 11 | 4 | 4 | | 5 | 24 | 11 | 4 | 4 | 0 | 5 | 24 | 45.8 | 16.7 | 16.7 | 0.0 | 20.8 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | 4 | | 14 | 1 | | 19 | 4 | 0 | 14 | 1 | 0 | 19 | 21.1 | 0.0 | 73.7 | 5.3 | 0.0 | 100.0 |
| | Karsog | 20 | 7 | 3 | | | 10 | 8 | | 2 | 1 | 2 | 13 | 15 | 3 | 2 | 1 | 2 | 23 | 65.2 | 13.0 | 8.7 | 4.3 | 8.7 | 100.0 | |
| Mandi | Mandi | 20 | 1 | | 8 | | 9 | 2 | | 7 | 2 | 1 | 12 | 3 | 0 | 15 | 2 | 1 | 21 | 14.3 | 0.0 | 71.4 | 9.5 | 4.8 | 100.0 | |
| | Kotgarh | 20 | 8 | | 2 | | 10 | 7 | 1 | | 1 | 2 | 11 | 15 | 1 | 2 | 1 | 2 | 21 | 71.4 | 4.8 | 9.5 | 4.8 | 9.5 | 100.0 | |
| | Rampur | 21 | 4 | | 4 | | 2 | 10 | 2 | | 8 | | 10 | 6 | 0 | 12 | 0 | 2 | 20 | 30.0 | 0.0 | 60.0 | 0.0 | 10.0 | 100.0 | |
| Shimla | Theog | 20 | 9 | 1 | 2 | 1 | 1 | 14 | 5 | 1 | 4 | | 10 | 14 | 2 | 6 | 1 | 1 | 24 | 58.3 | 8.3 | 25.0 | 4.2 | 4.2 | 100.0 | |
| Total of Territorial | | 341 | 63 | 15 | 55 | 6 | 13 | 152 | 86 | 18 | 78 | 11 | 26 | 219 | 149 | 33 | 133 | 17 | 39 | 371 | 40.2 | 8.9 | 35.8 | 4.6 | 10.5 | 100.0 |
| Kangra | Bajjnath | 3 | | | | | | | 2 | | | | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | | 1 | 2 | | | 1 | 6 | 1 | 2 | 2 | 0 | 1 | 6 | 16.7 | 33.3 | 33.3 | 0.0 | 16.7 | 100.0 |
| Mandi | Mandi | 3 | | | | | | | 1 | | | | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | 0.0 |
| Kullu | Parvati | 10 | | | | | | | 2 | 1 | 1 | 1 | 1 | 6 | 2 | 1 | 1 | 1 | 6 | 33.3 | 16.7 | 16.7 | 16.7 | 16.7 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | 7 | 3 | 6 | 5 | 3 | 24 | 7 | 3 | 6 | 5 | 3 | 24 | 29.2 | 12.5 | 25.0 | 20.8 | 12.5 | 100.0 |
| Shimla | Theog | 1 | | | | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | 0.0 |
| Solan | Nalagarh | 5 | | | | | | | | 5 | | | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | 2 | | | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | | | 2 | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | | | | | | | 12 | 6 | 17 | 6 | 7 | 48 | 12 | 6 | 17 | 6 | 7 | 48 | 25.0 | 12.5 | 35.4 | 12.5 | 14.6 | 100.0 |
| Grand Total | | 400 | 63 | 15 | 55 | 6 | 13 | 152 | 98 | 24 | 95 | 17 | 33 | 267 | 161 | 39 | 150 | 23 | 46 | 419 | 38.4 | 9.3 | 35.8 | 5.5 | 11.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

5.3 Household Amenities
Electricity

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | | % to Total | | |
|-------------------------------------|------------|-------------------------------|----------------|-----------------------|---------------|------------|----------------|-----------------------|---------------|------------|----------------|-----------------------|---------------|------------|----------------|-----------------------|---------------|
| | | | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 |
| | | | Regular Supply | Irregular/Poor Supply | No Connection | | Regular Supply | Irregular/Poor Supply | No Connection | | Regular Supply | Irregular/Poor Supply | No Connection | | Regular Supply | Irregular/Poor Supply | No Connection |
| Bilaspur | Bilaspur | 60 | 40 | | | 40 | 19 | 1 | | 20 | 59 | 1 | 0 | 60 | 98.3 | 1.7 | 0.0 |
| | Bharmour | 20 | 9 | 2 | | 11 | 8 | | | 8 | 17 | 2 | 0 | 19 | 89.5 | 10.5 | 0.0 |
| | Chamba WL | 20 | | | | 0 | 18 | 1 | | 19 | 18 | 1 | 0 | 19 | 94.7 | 5.3 | 0.0 |
| Chamba | Pangi | 20 | 9 | 1 | | 10 | 7 | 3 | | 10 | 16 | 4 | 0 | 20 | 80.0 | 20.0 | 0.0 |
| | Kinnaur | 40 | 18 | 1 | | 19 | 19 | 1 | | 20 | 37 | 2 | 0 | 39 | 94.9 | 5.1 | 0.0 |
| Kinnaur | Sarahan WL | 20 | | | | 0 | 19 | 1 | | 20 | 19 | 1 | 0 | 20 | 95.0 | 5.0 | 0.0 |
| | Kullu | 20 | 10 | | | 10 | 10 | | | 10 | 20 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 |
| Kullu | Kullu WL | 20 | | | | 0 | 20 | | | 20 | 20 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | 16 | 4 | | 20 | 16 | 4 | 0 | 20 | 80.0 | 20.0 | 0.0 |
| | Karsog | 20 | 9 | | | 9 | 10 | | | 10 | 19 | 0 | 0 | 19 | 100.0 | 0.0 | 0.0 |
| Mandi | Mandi | 20 | 9 | | | 9 | 9 | | 1 | 10 | 18 | 0 | 1 | 19 | 94.7 | 0.0 | 5.3 |
| | Kotgarh | 20 | 10 | | | 10 | 10 | | | 10 | 20 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 |
| | Rampur | 21 | 10 | | | 10 | 10 | | | 10 | 20 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 |
| Shimla | Theog | 20 | 9 | | 1 | 10 | 7 | | | 7 | 16 | 0 | 1 | 17 | 94.1 | 0.0 | 5.9 |
| Total of Territorial | | 341 | 133 | 4 | 1 | 138 | 182 | 11 | 1 | 194 | 315 | 15 | 2 | 332 | 94.9 | 4.5 | 0.6 |
| Kangra | Bajnath | 3 | | | | | 3 | | | 3 | 3 | 1 | | 4 | 75.0 | 25.0 | 0.0 |
| Kullu | Kullu | 11 | | | | | 10 | | | 10 | 7 | 3 | 1 | 11 | 63.6 | 27.3 | 9.1 |
| Mandi | Mandi | 3 | | | | | 1 | 2 | | 3 | 1 | 1 | 1 | 3 | 33.3 | 33.3 | 33.3 |
| Kangra | Palampur | 1 | | | | | 1 | | | 1 | 1 | | | 1 | 100.0 | 0.0 | 0.0 |
| Kullu | Parvati | 10 | | | | | 5 | 3 | 1 | 9 | 5 | 4 | 1 | 10 | 50.0 | 40.0 | 10.0 |
| Kinnaur | Kinnaur | 21 | | | | | 21 | | | 21 | 5 | 14 | 2 | 21 | 23.8 | 66.7 | 9.5 |
| Shimla | Theog | 1 | | | | | 1 | | | 1 | | 1 | | 1 | 0.0 | 100.0 | 0.0 |
| Solan | Nalagarh | 5 | | | | | 3 | 1 | 1 | 5 | | 5 | | 5 | 0.0 | 100.0 | 0.0 |
| Shimla | Kotgarh | 2 | | | | | 2 | | 2 | 2 | | 2 | | 2 | 0.0 | 100.0 | 0.0 |
| Solan | Baddi | 2 | | | | | 2 | | | 2 | 2 | | | 2 | 100.0 | 0.0 | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 46 | 6 | 5 | 57 | 24 | 31 | 5 | 60 | 40.0 | 51.7 | 8.3 |
| Grand Total | | 400 | 133 | 4 | 1 | 138 | 228 | 17 | 6 | 251 | 361 | 21 | 7 | 389 | 92.8 | 5.4 | 1.8 |

Source: Livelihood Survey, JICA Study Team (2017)

Drinking Water (The place they collect water)

| District | Division | No of Respondents | JFM | | | | | Non JFM | | | | | Total | | | | | % to Total | | | | | |
|-------------------------------------|------------|-------------------|------------------|----------------|--------------------|----------------|------------|------------------|----------------|--------------------|----------------|------------|------------------|----------------|--------------------|----------------|------------|------------------|----------------|--------------------|----------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | |
| | | | Inside the House | Near the House | Far from the House | Natural Source | | Inside the House | Near the House | Far from the House | Natural Source | | Inside the House | Near the House | Far from the House | Natural Source | | Inside the House | Near the House | Far from the House | Natural Source | | |
| Bilaspur | Bilaspur | 60 | 8 | 25 | 4 | | 37 | 5 | 12 | 2 | | 20 | 13 | 37 | 6 | 1 | 57 | 22.8 | 64.9 | 10.5 | 1.8 | 100.0 | |
| | Bharmour | 20 | 1 | 7 | 3 | | 11 | 2 | 6 | | | 8 | 3 | 13 | 3 | 0 | 19 | 15.8 | 68.4 | 15.8 | 0.0 | 100.0 | |
| | Chamba WL | 20 | | | | | 0 | 5 | 13 | 1 | | 19 | 5 | 13 | 1 | 0 | 19 | 26.3 | 68.4 | 5.3 | 0.0 | 100.0 | |
| Chamba | Pangi | 20 | | 10 | | | 10 | | 3 | 4 | 1 | 8 | 0 | 13 | 4 | 1 | 18 | 0.0 | 72.2 | 22.2 | 5.6 | 100.0 | |
| | Kinnaur | 40 | 9 | 8 | 2 | | 19 | 5 | 8 | 2 | 2 | 17 | 14 | 16 | 4 | 2 | 36 | 38.9 | 44.4 | 11.1 | 5.6 | 100.0 | |
| Kinnaur | Sarahan WL | 20 | | | | | 0 | 5 | 12 | 4 | | 21 | 5 | 12 | 4 | 0 | 21 | 23.8 | 57.1 | 19.0 | 0.0 | 100.0 | |
| | Kullu | 20 | | 7 | 3 | | 10 | 3 | 6 | | 1 | 10 | 3 | 13 | 3 | 1 | 20 | 15.0 | 65.0 | 15.0 | 5.0 | 100.0 | |
| Kullu | Kullu WL | 20 | | | | | 0 | 10 | 9 | | 1 | 20 | 10 | 9 | 0 | 1 | 20 | 50.0 | 45.0 | 0.0 | 5.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | 1 | 17 | 2 | | 20 | 1 | 17 | 2 | 0 | 20 | 5.0 | 85.0 | 10.0 | 0.0 | 100.0 | |
| | Karsog | 20 | 2 | 7 | 1 | | 10 | | 9 | 1 | | 10 | 2 | 16 | 2 | 0 | 20 | 10.0 | 80.0 | 10.0 | 0.0 | 100.0 | |
| Mandi | Mandi | 20 | | 8 | 1 | | 9 | 2 | 8 | | | 10 | 2 | 16 | 1 | 0 | 19 | 10.5 | 84.2 | 5.3 | 0.0 | 100.0 | |
| | Kotgarh | 20 | 1 | 8 | | | 9 | 6 | 5 | | | 11 | 7 | 13 | 0 | 0 | 20 | 35.0 | 65.0 | 0.0 | 0.0 | 100.0 | |
| | Rampur | 21 | 1 | 9 | | | 10 | | 10 | | | 10 | 1 | 19 | 0 | 0 | 20 | 5.0 | 95.0 | 0.0 | 0.0 | 100.0 | |
| | Theog | 20 | 1 | 4 | 2 | 1 | 8 | 3 | 4 | 1 | 1 | 9 | 4 | 8 | 3 | 2 | 17 | 23.5 | 47.1 | 17.6 | 11.8 | 100.0 | |
| Total of Territorial | | 341 | 23 | 93 | 16 | 1 | 133 | 47 | 122 | 17 | 7 | 193 | 70 | 215 | 33 | 8 | 326 | 21.5 | 66.0 | 10.1 | 2.5 | 100.0 | |
| Kangra | Bajnath | 3 | | | | | | 2 | 1 | | | 3 | 2 | 1 | 0 | 0 | 3 | 66.7 | 33.3 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | 4 | 2 | 1 | | 7 | 4 | 2 | 1 | 0 | 7 | 57.1 | 28.6 | 14.3 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | | | | 2 | | | 2 | 0 | 2 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 100.0 | |
| Kullu | Parvati | 10 | | | | | | 2 | | 3 | 2 | 7 | 2 | 0 | 3 | 2 | 7 | 28.6 | 0.0 | 42.9 | | 28.6 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | | | | 16 | 6 | | | 22 | 16 | 6 | 0 | 0 | 22 | 72.7 | 27.3 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | | | | 1 | | | 1 | 0 | 0 | 1 | 0 | 1 | 0.0 | | | | 100.0 | |
| Solan | Nalagarh | 5 | | | | | | 1 | 1 | 2 | 1 | 5 | 1 | 1 | 2 | 1 | 5 | 20.0 | 20.0 | 40.0 | | 20.0 | 100.0 |
| Shimla | Kotgarh | 2 | | | | | | 1 | 2 | 1 | | 1 | 0 | 0 | 1 | 0 | 1 | 0.0 | 0.0 | 100.0 | | 0.0 | 100.0 |
| Solan | Baddi | 2 | | | | | | 2 | | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | | | | | | 25 | 14 | 8 | 3 | 50 | 25 | 14 | 8 | 3 | 50 | 50.0 | 28.0 | 16.0 | 6.0 | 100.0 | |
| Grand Total | | 400 | 23 | 93 | 16 | 1 | 133 | 72 | 136 | 25 | 10 | 243 | 95 | 229 | 41 | 11 | 376 | 25.3 | 60.9 | 10.9 | 2.9 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

Drinking Water (Sources) (1)

| District | Division | No of Respondents | JFM | | | | | | | Total | Non JFM | | | | | | | Total | Total | | | | | | | Total |
|-------------------------------------|------------|-------------------|-----------|--------------|----------------|----------------|------------|----------------|-------------|------------|-----------|--------------|----------------|----------------|------------|----------------|-------------|------------|-----------|--------------|----------------|----------------|------------|----------------|-------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | Hand Pump | Covered Well | Uncovered Well | Spring/Natural | Rain Water | Government Tap | Private Tap | | Hand Pump | Covered Well | Uncovered Well | Spring/Natural | Rain Water | Government Tap | Private Tap | | Hand Pump | Covered Well | Uncovered Well | Spring/Natural | Rain Water | Government Tap | Private Tap | |
| Bilaspur | Bilaspur | 60 | 15 | 1 | 1 | 2 | 3 | 25 | 47 | 3 | 1 | 4 | 1 | 18 | 27 | 18 | 2 | 5 | 2 | 4 | 43 | 0 | 74 | | | |
| | Bharmour | 20 | | | | 2 | | 7 | 9 | | | | 2 | 7 | 9 | 0 | 0 | 0 | 4 | 0 | 14 | 0 | 18 | | | |
| | Chamba WL | 20 | | | | | | | 0 | | | | 5 | 14 | 19 | 0 | 0 | 0 | 5 | 0 | 14 | 0 | 19 | | | |
| Chamba | Pangi | 20 | | | | 2 | | 8 | 10 | | | | 1 | 6 | 7 | 0 | 0 | 0 | 3 | 0 | 14 | 0 | 17 | | | |
| | Kinnaur | 40 | | | | 1 | | 16 | 17 | | | | 8 | 12 | 20 | 0 | 0 | 0 | 9 | 0 | 28 | 0 | 37 | | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | 1 | | | 3 | 18 | 23 | 1 | 0 | 0 | 3 | 1 | 18 | 0 | 23 | | | |
| | Kullu | 20 | | | | 2 | | 10 | 12 | | | | 2 | 8 | 12 | 0 | 0 | 0 | 4 | 0 | 18 | 2 | 24 | | | |
| | Kullu WL | 20 | | | | | | | 0 | | | | 1 | 16 | 17 | 0 | 0 | 0 | 1 | 0 | 16 | 0 | 17 | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | 7 | | | 2 | 13 | 23 | 7 | 0 | 0 | 2 | 1 | 13 | 0 | 23 | | | |
| | Karsog | 20 | 4 | | | | | 9 | 13 | 2 | | | | 5 | 7 | 6 | 0 | 0 | 0 | 0 | 14 | 0 | 20 | | | |
| Mandi | Mandi | 20 | | | | | | 9 | 9 | | | | | 1 | 9 | 0 | 0 | 0 | 1 | 17 | 0 | 18 | | | | |
| | Kotgarh | 20 | | | | | | 9 | 9 | | | | 3 | 2 | 12 | 0 | 0 | 0 | 3 | 2 | 16 | 0 | 21 | | | |
| | Rampur | 21 | | | 1 | 5 | | 7 | 13 | | | | 3 | 1 | 12 | 0 | 0 | 1 | 8 | 1 | 15 | 0 | 25 | | | |
| Shimla | Theog | 20 | 5 | | | 1 | | 8 | 14 | 1 | | | | 9 | 10 | 6 | 0 | 0 | 1 | 0 | 17 | 0 | 24 | | | |
| Total of Territorial | | 341 | 24 | 1 | 2 | 15 | 3 | 108 | 0 | 153 | 14 | 1 | 4 | 30 | 7 | 149 | 2 | 207 | 38 | 2 | 6 | 45 | 10 | 257 | 2 | 360 |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Kullu | Kullu | 11 | | | | | | | | 1 | | | | 3 | 8 | 1 | 0 | 0 | 3 | 0 | 4 | 0 | 8 | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | 1 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | | | |
| Kullu | Parvati | 10 | | | | | | | | 1 | 1 | | | 4 | 8 | 1 | 1 | 0 | 4 | 0 | 2 | 0 | 8 | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | 1 | | | | 18 | 20 | 1 | 0 | 0 | 1 | 0 | 18 | 0 | 20 | | | |
| Shimla | Theog | 1 | | | | | | | | | | | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | 2 | | 2 | 5 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 5 | | | |
| Shimla | Kotgarh | 2 | | | | | | | | 1 | | | | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | | | |
| Solan | Baddi | 2 | | | | | | | | | | 2 | | | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | 4 | 5 | 0 | 13 | 0 | 27 | 0 | 49 | 4 | 5 | 0 | 13 | 0 | 27 | 0 | 49 |
| Grand Total | | 400 | 24 | 1 | 2 | 15 | 3 | | | 153 | 18 | 6 | 4 | 43 | 7 | 176 | 2 | 256 | 42 | 7 | 6 | 58 | 10 | 284 | 2 | 409 |

Source: Livelihood Survey, JICA Study Team (2017)

Drinking Water (Sources) (2)

| District | Division | No of Respondents | % to Total | | | | | | | Total |
|-------------------------------------|------------|-------------------|-------------|--------------|----------------|----------------|------------|----------------|-------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | Hand Pump | Covered Well | Uncovered Well | Spring/Natural | Rain Water | Government Tap | Private Tap | |
| Bilaspur | Bilaspur | 60 | 24.3 | 2.7 | 6.8 | 2.7 | 5.4 | 58.1 | 0.0 | 100.0 |
| | Bharmour | 20 | 0.0 | 0.0 | 0.0 | 22.2 | 0.0 | 77.8 | 0 | 100.0 |
| | Chamba WL | 20 | 0.0 | 0.0 | 0.0 | 26.3 | 0.0 | 73.7 | 0 | 100.0 |
| Chamba | Pangi | 20 | 0.0 | 0.0 | 0.0 | 17.6 | 0.0 | 82.4 | 0 | 100.0 |
| | Kinnaur | 40 | 0.0 | 0.0 | 0.0 | 24.3 | 0.0 | 75.7 | 0 | 100.0 |
| Kinnaur | Sarahan WL | 20 | 4.3 | 0.0 | 0.0 | 13.0 | 4.3 | 78.3 | 0 | 100.0 |
| | Kullu | 20 | 0.0 | 0.0 | 0.0 | 16.7 | 0.0 | 75.0 | 8.3 | 100.0 |
| Kullu | Kullu WL | 20 | 0.0 | 0.0 | 0.0 | 5.9 | 0.0 | 94.1 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 30.4 | 0.0 | 0.0 | 8.7 | 4.3 | 56.5 | 0.0 | 100.0 |
| | Karsog | 20 | 30.0 | 0.0 | 0.0 | 0.0 | 0.0 | 70.0 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 5.6 | 94.4 | 0.0 | 100.0 |
| | Kotgarh | 20 | 0.0 | 0.0 | 0.0 | 14.3 | 9.5 | 76.2 | 0.0 | 100.0 |
| | Rampur | 21 | 0.0 | 0.0 | 4.0 | 32.0 | 4.0 | 60.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 25.0 | 0.0 | 0.0 | 4.2 | 0.0 | 70.8 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 10.6 | 0.6 | 1.7 | 12.5 | 2.8 | 71.4 | 0.6 | 100.0 |
| Kangra | Bajnath | 3 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | 12.5 | 0.0 | 0.0 | 37.5 | 0.0 | 50.0 | 0 | 100.0 |
| Mandi | Mandi | 3 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 50.0 | 0 | 100.0 |
| Kangra | Palampur | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0 | 100.0 |
| Kullu | Parvati | 10 | 12.5 | 12.5 | 0.0 | 50.0 | 0.0 | 25.0 | 0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 | 90.0 | 0 | 100.0 |
| Shimla | Theog | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0 | 100.0 |
| Solan | Nalagarh | 5 | 0.0 | 40.0 | 0.0 | 40.0 | 0.0 | 20.0 | 0 | 100.0 |
| Shimla | Kotgarh | 2 | 50.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0 | 100.0 |
| Solan | Baddi | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 8.2 | 10.2 | 0.0 | 26.5 | 0.0 | 55.1 | 0 | 100.0 |
| Grand Total | | 400 | 10.3 | 1.7 | 1.5 | 14.2 | 2.4 | 69.4 | 0.5 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Cattle Shed (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | Non JFM | | | | | | Total | | | | | | | | |
|-------------------------------------|------------|-------------------------------|---------------------------|------------------------|--------------|--------------------------------|----------------|-------------------------|------------|---------------------------|------------------------|--------------|--------------------------------|----------------|-------------------------|------------|---------------------------|------------------------|--------------|--------------------------------|----------------|-------------------------|-------|
| | | | 1 Yard with Roof/ Shed | 2 Yard without Shed | 3 No Yard | 4 Ground Floor of the House | 5 RiverSide | 6 Rented Cattle Shed | Total | 1 Yard with Roof/ Shed | 2 Yard without Shed | 3 No Yard | 4 Ground Floor of the House | 5 RiverSide | 6 Rented Cattle Shed | Total | 1 Yard with Roof/ Shed | 2 Yard without Shed | 3 No Yard | 4 Ground Floor of the House | 5 RiverSide | 6 Rented Cattle Shed | Total |
| Bilaspur | Bilaspur | 60 | 33 | | 1 | | | | 34 | 17 | 1 | | | | | 18 | 50 | 1 | 1 | 0 | 0 | 0 | 52 |
| | Bharmour | 20 | 5 | 3 | | 1 | | | 9 | 6 | | | | | 6 | 11 | 3 | 0 | 1 | 0 | 0 | 15 | |
| | Chamba WL | 20 | | | | | | | 0 | 13 | | | 4 | | 17 | 13 | 0 | 0 | 4 | 0 | 0 | 17 | |
| Chamba | Pangi | 20 | 9 | | | | | | 9 | 6 | | | | | 7 | 15 | 0 | 0 | 0 | 0 | 1 | 16 | |
| | Kinnaur | 40 | 8 | | | | | | 8 | 9 | 5 | | | | 14 | 17 | 5 | 0 | 0 | 0 | 0 | 22 | |
| | Sarahan WL | 20 | | | | | | | 0 | 15 | | | 1 | | 16 | 15 | 0 | 0 | 1 | 0 | 0 | 16 | |
| | Kullu | 20 | 7 | 1 | | 1 | | | 9 | 5 | | 1 | 1 | | 7 | 12 | 1 | 1 | 2 | 0 | 0 | 16 | |
| | Kullu WL | 20 | | | | | | | 0 | 13 | 1 | 2 | 1 | | 17 | 13 | 1 | 2 | 1 | 0 | 0 | 17 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | 11 | 1 | 1 | | | 13 | 11 | 1 | 1 | 0 | 0 | 0 | 13 | |
| | Karsog | 20 | 10 | | | | | | 10 | 6 | 1 | | 2 | | 9 | 16 | 1 | 0 | 2 | 0 | 0 | 19 | |
| Mandi | Mandi | 20 | 8 | 1 | | | | | 9 | 9 | 2 | | | | 11 | 17 | 3 | 0 | 0 | 0 | 0 | 20 | |
| | Kotgarh | 20 | 6 | | 1 | | | 1 | 8 | 2 | 1 | 4 | 1 | | 8 | 8 | 1 | 5 | 1 | 0 | 1 | 16 | |
| | Rampur | 21 | 6 | 1 | | | | | 7 | 6 | 2 | | | | 8 | 12 | 3 | 0 | 0 | 0 | 0 | 15 | |
| Shimla | Theog | 20 | 9 | 2 | | | | | 11 | 5 | 1 | 1 | | | 7 | 14 | 3 | 1 | 0 | 0 | 0 | 18 | |
| Total of Territorial | | 341 | 101 | 8 | 2 | 2 | 0 | 1 | 114 | 123 | 15 | 9 | 10 | 0 | 158 | 224 | 23 | 11 | 12 | 0 | 2 | 272 | |
| Kangra | Bainath | 3 | | | | | | | | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Kullu | Kullu | 11 | | | | | | | | 9 | | | | | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 9 | |
| Mandi | Mandi | 3 | | | | | | | | 3 | | | | | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | |
| Kangra | Palampur | 1 | | | | | | | | | 1 | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | |
| Kullu | Parvati | 10 | | | | | | | | 4 | | 3 | | | 7 | 4 | 0 | 3 | 0 | 0 | 0 | 7 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | 13 | | 2 | | | 15 | 13 | 0 | 2 | 0 | 0 | 0 | 15 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Nalagarh | 5 | | | | | | | | 4 | | | 1 | | 5 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Solan | Baddi | 2 | | | | | | | | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | 37 | 0 | 6 | 0 | 1 | 0 | 44 | 37 | 0 | 6 | 0 | 1 | 44 | |
| Grand Total | | 400 | 101 | 8 | 2 | 2 | 0 | | 114 | 160 | 15 | 15 | 10 | 1 | 202 | 261 | 23 | 17 | 12 | 1 | 2 | 316 | |

Source: Livelihood Survey, JICA Study Team (2017)

Cattle Shed (2)

| District | Division | No of Respondents Interviewed | % to Total | | | | | | Total |
|-------------------------------------|------------|-------------------------------|---------------------------|------------------------|--------------|--------------------------------|----------------|-------------------------|------------|
| | | | 1 Yard with Roof/ Shed | 2 Yard without Shed | 3 No Yard | 4 Ground Floor of the House | 5 RiverSide | 6 Rented Cattle Shed | |
| Bilaspur | Bilaspur | 60 | 96.2 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Bharmour | 20 | 73.3 | 20.0 | 0.0 | 6.7 | 0.0 | 0.0 | 100 |
| | Chamba WL | 20 | 76.5 | 0.0 | 0.0 | 23.5 | 0.0 | 0.0 | 100 |
| Chamba | Pangi | 20 | 93.8 | 0.0 | 0.0 | 0.0 | 0.0 | 6.3 | 100 |
| | Kinnaur | 40 | 77.3 | 22.7 | 0.0 | 0.0 | 0.0 | 0.0 | 100 |
| | Sarahan WL | 20 | 93.8 | 0.0 | 0.0 | 6.3 | 0.0 | 0.0 | 100 |
| | Kullu | 20 | 75.0 | 6.3 | 6.3 | 12.5 | 0.0 | 0.0 | 100 |
| | Kullu WL | 20 | 76.5 | 5.9 | 11.8 | 5.9 | 0.0 | 0.0 | 100 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 84.6 | 7.7 | 7.7 | 0.0 | 0.0 | 0.0 | 100 |
| | Karsog | 20 | 84.2 | 5.3 | 0.0 | 10.5 | 0.0 | 0.0 | 100 |
| Mandi | Mandi | 20 | 85.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100 |
| | Kotgarh | 20 | 50.0 | 6.3 | 31.3 | 6.3 | 0.0 | 6.3 | 100 |
| | Rampur | 21 | 80.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100 |
| Shimla | Theog | 20 | 77.8 | 16.7 | 5.6 | 0.0 | 0.0 | 0.0 | 100 |
| Total of Territorial | | 341 | 82.4 | 8.5 | 4.0 | 4.4 | 0.0 | 0.7 | 100 |
| Kangra | Bainath | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100 |
| Kullu | Kullu | 11 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100 |
| Mandi | Mandi | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100 |
| Kangra | Palampur | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100 |
| Kullu | Parvati | 10 | 57.1 | 0.0 | 42.9 | 0.0 | 0.0 | 0.0 | 100 |
| Kinnaur | Kinnaur | 21 | 86.7 | 0.0 | 13.3 | 0.0 | 0.0 | 0.0 | 100 |
| Shimla | Theog | 1 | - | - | - | - | - | - | 0 |
| Solan | Nalagarh | 5 | 80.0 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 100 |
| Shimla | Kotgarh | 2 | - | - | - | - | - | - | 0 |
| Solan | Baddi | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100 |
| Total of Graziers/ Grassland | | 59 | 84.1 | 0.0 | 13.6 | 0.0 | 2.3 | 0.0 | 100 |
| Grand Total | | 400 | 82.6 | 7.3 | 5.4 | 3.8 | 0.3 | 0.6 | 100 |

Source: Livelihood Survey, JICA Study Team (2017)

5.4 Household Assets
Household Items (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | | | Non JFM | | | | | | | | | | |
|-------------------------------------|-----------------|-------------------------------|------------|------------|---------------|-----------------------|--------------|------------------------------------|-----------------|--------------|------------------|----------|----------------|------------|------------|-----------|---------------|-----------------------|--------------|------------------------------------|-----------------|--------------|------------------|----------|----------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Total |
| | | | Bed | TV | Stereo/ Radio | Stove (LPG/ Kerosene) | Refrigerator | Improved Chulla (Energy Efficient) | Washing Machine | Mobile Phone | Induction Cooker | Heater | Mixer/ Blender | | Bed | TV | Stereo/ Radio | Stove (LPG/ Kerosene) | Refrigerator | Improved Chulla (Energy Efficient) | Washing Machine | Mobile Phone | Induction Cooker | Heater | Mixer/ Blender | |
| Bilaspur | Bilaspur | 60 | 40 | 37 | 4 | 28 | 24 | 10 | | | | | 146 | 20 | 21 | 3 | 17 | 18 | 4 | | | | | | 86 | |
| | Bharmour | 20 | 9 | 10 | 3 | 4 | 2 | 1 | | | | | 29 | 9 | 8 | | 6 | 1 | | | | | | | 27 | |
| | Chamba WL | 20 | | | | | | | | | | | 0 | 20 | 19 | 2 | 18 | 9 | 2 | | | | | | 70 | |
| Chamba | Pangi | 20 | 10 | 10 | | 7 | | | | | | | 27 | 9 | 10 | 2 | 10 | | | | | | | | 31 | |
| | Kinnaur | 40 | 19 | 15 | 3 | 17 | 5 | 5 | | | | | 64 | 21 | 21 | 2 | 21 | 6 | 7 | 1 | | 1 | 1 | | 81 | |
| | Sarahan WL | 20 | | | | | | | | | | | 0 | 20 | 19 | 6 | 16 | 7 | 4 | | | | | | 73 | |
| | Kullu | 20 | 10 | 8 | | 8 | | 1 | | | | | 27 | 10 | 10 | | 10 | 8 | 1 | | | | | | 39 | |
| | Kullu WL | 20 | | | | | | | | | | | 0 | 20 | 20 | 1 | 19 | 10 | 5 | | | | | | 75 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | 0 | 20 | 18 | 6 | 19 | 4 | 4 | | | | | | 71 | |
| | Karsog | 20 | 10 | 10 | 4 | 9 | 4 | 1 | | | | | 38 | 10 | 9 | | 6 | 5 | 1 | | | | | | 31 | |
| | Mandi | 20 | 9 | 6 | 4 | 3 | 3 | 1 | | | | | 27 | 10 | 10 | 1 | 5 | 2 | 2 | | | | | | 30 | |
| | Kotgarh | 20 | 10 | 7 | 1 | 6 | 5 | 2 | | | | | 31 | 10 | 10 | 2 | 10 | 8 | 3 | | | | | | 43 | |
| | Rampur | 21 | 10 | 10 | | 7 | 1 | 2 | | | | | 30 | 11 | 8 | | 2 | 2 | 2 | | | 1 | | | 26 | |
| Shimla | Theog | 20 | 11 | 11 | 2 | 11 | 9 | 3 | 2 | | | | 49 | 8 | 9 | 2 | 9 | 5 | 2 | | | | | | 35 | |
| Total of Territorial | | 341 | 138 | 124 | 21 | 100 | 53 | 26 | 2 | 3 | 1 | 0 | 468 | 198 | 192 | 27 | 168 | 84 | 38 | 1 | 1 | 4 | 4 | 1 | 718 | |
| Kangra | Baijnath | 3 | | | | | | | | | | | 3 | 3 | 1 | 2 | 1 | 1 | | | | | | | 11 | |
| | Kullu | 11 | | | | | | | | | | | 10 | 10 | 4 | 9 | 9 | 5 | | | | | | | 47 | |
| | Mandi | 3 | | | | | | | | | | | 3 | 1 | | | | | | | | | | | 4 | |
| | Kangra Palampur | 1 | | | | | | | | | | | 1 | 1 | 1 | 1 | | | | | | | | | 4 | |
| | Kullu Parvati | 10 | | | | | | | | | | | 7 | 8 | 3 | 6 | 2 | 2 | | | | | | | 28 | |
| | Kinnaur | 21 | | | | | | | | | | | 19 | 18 | 4 | 21 | 5 | 6 | | | | | | | 73 | |
| | Shimla Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Solan Nalagarh | 5 | | | | | | | | | | | 1 | | 1 | | 1 | | | | | | | | 3 | |
| | Shimla Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Solan Baddi | 2 | | | | | | | | | | | 2 | | | | 2 | | | | | | | | 4 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | 0 | 46 | 41 | 14 | 39 | 20 | 14 | 0 | 0 | 0 | 0 | 0 | 174 | |
| Grand Total | | 400 | 138 | 124 | 21 | 100 | 53 | 26 | 2 | 3 | 1 | 0 | 468 | 244 | 233 | 41 | 207 | 104 | 52 | 1 | 1 | 4 | 4 | 1 | 892 | |

Source: Livelihood Survey, JICA Study Team (2017)

Household Items (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | | | % to Total | | | | | | | | | | |
|-------------------------------------|-----------------|-------------------------------|------------|------------|---------------|-----------------------|--------------|------------------------------------|-----------------|--------------|------------------|----------|----------------|--------------|-------------|-------------|---------------|-----------------------|--------------|------------------------------------|-----------------|--------------|------------------|------------|----------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Total |
| | | | Bed | TV | Stereo/ Radio | Stove (LPG/ Kerosene) | Refrigerator | Improved Chulla (Energy Efficient) | Washing Machine | Mobile Phone | Induction Cooker | Heater | Mixer/ Blender | | Bed | TV | Stereo/ Radio | Stove (LPG/ Kerosene) | Refrigerator | Improved Chulla (Energy Efficient) | Washing Machine | Mobile Phone | Induction Cooker | Heater | Mixer/ Blender | |
| Bilaspur | Bilaspur | 60 | 60 | 58 | 7 | 45 | 42 | 14 | 0 | 4 | 1 | 0 | 1 | 232 | 25.9 | 25.0 | 3.0 | 19.4 | 18.1 | 6.0 | 0.0 | 1.7 | 0.4 | 0.0 | 0.4 | 100.0 |
| | Bharmour | 20 | 18 | 18 | 3 | 10 | 2 | 2 | 0 | 0 | 2 | 1 | 0 | 56 | 32.1 | 32.1 | 5.4 | 17.9 | 3.6 | 3.6 | 0.0 | 0.0 | 3.6 | 1.8 | 0.0 | 100.0 |
| | Chamba WL | 20 | 20 | 19 | 2 | 18 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 70 | 28.6 | 27.1 | 2.9 | 25.7 | 12.9 | 2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 19 | 20 | 2 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 32.8 | 34.5 | 3.4 | 29.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 40 | 36 | 5 | 38 | 11 | 12 | 1 | 0 | 1 | 0 | 0 | 145 | 27.6 | 24.8 | 3.4 | 26.2 | 7.6 | 8.3 | 0.7 | 0.0 | 0.7 | 0.7 | 0.0 | 100.0 |
| | Sarahan WL | 20 | 20 | 19 | 6 | 16 | 7 | 4 | 0 | 0 | 0 | 1 | 0 | 73 | 27.4 | 26.0 | 8.2 | 21.9 | 9.6 | 5.5 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 100.0 |
| | Kullu | 20 | 20 | 18 | 0 | 18 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 66 | 30.3 | 27.3 | 0.0 | 27.3 | 12.1 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu WL | 20 | 20 | 20 | 1 | 19 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 75 | 26.7 | 26.7 | 1.3 | 25.3 | 13.3 | 6.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 20 | 18 | 6 | 19 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 71 | 28.2 | 25.4 | 8.5 | 26.8 | 5.6 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Karsog | 20 | 20 | 19 | 4 | 15 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 69 | 29.0 | 27.5 | 5.8 | 21.7 | 13.0 | 2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Mandi | 20 | 19 | 16 | 5 | 8 | 5 | 3 | 0 | 0 | 1 | 0 | 0 | 57 | 33.3 | 28.1 | 8.8 | 14.0 | 8.8 | 5.3 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | 20 | 17 | 3 | 16 | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 74 | 27.0 | 23.0 | 4.1 | 21.6 | 17.6 | 6.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | 21 | 21 | 18 | 0 | 9 | 3 | 4 | 0 | 0 | 0 | 1 | 0 | 56 | 37.5 | 32.1 | 0.0 | 16.1 | 5.4 | 7.1 | 0.0 | 0.0 | 0.0 | 1.8 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 19 | 20 | 4 | 20 | 14 | 5 | 2 | 0 | 0 | 0 | 0 | 84 | 22.6 | 23.8 | 4.8 | 23.8 | 16.7 | 6.0 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 336 | 316 | 48 | 268 | 137 | 64 | 3 | 4 | 5 | 4 | 1 | 1,186 | 28.3 | 26.6 | 4.0 | 22.6 | 11.6 | 5.4 | 0.3 | 0.3 | 0.4 | 0.3 | 0.1 | 100.0 |
| Kangra | Baijnath | 3 | 3 | 3 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 27.3 | 27.3 | 9.1 | 18.2 | 9.1 | 9.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | 11 | 10 | 10 | 4 | 9 | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 47 | 21.3 | 21.3 | 8.5 | 19.1 | 19.1 | 10.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Mandi | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kangra Palampur | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 25.0 | 25.0 | 25.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu Parvati | 10 | 7 | 8 | 3 | 6 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 28 | 25.0 | 28.6 | 10.7 | 21.4 | 7.1 | 7.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 21 | 19 | 18 | 4 | 21 | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 73 | 26.0 | 24.7 | 5.5 | 28.8 | 6.8 | 8.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Shimla Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 |
| | Solan Nalagarh | 5 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 33.3 | 0.0 | 33.3 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Shimla Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 |
| | Solan Baddi | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 46 | 41 | 14 | 39 | 20 | 14 | 0 | 0 | 0 | 0 | 0 | 174 | 26.4 | 23.6 | 8.0 | 22.4 | 11.5 | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Grand Total | | 400 | 382 | 357 | 62 | 307 | 157 | 78 | 3 | 4 | 5 | 4 | 1 | 1,360 | 28.1 | 26.3 | 4.6 | 22.6 | 11.5 | 5.7 | 0.2 | 0.3 | 0.4 | 0.3 | 0.1 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Vehicle(s) (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | Non JFM | | | | | | | |
|-------------------------------------|------------|-------------------------------|------------|------------------------|---------------------|-----------------------------|------------|-------------------------------|-----------|------------|------------------------|---------------------|-----------------------------|------------|-------------------------------|-----------|
| | | | 1 Cycle | 2 Moped/ Scooter | 3 Motor Cycle | 4 Car/ Jeep/ Taxi etc | 5 Truck | 6 Heavy Machiner ies | Total | 1 Cycle | 2 Moped/ Scooter | 3 Motor Cycle | 4 Car/ Jeep/ Taxi etc | 5 Truck | 6 Heavy Machiner ies | Total |
| Bilaspur | Bilaspur | 60 | | 2 | 3 | 8 | | | 13 | | 2 | 7 | 1 | 1 | | 11 |
| | Bharmour | 20 | | | | 1 | | | 1 | | | | | | | 0 |
| | Chamba WL | 20 | | | | | | | 0 | | | 3 | 2 | | | 5 |
| Chamba | Pangi | 20 | | | | 1 | | | 1 | | | | 1 | | | 1 |
| | Kinnaur | 40 | | | | | 6 | | 6 | | | | 9 | | | 9 |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | | | | 7 | 1 | | 8 |
| | Kullu | 20 | | | 1 | | | | 1 | | | 2 | 3 | | | 5 |
| Kullu | Kullu WL | 20 | | | | | | | 0 | | | | 10 | | | 10 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | 1 | | 3 | 3 | | | 7 |
| | Karsog | 20 | | 1 | 3 | 2 | | | 6 | | | 1 | 2 | | | 3 |
| Mandi | Mandi | 20 | | 2 | 1 | | | | 3 | | | 1 | 1 | | | 2 |
| | Kotgarh | 20 | | 1 | 1 | | | | 2 | | | 3 | 5 | 1 | | 9 |
| | Rampur | 21 | 1 | | | | 2 | | 4 | | | | 3 | | | 3 |
| Shimla | Theog | 20 | | | 3 | 5 | 1 | | 9 | | | | 2 | | | 2 |
| Total of Territorial | | 341 | 1 | 6 | 12 | 25 | 1 | 1 | 46 | 1 | 2 | 20 | 49 | 3 | 0 | 75 |
| Kangra | Bajinath | 3 | | | | | | | | | | 2 | | | | 2 |
| Kullu | Kullu | 11 | | | | | | | | | 1 | 1 | 3 | | | 5 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | 1 | | | | 1 |
| Kullu | Parvati | 10 | | | | | | | | | | | 2 | | | 2 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | 3 | | | 3 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | 1 | | 2 | | | | 3 |
| Shimla | Kotgarh | 2 | | | | | | | | 2 | | | | | | 2 |
| Solan | Baddi | 2 | | | | | | | | | | 2 | | | | 2 |
| Total of Graziers/ Grassland | | 59 | | | | | | | | 3 | 3 | 6 | 8 | 0 | 0 | 20 |
| Grand Total | | 400 | 1 | 6 | 12 | 25 | 1 | 1 | 46 | 4 | 5 | 26 | 57 | 3 | 0 | 95 |

Source: Livelihood Survey, JICA Study Team (2017)

Vehicle(s) (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | % to Total | | | | | | | |
|-------------------------------------|------------|-------------------------------|------------|------------------------|---------------------|-----------------------------|------------|-------------------------------|------------|-------------|------------------------|---------------------|-----------------------------|------------|-------------------------------|--------------|
| | | | 1 Cycle | 2 Moped/ Scooter | 3 Motor Cycle | 4 Car/ Jeep/ Taxi etc | 5 Truck | 6 Heavy Machiner ies | Total | 1 Cycle | 2 Moped/ Scooter | 3 Motor Cycle | 4 Car/ Jeep/ Taxi etc | 5 Truck | 6 Heavy Machiner ies | Total |
| Bilaspur | Bilaspur | 60 | 0 | 4 | 10 | 9 | 1 | 0 | 24 | 0.0 | 16.7 | 41.7 | 37.5 | 4.2 | 0.0 | 100.0 |
| | Bharmour | 20 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | 0 | 0 | 3 | 2 | 0 | 0 | 5 | 0.0 | 0.0 | 60.0 | 40.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | 20 | 0 | 0 | 0 | 7 | 1 | 0 | 8 | 0.0 | 0.0 | 0.0 | 87.5 | 12.5 | 0.0 | 100.0 |
| | Kullu | 20 | 0 | 0 | 3 | 3 | 0 | 0 | 6 | 0.0 | 0.0 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu WL | 20 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 1 | 0 | 3 | 3 | 0 | 0 | 7 | 14.3 | 0.0 | 42.9 | 42.9 | 0.0 | 0.0 | 100.0 |
| | Karsog | 20 | 0 | 1 | 4 | 4 | 0 | 0 | 9 | 0.0 | 11.1 | 44.4 | 44.4 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 0 | 2 | 2 | 1 | 0 | 0 | 5 | 0.0 | 40.0 | 40.0 | 20.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | 0 | 1 | 4 | 5 | 1 | 0 | 11 | 0.0 | 9.1 | 36.4 | 45.5 | 9.1 | 0.0 | 100.0 |
| | Rampur | 21 | 1 | 0 | 0 | 5 | 0 | 1 | 7 | 14.3 | 0.0 | 0.0 | 71.4 | 0.0 | 14.3 | 100.0 |
| Shimla | Theog | 20 | 0 | 0 | 3 | 7 | 1 | 0 | 11 | 0.0 | 0.0 | 27.3 | 63.6 | 9.1 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 2 | 8 | 32 | 74 | 4 | 1 | 121 | 1.7 | 6.6 | 26.4 | 61.2 | 3.3 | 0.8 | 100.0 |
| Kangra | Bajinath | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | 0 | 1 | 1 | 3 | 0 | 0 | 5 | 0.0 | 20.0 | 20.0 | 60.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | 1 | 0 | 2 | 0 | 0 | 0 | 3 | 33.3 | 0.0 | 66.7 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Baddi | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 3 | 3 | 6 | 8 | 0 | 0 | 20 | 15.0 | 15.0 | 30.0 | 40.0 | 0.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 5 | 11 | 38 | 82 | 4 | 1 | 141 | 3.5 | 7.8 | 27.0 | 58.2 | 2.8 | 0.7 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Agricultural Equipments (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | Non JFM | | | | | | | | | | |
|-------------------------------------|------------|-------------------------------|--------------|---------------------|----------|-------------|--------------|----------------|-----------------|---------------|----------|--------------|-----------|--------------|---------------------|----------|-------------|--------------|----------------|-----------------|---------------|-----------|--------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
| | | | Bullock Cart | Treddie/ Pedal Pump | Thresher | Diesel Pump | Power Tiller | Pruning Knives | Apple Harvester | Power Sprayer | Tractor | Foot Sprayer | | Bullock Cart | Treddie/ Pedal Pump | Thresher | Diesel Pump | Power Tiller | Pruning Knives | Apple Harvester | Power Sprayer | Tractor | Foot Sprayer | |
| Bilaspur | Bilaspur | 60 | | | 1 | | | | | | 3 | | 4 | | | | | | | | | | | 0 |
| | Bharmour | 20 | | | | | | | | | | | 0 | | 3 | | | | | | | | | 3 |
| | Chamba WL | 20 | | | | | | | | | | | 0 | | 2 | | | | | | | | | 2 |
| Chamba | Pangi | 20 | | 2 | | | | | | | 1 | | 3 | | | | | | | | | | 1 | 2 |
| | Kinnaur | 40 | | 4 | | | | 1 | 1 | | 5 | | 11 | | 6 | | 3 | 4 | 2 | | | 3 | 1 | 19 |
| | Sarahan WL | 20 | | | | | | | | | | | 0 | | 3 | | | | | | | 2 | 1 | 6 |
| | Kullu | 20 | | 3 | | | | 1 | | | 3 | | 7 | | 1 | | | | | | | 3 | 1 | 5 |
| | Kullu WL | 20 | | | | | | | | | | | 0 | | 3 | | | 1 | | | | 5 | 1 | 10 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | 0 | | 1 | | | | | | | | 3 | 4 |
| | Karsog | 20 | | | | | | | | | | | 0 | | | 1 | | | | | | | 4 | 5 |
| Mandi | Mandi | 20 | | 1 | | | | | | | | 1 | 2 | | 1 | | | | | | | | 1 | 2 |
| | Kotgarh | 20 | | | | | | | | | | | 0 | | 4 | | | | | | 1 | | | 5 |
| | Rampur | 21 | | 1 | | | | | | | | 1 | 2 | | 2 | | | | | | | 1 | | 3 |
| Shimla | Theog | 20 | | 1 | | | | 1 | | | | | 5 | | | | | 1 | 1 | | | 1 | | 3 |
| Total of Territorial | | 341 | 0 | 12 | 1 | 0 | 3 | 1 | 0 | 11 | 6 | 0 | 34 | 0 | 26 | 1 | 3 | 7 | 3 | 1 | 15 | 12 | 1 | 69 |
| Kangra | Bajnath | 3 | | | | | | | | | | | | 1 | | | | | | | | | | 1 |
| Kullu | Kullu | 11 | | | | | | | | | | | | | 2 | 1 | 1 | | | 6 | | 3 | | 13 |
| Mandi | Mandi | 3 | | | | | | | | | | | | 1 | | | | | | | | | | 1 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | 1 | | | | | 8 | 2 | 4 | 2 | 20 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | 2 | | | | | | | | | | 2 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 1 | 1 | 0 | 14 | 2 | 7 | 2 | 3 | 37 |
| Grand Total | | 400 | 0 | 12 | 1 | 0 | 3 | 1 | 0 | 11 | 6 | 0 | 34 | 4 | 29 | 2 | 4 | 7 | 17 | 3 | 22 | 14 | 4 | 106 |

Source: Livelihood Survey, JICA Study Team (2017)

Agricultural Equipments (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | | | | | % to Total | | | | | | | | | | | |
|-------------------------------------|------------|-------------------------------|--------------|---------------------|----------|-------------|--------------|----------------|-----------------|---------------|-----------|--------------|------------|--------------|---------------------|------------|-------------|--------------|----------------|-----------------|---------------|-------------|--------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total | |
| | | | Bullock Cart | Treddie/ Pedal Pump | Thresher | Diesel Pump | Power Tiller | Pruning Knives | Apple Harvester | Power Sprayer | Tractor | Foot Sprayer | | Bullock Cart | Treddie/ Pedal Pump | Thresher | Diesel Pump | Power Tiller | Pruning Knives | Apple Harvester | Power Sprayer | Tractor | Foot Sprayer | | |
| Bilaspur | Bilaspur | 60 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 75.0 | 0.0 | 100.0 |
| | Bharmour | 20 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 5 | 0.0 | 40.0 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 20.0 | 20.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 0 | 10 | 0 | 3 | 5 | 3 | 0 | 8 | 1 | 0 | 30 | 0.0 | 33.3 | 0.0 | 10.0 | 16.7 | 10.0 | 0.0 | 26.7 | 3.3 | 0.0 | 0.0 | 100.0 |
| | Sarahan WL | 20 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 33.3 | 16.7 | 0.0 | 0.0 | 100.0 |
| | Kullu | 20 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 6 | 1 | 0 | 12 | 0.0 | 33.3 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 50.0 | 8.3 | 0.0 | 0.0 | 100.0 |
| | Kullu WL | 20 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 5 | 1 | 0 | 10 | 0.0 | 30.0 | 0.0 | 0.0 | 10.0 | 0.0 | 0.0 | 50.0 | 10.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 75.0 | 0.0 | 0.0 | 100.0 |
| | Karsog | 20 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 5 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 80.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0.0 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | 21 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 5 | 0.0 | 60.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 20.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 4 | 0 | 0 | 8 | 0.0 | 12.5 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 0 | 38 | 2 | 3 | 10 | 4 | 1 | 26 | 18 | 1 | 103 | 0.0 | 36.9 | 1.9 | 2.9 | 9.7 | 3.9 | 1.0 | 25.2 | 17.5 | 1.0 | 100.0 | |
| Kangra | Bajnath | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | 0 | 2 | 1 | 1 | 0 | 6 | 0 | 3 | 0 | 0 | 13 | 0.0 | 15.4 | 7.7 | 7.7 | 0.0 | 46.2 | 0.0 | 23.1 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | 0 | 1 | 0 | 0 | 8 | 2 | 4 | 2 | 3 | 0 | 20 | 0.0 | 5.0 | 0.0 | 0.0 | 40.0 | 10.0 | 20.0 | 10.0 | 15.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 4 | 3 | 1 | 1 | 8 | 8 | 4 | 5 | 3 | 0 | 37 | 10.8 | 8.1 | 2.7 | 2.7 | 21.6 | 21.6 | 10.8 | 13.5 | 8.1 | 0.0 | 100.0 | |
| Grand Total | | 400 | 4 | 41 | 3 | 4 | 18 | 12 | 5 | 31 | 21 | 1 | 140 | 2.9 | 29.3 | 2.1 | 2.9 | 12.9 | 8.6 | 3.6 | 22.1 | 15.0 | 0.7 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

6. Landholding
6.1 Cultivable Own Land (Irrigated) (1)

| District | Division | they were interviewed | No of Respondents Interviewed | Counts of Responses | | | Average Size of the Plot (Bigha*) | | | Owner | | | | | | | | | | Total | | | | | |
|-------------------------------------|------------|-----------------------|-------------------------------|---------------------|-----------|-----------|-----------------------------------|------------|------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|---|------------------------|--------------------------------------|--------------------------|----------|---------------------------------|-----------------------------------|--|---|-----------|
| | | | | JFM | Non JFM | Total | JFM | Non JFM | Total | JFM | | | | | Non JFM | | | | | | | | | | |
| | | | | | | | | | | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Male Member of the Family | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Male Member of the Family | |
| Bilaspur | Bilaspur | | 60 | 4 | | 4 | 5.0 | | 5.0 | 3 | | | | | 1 | | | | | | | | | 0 | |
| | Bharmour | | 20 | | | 0 | | | | | | | | | | | | | | | | | | 0 | |
| | Chamba WL | | 20 | | | 0 | | | | | | | | | | | | | | | | | | 0 | |
| Chamba | Pangi | | 20 | 9 | 8 | 17 | 2.3 | 3.0 | 2.6 | 6 | | | 2 | 1 | | | 9 | 6 | | 2 | | | | 8 | |
| | Kinnaur | | 40 | 2 | 3 | 5 | 3.0 | 4.7 | 4.0 | 2 | | | | | | 2 | 2 | | 1 | | | | | 3 | |
| Kinnaur | Sarahan WL | | 20 | | 1 | 1 | | 2.0 | 2.0 | | | | | | | | | | | | | | | 0 | |
| | Kulla | | 20 | 1 | 6 | 7 | 1.0 | 3.8 | 3.4 | 1 | | | | | | 1 | 5 | | 1 | | | | | 6 | |
| Kullu | Kulla WL | | 20 | | 2 | 2 | | 5.5 | 5.5 | | | | | | | | 0 | 2 | | | | | | 2 | |
| Lahaul & Spiti | Spiti(W/L) | | 20 | | 10 | 10 | | 7.6 | 7.6 | | | | | | | 0 | 6 | 1 | 2 | | 1 | | | 10 | |
| | Karsog | | 20 | 2 | | 2 | 3.5 | | 3.5 | 1 | | | 1 | | | | 2 | | | | | | | 0 | |
| Mandi | Mandi | | 20 | 2 | 1 | 3 | 5.0 | 4.0 | 4.7 | | | | 1 | | | 2 | 1 | | | | | | | 1 | |
| | Kotgarh | | 20 | 2 | | 2 | 3.0 | | 3.0 | 2 | | | | | | | | | | | | | | 0 | |
| | Rampur | | 21 | | | 0 | | | | | | | | | | | | | | | | | | 0 | |
| | Theog | | 20 | 4 | | 4 | 3.0 | | 3.0 | 3 | | | 1 | | | | | | | | | | | 0 | |
| Total Territorial | | | 341 | 26 | 31 | 57 | 3.2 | 5.0 | 4.2 | 18 | 0 | 4 | 3 | 0 | 1 | 0 | 26 | 22 | 1 | 6 | 0 | 1 | 0 | 0 | 30 |
| Kangra | Bainath | Thrass | 3 | | 3 | 3 | | 3.3 | 3.3 | | | | | | | | | 3 | | | | | | | 3 |
| Kullu | Kulla | Thrass | 11 | | 6 | 6 | | 1.4 | 1.4 | | | | | | | | | 6 | | | | | | | 6 |
| Mandi | Mandi | Thrass | 3 | | | 0 | | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | Thrass | 1 | | 1 | 1 | | 4 | 4 | | | | | | | | | 1 | | | | | | | 1 |
| Kullu | Parvati | Mahana, Kulla | 10 | | 3 | 3 | | 1.7 | 1.7 | | | | | | | | | 3 | | | | | | | 3 |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | | 9 | 9 | | 7.8 | 7.8 | | | | | | | | | 8 | | | | | 1 | | 9 |
| Shimla | Theog | Lippa, Kinnaur | 1 | | | 0 | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | Hatu | 5 | | | 0 | | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Kotgarh | Hatu | 2 | | | 0 | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Backfi | Hatu | 2 | | | 0 | | | | | | | | | | | | | | | | | | | 0 |
| Total of Graziers/ Grassland | | | 59 | 0 | 22 | 22 | | 4.4 | 4.4 | | | | | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 1 | 0 | 0 | 0 | 22 |
| Grand Total | | | 400 | 26 | 53 | 79 | 3.2 | 4.7 | 4.2 | 18 | 0 | 4 | 3 | 0 | 1 | 0 | 26 | 43 | 1 | 6 | 1 | 1 | 0 | 0 | 52 |

* 1 bigha = 800 sq. m / 1 biswa=40 sq. m
Source: Livelihood Survey, JCA Study Team (2017)

6.1 Cultivable Own Land (Irrigated) (2)

| District | Division | they were interviewed | No of Respondents Interviewed | Owner | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-----------------------|-------------------------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|---|-----------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|---|-------------|-------------|---------------|
| | | | | Total | | | | | | | | | | | | | % to Total | | | | |
| | | | | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Male Member of the Family | Total | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Male Member of the Family | Total | | |
| Bilaspur | Bilaspur | | 60 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 75.0 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Bharmour | | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0.0 |
| | Chamba WL | | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0.0 |
| Chamba | Pangi | | 20 | 12 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 17 | 70.6 | 0.0 | 23.5 | 5.9 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | | 40 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 80.0 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 0.0 |
| | Kulla | | 20 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 85.7 | 0.0 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kulla WL | | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | | 20 | 6 | 1 | 2 | 0 | 1 | 0 | 0 | 10 | 60.0 | 10.0 | 20.0 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Karsog | | 20 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | | 20 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 3 | 33.3 | 0.0 | 0.0 | 33.3 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0.0 |
| Shimla | Theog | | 20 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 75.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total Territorial | | | 341 | 40 | 1 | 10 | 3 | 1 | 1 | 0 | 56 | 71.4 | 1.8 | 17.9 | 5.4 | 1.8 | 1.8 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Bainath | Thrass | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kulla | Thrass | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | Thrass | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | Thrass | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | Mahana, Kulla | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 88.9 | 0.0 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | Lippa, Kinnaur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | Hatu | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | Hatu | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0.0 |
| Solan | Backfi | Hatu | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | | 59 | 21 | 0 | 0 | 1 | 0 | 1 | 0 | 22 | 95.45 | 0.00 | 0.00 | 4.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
| Grand Total | | | 400 | 61 | 1 | 10 | 4 | 1 | 1 | 0 | 78 | 78.21 | 1.28 | 12.82 | 5.13 | 1.28 | 1.28 | 0.00 | 0.00 | 0.00 | 100.00 |

* 1 bigha = 800 sq. m / 1 biswa=40 sq. m
Source: Livelihood Survey, JCA Study Team (2017)

6.2 Cultivable Own Land (Unirrigated) (1)

| District | Division | they were in | No of Respondents Interviewed | Counts of Responses | | | Average Size of the Plot (Bigha*) | | | Owner | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|----------------|----------------|-------------------------------|---------------------|------------|------------|-----------------------------------|------------|------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|---------------------------------------|----------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|---------------------------------------|----------|----------|----------|----------|----------|------------|
| | | | | JFM | Non JFM | Total | JFM | Non JFM | Total | JFM | | | | | | | | Non JFM | | | | | | | | | | | | |
| | | | | | | | | | | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and other Member of the Family | Joint Ownership by all family members | Total | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and other Member of the Family | Joint Ownership by all family members | Total | | | | | |
| Bilaspur | Bilaspur | | 60 | 38 | 19 | 57 | 3.8 | 3.8 | 3.8 | 29 | | | 3 | 3 | | 1 | | | 36 | 15 | | | | | | | | | | 17 |
| | Bharnour | | 20 | 10 | 9 | 19 | 3.0 | 2.7 | 2.8 | 10 | | | | | | | | | 10 | 8 | | | | | | | | | | 8 |
| | Chamba WL | | 20 | | 20 | 20 | | 2.8 | 2.8 | | | | | | | | | | 0 | 13 | 2 | 2 | 1 | | | | | | | 18 |
| Chamba | Pangi | | 20 | | 2 | 2 | | 2.5 | 2.5 | | | | | | | | | | 0 | 1 | | | 1 | | | | | | | 2 |
| | Kinnaur | | 40 | 11 | 13 | 24 | 4.1 | 3.4 | 3.8 | 8 | | 1 | 2 | | | | | | 11 | 12 | | | | | | | | | | 12 |
| | Sarahan WL | | 20 | | 18 | 18 | | 7.1 | 7.1 | | 5 | | 1 | | | | | | 6 | 16 | | | | | 2 | | | | | 18 |
| | Kulla | | 20 | 7 | 2 | 9 | 3.7 | 7.0 | 4.2 | | | | | | | | | | 0 | 3 | | | | | | | | | | 3 |
| | Kulla WL | | 20 | | 11 | 11 | | 2.3 | 2.3 | | | | | | | | | | 0 | 4 | | 1 | 2 | | | | | | | 7 |
| | Lahaul & Spiti | | 20 | | 3 | 3 | | 9.7 | 9.7 | | | | | | | | | | 0 | 1 | | | | | | | | | | 2 |
| | Karsog | | 20 | 10 | 10 | 20 | 3.3 | 3.4 | 3.3 | 8 | | 1 | 1 | | | | | | 10 | 9 | | | | | | | | | | 10 |
| Mandi | Mandi | | 20 | 8 | 11 | 19 | 8.9 | 6.7 | 7.6 | 8 | | | | | | | | | 8 | 10 | | | | | | 1 | | | | 11 |
| | Kotgarh | | 20 | 4 | 6 | 10 | 1.3 | 1.6 | 1.5 | 4 | | | | | | | | | 4 | 5 | | | | | | | | | | 5 |
| | Rampur | | 21 | 10 | 11 | 21 | 2.9 | 4.7 | 3.8 | 5 | | | 4 | | | | | | 9 | 8 | | | 1 | | | | | | | 9 |
| | Theog | | 20 | 7 | 9 | 16 | 4.5 | 2.5 | 3.4 | 3 | | | 4 | | | | | | 7 | 5 | | 3 | | | | | | 1 | | 9 |
| Shimla | Theog | | 20 | 7 | 9 | 16 | 4.5 | 2.5 | 3.4 | 3 | | | 4 | | | | | | 7 | 5 | | 3 | | | | | | 1 | | 9 |
| Total of Territorial | | | 341 | 105 | 144 | 249 | 4.0 | 4.1 | 4.1 | 80 | 0 | 13 | 7 | 0 | 1 | 0 | 0 | 101 | 110 | 2 | 11 | 5 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 131 |
| Kangra | Bainath | Thrass | 3 | | 1 | 1 | | 3.0 | 3.0 | | | | | | | | | | | 2 | | | | | | | | | | 3 |
| | Kulla | Thrass | 11 | | 6 | 6 | | 5.1 | 5.1 | | | | | | | | | | | 6 | | | | | | | | | | 6 |
| | Mandi | Thrass | 3 | | 3 | 3 | | 3.7 | 3.7 | | | | | | | | | | | 3 | | | | | | | | | | 3 |
| | Kangra | Palampur | 1 | | | 0 | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 |
| | Kulla | Parvati | 10 | | 9 | 9 | | 4.4 | 4.4 | | | | | | | | | | | 9 | | | | | | | | | | 9 |
| | Kinnaur | Lippa, Kinnaur | 21 | | 8 | 8 | | 1.3 | 1.3 | | | | | | | | | | | 8 | | 1 | | | | | | | | 8 |
| | Shimla | Theog | 1 | | 0 | 0 | | | | | | | | | | | | | | | 7 | | | | | | | | | 0 |
| | Solan | Nalagarh | 5 | | 1 | 1 | | 2.0 | 2.0 | | | | | | | | | | | | 1 | | | | | | | | | 1 |
| | Shimla | Kotgarh | 2 | | 0 | 0 | | | | | | | | | | | | | | | 0 | | | | | | | | | 0 |
| | Solan | Baddi | 2 | | 0 | 0 | | | | | | | | | | | | | | | 0 | | | | | | | | | 0 |
| Total of Graziers/ Grassland | | | 59 | 0 | 28 | 28 | 3.4 | 3.4 | 3.4 | 0 | 0 | 13 | 7 | 0 | 1 | 0 | 0 | 0 | 29 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 30 |
| Grand Total | | | 400 | 105 | 172 | 277 | 4.0 | 4.0 | 4.0 | 80 | 0 | 13 | 7 | 0 | 1 | 0 | 0 | 101 | 139 | 3 | 11 | 5 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 161 |

* 1 Bigha = 800 sq. m / 1 biswa=40 sq. m
Source: Livelihood Survey, JCA Study Team (2017)

6.2 Cultivable Own Land (Unirrigated) (2)

| District | Division | they were in | No of Respondents Interviewed | Owner | | | | | | | | | | | | | | | | | |
|-------------------------------------|----------------|----------------|-------------------------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|--|---------------------------------------|------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|--|---------------------------------------|--------------|
| | | | | Total | | | | | | | | % to Total | | | | | | | | | |
| | | | | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Member of the Family | Joint Ownership by all family members | Total | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Member of the Family | Joint Ownership by all family members | Total |
| Bilaspur | Bilaspur | | 60 | 44 | 0 | 5 | 3 | 0 | 1 | 0 | 0 | 53 | 83.0 | 0.0 | 9.4 | 5.7 | 0.0 | 1.9 | 0.0 | 0.0 | 100.0 |
| | Bharnour | | 20 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | | 20 | 13 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 18 | 72.2 | 11.1 | 11.1 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | | 20 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | | 40 | 20 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 23 | 87.0 | 0.0 | 4.3 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Sarahan WL | | 20 | 21 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 24 | 87.5 | 0.0 | 0.0 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kulla | | 20 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kulla WL | | 20 | 4 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 7 | 57.1 | 0.0 | 14.3 | 28.6 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Lahaul & Spiti | | 20 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Karsog | | 20 | 17 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 20 | 85.0 | 0.0 | 5.0 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 | 100.0 |
| Mandi | Mandi | | 20 | 18 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 | 94.7 | 0.0 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | | 20 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | | 21 | 13 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 18 | 72.2 | 0.0 | 27.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Theog | | 20 | 8 | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 16 | 50.0 | 0.0 | 43.8 | 0.0 | 0.0 | 0.0 | 6.3 | 0.0 | 100.0 |
| Total of Territorial | | | 341 | 190 | 2 | 24 | 12 | 0 | 2 | 2 | 0 | 232 | 81.9 | 0.9 | 10.3 | 5.2 | 0.0 | 0.9 | 0.9 | 0.0 | 100.0 |
| Kangra | Bainath | Thrass | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kulla | Thrass | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Mandi | Thrass | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kangra | Palampur | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kulla | Parvati | 10 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | Lippa, Kinnaur | 21 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 87.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 0.0 |
| | Solan | Nalagarh | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 0.0 |
| | Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | | 59 | 29 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 96.7 | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Grand Total | | | 400 | 219 | 3 | 24 | 12 | 0 | 2 | 2 | 0 | 262 | 83.6 | 1.1 | 9.2 | 4.6 | 0.0 | 0.8 | 0.8 | 0.0 | 100.0 |

* 1 Bigha = 800 sq. m / 1 biswa=40 sq. m
Source: Livelihood Survey, JCA Study Team (2017)

6.5 Own Forest and Grasslands (1)

| District | Division | they were interviewed | No of Respondents Interviewed | Forest | | | | | | | | | Grassland | | | | | | | | |
|-------------------------------------|------------|-----------------------|-------------------------------|-----------------|----------|-----------|----------------------------------|------------|------------|-----------------|-----------|------------|----------------------------|------------|------------|--|--|--|--|--|--|
| | | | | No of Responses | | | Average Area Owned (Unit: bigha) | | | No of Responses | | | Average Area Owned (bigha) | | | | | | | | |
| | | | | JFM | Non JFM | Total | JFM | Non JFM | Total | JFM | Non JFM | Total | JFM | Non JFM | Total | | | | | | |
| Bilaspur | Bilaspur | | 60 | 2 | 2 | 4 | 1.3 | 0.7 | 1.0 | 31 | 18 | 49 | 4.5 | 3.1 | 4.0 | | | | | | |
| | Bharmour | | 20 | | | 0 | | | | 2 | 1 | 3 | 6.0 | 4.0 | 5.3 | | | | | | |
| | Chamba WL | | 20 | | | 0 | | | | 9 | 9 | | | 4.2 | 4.2 | | | | | | |
| Chamba | Pangi | | 20 | | | 0 | | | | 3 | | 3 | 3.0 | | 3.0 | | | | | | |
| | Kinnaur | | 40 | | | 0 | | | | 2 | 5 | 7 | 2.3 | 2.5 | 2.4 | | | | | | |
| Kinnaur | Sarahan WL | | 20 | | | 0 | | | | | 12 | 12 | | 4.4 | 4.4 | | | | | | |
| | Kullu | | 20 | | | 0 | | | | 1 | 1 | 2 | 3.0 | 1.0 | 2.0 | | | | | | |
| Kullu | Kullu WL | | 20 | | | 0 | | | | 2 | 2 | | | 1.3 | 1.3 | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | | 20 | | | 0 | | | | | 2 | 2 | | 3.8 | 3.8 | | | | | | |
| | Karsog | | 20 | | | 0 | | | | 5 | 3 | 8 | 2.4 | 1.8 | 2.2 | | | | | | |
| Mandi | Mandi | | 20 | 1 | 2 | 3 | 2.5 | 2.8 | 2.7 | 5 | 9 | 14 | 7.2 | 4.8 | 5.6 | | | | | | |
| | Kotgarh | | 20 | | | 0 | | | | 6 | 3 | 9 | 1.8 | 5.0 | 2.9 | | | | | | |
| | Rampur | | 21 | | 1 | 1 | | 2.0 | 2.0 | 8 | 8 | 16 | 2.8 | 3.4 | 3.1 | | | | | | |
| Shimla | Theog | | 20 | | | 0 | | | | 11 | 8 | 19 | 5.3 | 3.4 | 4.5 | | | | | | |
| Total of Territorial | | | 341 | 3 | 5 | 8 | 1.7 | 1.8 | 1.7 | 74 | 81 | 155 | 4.1 | 3.6 | 3.9 | | | | | | |
| Kangra | Bajjnath | Thrass | 3 | | | 0 | | | | | 1 | 1 | | 2 | 2 | | | | | | |
| Kullu | Kullu | Thrass | 11 | | | 0 | | | | | | | | | | | | | | | |
| Mandi | Mandi | Thrass | 3 | | | 0 | | | | | | | | | | | | | | | |
| Kangra | Palampur | Thrass | 1 | | | 0 | | | | | | | | | | | | | | | |
| Kullu | Parvati | Malana, Kullu | 10 | | 2 | 2 | | 2 | 2 | | 1 | 1 | | 4 | 4 | | | | | | |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | | 1 | 1 | | | | | 2 | 2 | | 2 | 2 | | | | | | |
| Shimla | Theog | Lippa, Kinnaur | 1 | | | 0 | | | | | | | | | | | | | | | |
| Solan | Nalagarh | Hatu | 5 | | | 0 | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | Hatu | 2 | | | 0 | | | | | | | | | | | | | | | |
| Solan | Baddi | Hatu | 2 | | | 0 | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | | 59 | 0 | 3 | 3 | | 2 | 2 | 0 | 4 | 4 | | 2.5 | 2.5 | | | | | | |
| Grand Total | | | 400 | 3 | 8 | 11 | 1.7 | 1.9 | 1.8 | 74 | 85 | 159 | 4.1 | 3.6 | 3.8 | | | | | | |

* 1 bigha = 800 sq. m 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

6.5 Own Forest and Grasslands (2)

| District | Division | they were interviewed | No of Respondents Interviewed | Owner | | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-----------------------|-------------------------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|--|---------------------------------------|-----------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|--|---------------------------------------|----------|------------|
| | | | | Forest Land | | | | | | | | Grassland | | | | | | | | | | |
| | | | | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Member of the Family | Joint Ownership by all family members | Total | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Member of the Family | Joint Ownership by all family members | Total | |
| Bilaspur | Bilaspur | | 60 | 3 | | | | | | | | | | | | | | | | | 42 | |
| | Bharmour | | 20 | | | | | | | | | | | | | | | | | | | 3 |
| | Chamba WL | | 20 | | | | | | | | | | | | | | | | | | | 8 |
| Chamba | Pangi | | 20 | | | | | | | | | | | | | | | | | | | 2 |
| | Kinnaur | | 40 | | | | | | | | | | | | | | | | | | | 7 |
| Kinnaur | Sarahan WL | | 20 | | | | | | | | | | | | | | | | | | | 12 |
| | Kullu | | 20 | | | | | | | | | | | | | | | | | | | 2 |
| Kullu | Kullu WL | | 20 | | | | | | | | | | | | | | | | | | | 1 |
| Lahaul & Spiti | Spiti(W/L) | | 20 | | | | | | | | | | | | | | | | | | | 2 |
| | Karsog | | 20 | | | | | | | | | | | | | | | | | | | 7 |
| Mandi | Mandi | | 20 | 3 | | | | | | | | | | | | | | | | | | 13 |
| | Kotgarh | | 20 | | | | | | | | | | | | | | | | | | | 9 |
| | Rampur | | 21 | 1 | | | | | | | | | | | | | | | | | | 15 |
| Shimla | Theog | | 20 | | | | | | | | | | | | | | | | | | | 20 |
| Total of Territorial | | | 341 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 143 |
| Kangra | Bajjnath | Thrass | 3 | | | | | | | | | | | | | | | | | | | 1 |
| Kullu | Kullu | Thrass | 11 | | | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | Thrass | 3 | | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | Thrass | 1 | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Parvati | Malana, Kullu | 10 | | | | | | | | | | | | | | | | | | | 1 |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Theog | Lippa, Kinnaur | 1 | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | Hatu | 5 | | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Kotgarh | Hatu | 2 | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Baddi | Hatu | 2 | | | | | | | | | | | | | | | | | | | 0 |
| Total of Graziers/ Grassland | | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Grand Total | | | 400 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145 |

* 1 bigha = 800 sq. m 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

6.6 FRA

| District | Division | Villages they were interviewed | No of Respondents Interviewed | Land Title Received | | | Claim Submitted | | |
|-------------------------------------|------------|--------------------------------|-------------------------------|---------------------|----------|----------|-----------------|----------|----------|
| | | | | JFM | Non JFM | Total | JFM | Non JFM | Total |
| Bilaspur | Bilaspur | | 60 | | | | | | 0 |
| | Bharmour | | 20 | | | | | | 0 |
| | Chamba WL | | 20 | | | | | | 0 |
| Chamba | Pangi | | 20 | | | | | | 0 |
| | Kinnaur | | 40 | 1 | | 1 | | | 0 |
| Kinnaur | Sarahan WL | | 20 | | | | | | 0 |
| | Kullu | | 20 | | | | | | 0 |
| Kullu | Kullu WL | | 20 | | | | | | 0 |
| Lahaul & Spiti | Spiti(W/L) | | 20 | | | | | | 0 |
| | Karsog | | 20 | | | | | | 0 |
| Mandi | Mandi | | 20 | | | | | | 0 |
| | Kotgarh | | 20 | | | | | | 0 |
| | Rampur | | 21 | | | | | | 0 |
| Shimla | Theog | | 20 | | | | | | 0 |
| Total of Territorial | | | 341 | 1 | 0 | 1 | 0 | 0 | 0 |
| Kangra | Bajinath | Thrass | 3 | | | | | | 0 |
| Kullu | Kullu | Thrass | 11 | | | | | | 0 |
| Mandi | Mandi | Thrass | 3 | | | | | | 0 |
| Kangra | Palampur | Thrass | 1 | | | | | | 0 |
| Kullu | Parvati | Malana, Kullu | 10 | | | | | | 0 |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | | 1 | 1 | | 7 | 7 |
| Shimla | Theog | Lippa, Kinnaur | 1 | | | | | | 0 |
| Solan | Nalagarh | Hatu | 5 | | | | | 1 | 1 |
| Shimla | Kotgarh | Hatu | 2 | | | | | | 0 |
| Solan | Baddi | Hatu | 2 | | | | | | 0 |
| Total of Graziers/ Grassland | | | 59 | 0 | 1 | 1 | 0 | 8 | 8 |
| Grand Total | | | 400 | 1 | 1 | 2 | 0 | 8 | 8 |

* 1 bigha = 800 sq. m | biswa=40 sq. m
 Source: Livelihood Survey, JICA Study Team (2017)

6.7 Irrigation
 Sources of Irrigation

| District | Division | Villages they were interviewed | No of Respondents Interviewed | Sources of Irrigation | | | | | | | | | | | % | | | | | | | | | | | | | | |
|-------------------------------------|------------|--------------------------------|-------------------------------|-----------------------|-------------------|-----------------|--------------------|------------------------------|---------------------------------|---------------|--------------------------|----------|-----------|----------------|-------------------|-----------------|--------------------|------------------------------|---------------------------------|---------------|--------------------------|------------|------------|--------------|------------|------------|------------|--------------|-------|
| | | | | Dug Well (Own) | Dug Well (Common) | Bore Well (Own) | Bore Well (Common) | Pond/ Water Harvesting (Own) | Pond/ Water Harvesting (Common) | Natural/ Rain | Irrigation Pipe/ Channel | Mix | Total | Dug Well (Own) | Dug Well (Common) | Bore Well (Own) | Bore Well (Common) | Pond/ Water Harvesting (Own) | Pond/ Water Harvesting (Common) | Natural/ Rain | Irrigation Pipe/ Channel | Mix | Total | | | | | | |
| Bilaspur | Bilaspur | | 60 | 1 | | | | 1 | | | | | | | | 3 | 33.3 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Bharmour | | 20 | | | | | | | | | | | | | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | | 20 | | | | | | | | | | | | | 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | | 20 | | | | | | | | | | | | | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | |
| | Kinnaur | | 40 | | | | 1 | 1 | 1 | | | | | | | 5 | 0.0 | 0.0 | 0.0 | 20.0 | 20.0 | 20.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | | 20 | | | | | | | | | | | | | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | | 20 | | | | | | | | | | | | | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu WL | | 20 | | | | | | | | | | | | | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | | 20 | | | | | | | | | | | | | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Karsog | | 20 | | | | 1 | 1 | 1 | | | | | | | 5 | 0.0 | 0.0 | 0.0 | 20.0 | 20.0 | 20.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | | 20 | | | | | | | | | | | | | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | | 20 | | | | | | | | | | | | | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | | 21 | | | | | | | | | | | | | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | | 20 | | | | | | 1 | | | | | | | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 50.0 | 0.0 | 50.0 | 0.0 | 150.0 | |
| Total of Territorial | | | 341 | 1 | 0 | 1 | 2 | 4 | 2 | 30 | 1 | 1 | 1 | 41 | 2.4 | 0.0 | 2.4 | 4.9 | 9.8 | 4.9 | 73.2 | 2.4 | 2.4 | 102.4 | 0.0 | 0.0 | 0.0 | 102.4 | |
| Kangra | Bajinath | Thrass | 3 | | | 1 | | | | | | | | | | 2 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | Thrass | 11 | 1 | | | | | | 1 | | | | | | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | Thrass | 3 | | | | | | | | | | | | | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | |
| Kangra | Palampur | Thrass | 1 | | | | | | | | | | | | | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | |
| Kullu | Parvati | Malana, Kullu | 10 | | | | | | | | | | | | | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | | 2 | | | | | | | | | | | 5 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | Lippa, Kinnaur | 1 | | | | | | | | | | | | | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | |
| Solan | Nalagarh | Hatu | 5 | | | | 2 | | | | | | | | | 2 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | Hatu | 2 | | | | | | | | | | | | | 0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | |
| Solan | Baddi | Hatu | 2 | | | | | | 1 | | | | | | | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | | 59 | 3 | 1 | 2 | 1 | 0 | 1 | 3 | 2 | 0 | 13 | 23.1 | 7.7 | 15.4 | 7.7 | 0.0 | 7.7 | 23.1 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Grand Total | | | 400 | 4 | 1 | 3 | 3 | 4 | 3 | 35 | 3 | 1 | 54 | 7.4 | 1.9 | 5.6 | 5.6 | 7.4 | 5.6 | 61.1 | 5.6 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 101.9 | |

* 1 bigha = 800 sq. m | biswa=40 sq. m
 Source: Livelihood Survey, JICA Study Team (2017)

Methods of Irrigation

| District | Division | Villages they were interviewed | No of Respondents Interviewed | Sources of Irrigation | | | | | | % to Total | | | | | | | | | | |
|-------------------------------------|------------|--------------------------------|-------------------------------|-----------------------|----------|-----------------|-----------------|----------|------------------|------------|-------------|------------|-----------------|-----------------|------------|------------------|-------------|-------------|------------|--------------|
| | | | | Gravity | Pump Up | Drip Irrigation | Lift Irrigation | Mix | Irrigation Canal | Total | Gravity | Pump Up | Drip Irrigation | Lift Irrigation | Mix | Irrigation Canal | Total | | | |
| Bilaspur | Bilaspur | | 60 | | 1 | | | | | | 2 | 0.0 | 50.0 | 0.0 | | | 50.0 | 0.0 | 0.0 | 100.0 |
| | Bharmour | | 20 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| | Chamba WL | | 20 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| Chamba | Pangi | | 20 | 16 | | | | | | | 16 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | | 40 | 9 | | | | | | | 9 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Sarahan WL | | 20 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| | Kullu | | 20 | 3 | 4 | | | 1 | 1 | | 9 | 33.3 | 44.4 | 0.0 | 11.1 | 11.1 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu WL | | 20 | 2 | | | | | | | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | | 20 | 10 | | | | 2 | | | 12 | 83.3 | 0.0 | 0.0 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Karsog | | 20 | 2 | | | | | | | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | | 20 | 1 | | 1 | | | | | 2 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | | 20 | 3 | | | | 1 | | | 4 | 75.0 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | | 21 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| Shimla | Theog | | 20 | 1 | | | | | | | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Territorial | | | 341 | 47 | 5 | 1 | 5 | 1 | 0 | 59 | 79.7 | 8.5 | 1.7 | 8.8 | 1.7 | 0.0 | 16.7 | 2.8 | 2.8 | 100.0 |
| Kangra | Bajnath | Thrass | 3 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| | Kullu | Thrass | 11 | | 1 | | | | 1 | | 2 | 0.0 | 50.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | Thrass | 3 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | Thrass | 1 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| | Kullu | Parvati | 10 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | 3 | | | | 2 | | 2 | 7 | 42.9 | 0.0 | 0.0 | 28.6 | 0.0 | 28.6 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | Lippa, Kinnaur | 1 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | Hatu | 5 | 2 | | | | 1 | | | 3 | 66.7 | 0.0 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | Hatu | 2 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| Solan | Baddi | Hatu | 2 | | | | | | | | 0 | - | - | - | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | | 59 | 5 | 1 | 0 | 3 | 1 | 2 | 12 | 41.7 | 8.3 | 0.0 | 25.0 | 8.3 | 16.7 | 0.0 | 16.7 | 0.0 | 100.0 |
| Grand Total | | | 400 | 82 | 6 | 1 | 8 | 2 | 2 | 71 | 73.2 | 8.5 | 1.4 | 11.3 | 2.8 | 2.8 | 0.0 | 2.8 | 2.8 | 100.0 |

* 1 bigha = 600 sq. m 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

6.8 Homestead (1)

Size of Plot and Owners

| District | Division | they were interviewed | Intspondents | Average Areas for Homestead in Biswas | | | | Owner | | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-----------------------|--------------|---------------------------------------|-----------------|-------------|---------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|--|---------------------------------------|------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|--|---------------------------------------|----------|------------|
| | | | | House | Yard for Cattle | Home Garden | Total Average | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Member of the Family | Joint Ownership by all family members | Total | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Member of the Family | Joint Ownership by all family members | Total | |
| Bilaspur | Bilaspur | | 60 | 3.6 | 1.8 | 1.9 | 6.0 | 22 | 1 | 3 | 1 | | | 2 | | | 29 | 14 | | | | | | | | 17 |
| | Bharmour | | 20 | 3.1 | 1.1 | 1.3 | 4.1 | 9 | | | | | | | | | 9 | 8 | | | | | | | | 8 |
| | Chamba WL | | 20 | 2.4 | 1.0 | 2.0 | 2.8 | | | | | | | | | | 0 | 11 | | 3 | | | | | | 14 |
| Chamba | Pangi | | 20 | 2.6 | 0.9 | 1.5 | 3.2 | 4 | 1 | 1 | 1 | | | | | | 7 | 5 | | 2 | | | | | | 7 |
| | Kinnaur | | 40 | 3.5 | 1.8 | 3.1 | 5.4 | 13 | | | 1 | 2 | | | | | 16 | 13 | | 1 | | | | | | 14 |
| | Sarahan WL | | 20 | 3.7 | 1.6 | 5.7 | 5.6 | | | | | | | | | | 0 | 16 | | | 2 | | | | | 18 |
| | Kullu | | 20 | 3.2 | 1.2 | 4.0 | 4.0 | 8 | | | | | | | | 1 | 9 | 9 | | 1 | | | | | | 10 |
| | Kullu WL | | 20 | 3.4 | 1.3 | 1.5 | 3.5 | | | | | | | | | | 0 | 9 | | 1 | 1 | | | | 1 | 12 |
| Lahaul & Spiti | Spiti(W/L) | | 20 | 3.6 | 1.1 | 1.3 | 4.0 | | | | | | | | | | 0 | 11 | 2 | | 1 | | | | | 16 |
| | Karsog | | 20 | 2.6 | 1.1 | 2.1 | 4.3 | 7 | | | | | | | | | 8 | 8 | | | | | | | | 10 |
| Mandi | Mandi | | 20 | 2.5 | 1.2 | 1.8 | 4.5 | 6 | | | 1 | | | | | | 7 | 7 | | | | | 2 | | | 9 |
| | Kotgarh | | 20 | 2.8 | 0.8 | 1.0 | 3.6 | 8 | | 2 | | | | | | | 8 | 8 | | | | | | 1 | | 9 |
| | Rampur | | 21 | 2.9 | 1.1 | 1.8 | 3.8 | 5 | | 4 | | | | | | | 9 | 7 | | 2 | | | | | | 9 |
| Shimla | Theog | | 20 | 3.3 | 1.2 | 2.8 | 4.7 | 5 | 1 | 4 | | | | | | | 10 | 5 | | 3 | | | | | | 8 |
| Total of Territorial | | | 341 | 3.2 | 1.4 | 2.1 | 4.5 | 87 | 3 | 15 | 6 | 0 | 2 | 1 | 114 | 131 | 2 | 17 | 3 | 1 | 2 | 3 | 2 | 2 | 2 | 161 |
| Kangra | Bajnath | Thrass | 3 | 4.0 | 1.0 | 1.5 | 5.7 | | | | | | | | | | 2 | 2 | | | | | | | | 2 |
| | Kullu | Thrass | 11 | | 6.0 | 6.0 | | | | | | | | | | | 8 | | | | | | | | | 8 |
| Mandi | Mandi | Thrass | 3 | 1.7 | 1.0 | 2.0 | 4.0 | 1 | | | | | | | | | 1 | | | | | | | | | 1 |
| Kangra | Palampur | Thrass | 1 | 3.0 | | | 3.0 | | | | | | | | | | 1 | | | | | | | | | 1 |
| | Kullu | Parvati | 10 | 4.0 | 1.5 | 15.7 | 8.9 | | | | | | | | | | 7 | | | | | | | | | 7 |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | 1.8 | 0.8 | 2.2 | 2.8 | | | | | | | | | | 18 | | 1 | | | | | | | 19 |
| Shimla | Theog | Lippa, Kinnaur | 1 | | | | 0.0 | | | | | | | | | | 0 | | | | | | | | | 0 |
| Solan | Nalagarh | Hatu | 5 | 1.5 | 1.8 | | 2.9 | | | | | | | | | | 4 | | | | | | | | | 4 |
| Shimla | Kotgarh | Hatu | 2 | | | | 0.0 | | | | | | | | | | 0 | | | | | | | | | 0 |
| Solan | Baddi | Hatu | 2 | 5.0 | 1.9 | | 6.9 | | | | | | | | | | 0 | | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| Total of Graziers/ Grassland | | | 59 | 2.8 | 1.2 | 5.4 | 4.9 | 87 | 3 | 15 | 6 | 0 | 2 | 1 | 114 | 131 | 2 | 18 | 3 | 1 | 2 | 3 | 2 | 2 | 2 | 205 |

* 1 bigha = 600 sq. m 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

6. Homestead (2)

Size of Plot and Owners

| District | Division | they were interviewed | respondents | Total | | | | | | | | | % to Total | | | | | | | | | |
|-------------------------------------|------------|-----------------------|-------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|--|---------------------------------------|------------|------------------------|--------------------------------------|--------------------------|---------------------------------|-----------------------------------|--|--|---------------------------------------|--------------|-------|
| | | | | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Member of the Family | Joint Ownership by all family members | Total | Male Head of Household | Spouse of the Male Head of Household | Female Head of Household | Other Male Member of the Family | Other Female Member of the Family | Joint Ownership of Male Head of Household and Spouse | Joint Ownership of Male Head of Household and other Member of the Family | Joint Ownership by all family members | Total | |
| Bilaspur | Bilaspur | | 60 | 36 | 1 | 5 | 1 | 0 | 0 | 0 | 3 | 0 | 46 | 78.3 | 2.2 | 10.9 | 2.2 | 0.0 | 0.0 | 6.5 | 0.0 | 100.0 |
| | Bharmour | | 20 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | | 20 | 11 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 78.6 | 0.0 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | | 20 | 9 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | 64.3 | 7.1 | 21.4 | 7.1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | | 40 | 26 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 30 | 86.7 | 0.0 | 6.7 | 6.7 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | | 20 | 16 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 18 | 88.9 | 0.0 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | | 20 | 17 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 19 | 89.5 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.3 | 100.0 |
| Kullu | Kullu WL | | 20 | 9 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 12 | 75.0 | 0.0 | 8.3 | 8.3 | 0.0 | 0.0 | 8.3 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | | 20 | 11 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 16 | 68.8 | 12.5 | 12.5 | 0.0 | 6.3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Karsog | | 20 | 15 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 18 | 83.3 | 0.0 | 0.0 | 5.6 | 0.0 | 0.0 | 0.0 | 11.1 | 100.0 | |
| Mandi | Mandi | | 20 | 13 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 16 | 81.3 | 0.0 | 0.0 | 6.3 | 0.0 | 12.5 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | | 20 | 16 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 19 | 84.2 | 0.0 | 10.5 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 | 100.0 | |
| | Rampur | | 21 | 12 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 18 | 66.7 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | | 20 | 10 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 18 | 55.6 | 5.6 | 38.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Territorial | | | 341 | 218 | 5 | 32 | 9 | 1 | 2 | 5 | 3 | 275 | 79.3 | 1.8 | 11.6 | 3.3 | 0.4 | 0.7 | 1.8 | 1.1 | 100.0 | |
| Kangra | Bajinath | Thrass | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | Thrass | 11 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Mandi | Mandi | Thrass | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | Thrass | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | Malana, Kullu | 10 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | Lippa, Kinnaur | 21 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | 94.7 | 0.0 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | Lippa, Kinnaur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 0.0 | |
| Solan | Nalagarh | Hatu | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | Hatu | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 0.0 | |
| Solan | Baddi | Hatu | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassland | | | 59 | 41 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 44 | 93.2 | 0.0 | 2.3 | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 | 100.0 | |
| Grand Total | | | 400 | 259 | 5 | 33 | 9 | 1 | 4 | 5 | 3 | 319 | 81.2 | 1.6 | 10.3 | 2.8 | 0.3 | 1.3 | 1.6 | 0.9 | 100.0 | |

* 1 bigha = 800 sq. m/ 1 biswa=40 sq. m

Source: Livelihood Survey, JICA Study Team (2017)

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

7. Livestock

7.1 Cow

Adult

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-----------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | 4 | 1.5 | | 1.5 | 1 | 1.0 | | 1.0 | 5 | 1.4 | | 1.3 |
| Chamba | Bharmour | 20 | 8 | 1.3 | 1.2 | 1.3 | 7 | 1.3 | 1.4 | 1.3 | 15 | 1.3 | 1.3 | 1.3 |
| | Chamba WL | 20 | | | | | 16 | 1.4 | 1.5 | 1.5 | 16 | 1.4 | 1.5 | 1.5 |
| | Pangi | 20 | 8 | 1.4 | 1.4 | 1.4 | 9 | 1.2 | 1.2 | 1.2 | 17 | 1.3 | 1.3 | 1.3 |
| Kinnaur | Kinnaur | 40 | 9 | 1.6 | 1.7 | 1.6 | 15 | 1.5 | 1.5 | 1.5 | 24 | 1.5 | 1.6 | 1.5 |
| | Sarahan WL | 20 | | | | | 16 | 1.6 | 1.4 | 1.4 | 16 | 1.6 | 1.4 | 1.4 |
| Kullu | Kullu | 20 | 9 | 1.1 | 1.1 | 1.0 | 5 | 1.2 | 1.2 | 1.2 | 14 | 1.1 | 1.2 | 1.1 |
| | Kullu WL | 20 | | | | | 11 | 1.5 | 1.6 | 1.4 | 11 | 1.5 | 1.6 | 1.4 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 15 | 1.6 | 2.0 | 1.6 | 15 | 1.6 | 2.0 | 1.6 |
| Mandi | Karsog | 20 | 7 | 1.7 | 2.5 | 1.4 | 8 | 1.1 | 1.7 | 1.1 | 15 | 1.4 | 2.0 | 1.3 |
| | Mandi | 20 | 8 | 1.6 | 2.3 | 1.3 | 7 | 1.7 | 1.7 | 1.4 | 15 | 1.7 | 2.0 | 1.4 |
| Shimla | Kotgarh | 20 | 6 | 1.0 | 1.0 | 1.0 | 3 | 1.3 | | 1.3 | 9 | 1.1 | 1.0 | 1.1 |
| | Rampur | 21 | 8 | 1.3 | 2.0 | 1.0 | 8 | 1.1 | 1.5 | 1.0 | 16 | 1.2 | 1.8 | 1.0 |
| | Theog | 20 | 10 | 1.9 | 1.8 | 1.9 | 6 | 1.3 | 2.0 | 1.3 | 16 | 1.7 | 1.9 | 1.6 |
| Total of Territorial | | 341 | 77 | 1.4 | 1.6 | 1.4 | 127 | 1.4 | 1.5 | 1.4 | 204 | 1.4 | 1.5 | 1.4 |
| Kangra | Bajinath | 3 | | | | | 3 | 1.7 | 2.0 | 2.0 | 3 | 1.7 | 2.0 | 2.0 |
| Kullu | Kullu | 11 | | | | | 11 | 1.7 | 1.5 | 1.9 | 11 | 1.7 | 1.5 | 1.9 |
| Mandi | Mandi | 3 | | | | | 2 | 1.0 | 1.0 | | 2 | 1.0 | 1.0 | |
| Kangra | Palampur | 1 | | | | | 1 | 1.0 | 1.0 | 1.0 | 1 | 1.0 | 1.0 | 1.0 |
| Kullu | Parvati | 10 | | | | | 2 | 1.5 | 2.0 | 1.0 | 2 | 1.5 | 2.0 | 1.0 |
| Kinnaur | Kinnaur | 21 | | | | | 13 | 1.4 | 2.1 | 1.4 | 13 | 1.4 | 2.1 | 1.4 |
| Shimla | Theog | 1 | | | | | 1 | 5.0 | | 2.0 | 1 | 5.0 | | 2.0 |
| Solan | Nalagarh | 5 | | | | | 5 | 2.8 | 2.6 | | 5 | 2.8 | 2.6 | |
| Shimla | Kotgarh | 2 | | | | | 2 | 1.5 | | 1.5 | 2 | 1.5 | | 1.5 |
| Solan | Baddi | 2 | | | | | 2 | 1.5 | | 1.5 | 2 | 1.5 | | 1.5 |
| Total of Graziers/ | | 59 | | | | | 40 | 1.8 | 2.1 | 1.6 | 40 | 1.8 | 2.1 | 1.6 |
| Grand Total | | 400 | | | | | 167 | 1.5 | 1.6 | 1.4 | 244 | 1.5 | 1.6 | 1.4 |

Source: Livelihood Survey, JICA Study Team (2017)

Young

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | 2 | 1.0 | 1.3 | 2.0 | 1 | 1.0 | 1.0 | 1.0 | 5 | 1.0 | 1.2 | 1.6 |
| Chamba | Bharmour | 20 | 3 | 1.0 | 1.3 | 2.0 | 2 | 1.0 | 1.0 | 1.0 | 5 | 1.0 | 1.2 | 1.6 |
| | Chamba WL | 20 | | | | | 4 | 1.0 | 1.0 | 1.0 | 4 | 1.0 | 1.0 | 1.0 |
| | Pangi | 20 | | | | | 3 | 1.0 | 1.0 | 1.0 | 3 | 1.0 | 1.0 | 1.0 |
| Kinnaur | Kinnaur | 40 | 5 | 1.0 | 1.0 | 1.0 | 5 | 1.6 | 1.3 | 1.6 | 10 | 1.3 | 1.2 | 1.3 |
| | Sarahan WL | 20 | | | | | 4 | 1.0 | 1.0 | 1.0 | 4 | 1.0 | 1.0 | 1.0 |
| Kullu | Kullu | 20 | 3 | 1.0 | 1.0 | 1.3 | 2 | 1.5 | | 1.5 | 5 | 1.2 | 1.0 | 1.3 |
| | Kullu WL | 20 | | | | | 6 | 1.3 | 1.5 | 1.3 | 6 | 1.3 | 1.5 | 1.3 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 4 | 1.5 | 1.7 | 1.7 | 4 | 1.5 | 1.7 | 1.7 |
| Mandi | Karsog | 20 | 2 | 1.0 | | 1.0 | 5 | 1.2 | 1.0 | 1.0 | 7 | 1.1 | 1.0 | 1.0 |
| | Mandi | 20 | 5 | 1.4 | 2.7 | 2.0 | 3 | 1.3 | 2.0 | 1.2 | 8 | 1.4 | 2.5 | 1.6 |
| Shimla | Kotgarh | 20 | 1 | 1.0 | 1.0 | 1.0 | 1 | 2.0 | | 1.5 | 2 | 1.5 | | 1.3 |
| | Rampur | 21 | 5 | 1.2 | 1.0 | 1.0 | 5 | 1.2 | 2.0 | 1.3 | 10 | 1.2 | 1.3 | 1.1 |
| | Theog | 20 | 5 | 1.4 | 1.0 | 1.4 | 3 | 1.3 | | 1.5 | 8 | 1.4 | 1.0 | 1.5 |
| Total of Territorial | | 341 | 31 | 1.2 | 1.4 | 1.3 | 48 | 1.3 | 1.3 | 1.3 | 79 | 1.2 | 1.3 | 1.3 |
| Kangra | Bajinath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | 6 | 1.5 | 1.0 | 1.8 | 6 | 1.5 | 1.0 | 1.8 |
| Mandi | Mandi | 3 | | | | | 1 | 1.0 | 1.0 | | 1 | 1.0 | 1.0 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | 1 | 1.0 | | 1.0 | 1 | 1.0 | | 1.0 |
| Kinnaur | Kinnaur | 21 | | | | | 5 | 1.2 | 1.5 | 1.3 | 5 | 1.2 | 1.5 | 1.3 |
| Shimla | Theog | 1 | | | | | | | | 3.0 | | | | 3.0 |
| Solan | Nalagarh | 5 | | | | | 3 | 1.7 | 3.0 | | 3 | 1.7 | 3.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | 2 | 2.0 | 1.0 | 1.5 | 2 | 2.0 | 1.0 | 1.5 |
| Total of Graziers/ Grassland | | 59 | | | | | 18 | 1.4 | 1.7 | 1.5 | 18 | 1.4 | 1.7 | 1.5 |
| Grand Total | | 400 | | | | | 66 | 1.3 | 1.4 | 1.3 | 97 | 1.3 | 1.4 | 1.3 |

Source: Livelihood Survey, JICA Study Team (2017)

7.2 Buffalo

Adult

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | 24 | 1.4 | | 1.4 | 14 | 1.4 | 2.0 | 1.3 | 38 | 1.4 | 2.0 | 1.3 |
| Chamba | Bharmour | 20 | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | |
| | Pangi | 20 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | | | | | | | |
| | Sarahan WL | 20 | | | | | | | | | | | | |
| Kullu | Kullu | 20 | | | | | | | | | | | | |
| | Kullu WL | 20 | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | 1 | 4.0 | 3.0 | | | | | | 1 | 4.0 | 3.0 | |
| | Mandi | 20 | 3 | 10.3 | 8.0 | 4.0 | 1 | 2.0 | 2.0 | 1.0 | 4 | 8.3 | 6.0 | 2.5 |
| Shimla | Kotgarh | 20 | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | | | | | | | |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 28 | 2.5 | 6.3 | 1.5 | 15 | 1.4 | 2.0 | 1.3 | 43 | 2.1 | 4.6 | 1.4 |
| Kangra | Bajinath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | 3 | 1.7 | 1.0 | 3.0 | 3 | 1.7 | 1.0 | 3.0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | 1 | 60.0 | | 40.0 | 1 | 60.0 | | 40.0 |
| Solan | Nalagarh | 5 | | | | | 5 | 33.8 | 7.6 | 9.5 | 5 | 33.8 | 7.6 | 9.5 |
| Shimla | Kotgarh | 2 | | | | | 2 | 37.5 | 30.0 | 21.5 | 2 | 37.5 | 30.0 | 21.5 |
| Solan | Baddi | 2 | | | | | 2 | 10.0 | 8.5 | 1.5 | 2 | 10.0 | 8.5 | 1.5 |
| Total of Graziers/ Grassland | | 59 | | | | | 13 | 25.3 | 8.7 | 13.5 | 13 | 25.3 | 8.7 | 13.5 |
| Grand Total | | 400 | | | | | 28 | 12.5 | 7.6 | 5.3 | 56 | 7.5 | 7.3 | 3.2 |

Source: Livelihood Survey, JICA Study Team (2017)

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

7.3 Young

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | 6 | 1.2 | | 1.3 | 5 | 1.0 | | 1.0 | 11 | 1.1 | | 1.2 |
| Chamba | Bharmour | 20 | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | |
| | Pang | 20 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | | | | | | | |
| | Sarahan WL | 20 | | | | | | | | | | | | |
| Kullu | Kullu | 20 | | | | | | | | | | | | |
| | Kullu WL | 20 | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | |
| | Karsog | 20 | | | | | | | | | | | | |
| Mandi | Mandi | 20 | 1 | 2.0 | 2.0 | | | | | 1 | 2.0 | 2.0 | | |
| | Kotgarh | 20 | | | | | | | | | | | | |
| Shimla | Rampur | 21 | | | | | | | | | | | | |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 7 | 1.3 | 2.0 | 1.3 | 5 | 1.0 | | 1.0 | 12 | 1.2 | 2.0 | 1.2 |
| Kangra | Bajmath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | 2 | 1.0 | 1.0 | | 2 | 1.0 | 1.0 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | 1 | 20.0 | | 20.0 | 1 | 20.0 | | 20.0 |
| Solan | Nalagarh | 5 | | | | | 5 | 13.2 | 7.0 | 16.0 | 5 | 13.2 | 7.0 | 16.0 |
| Shimla | Kotgarh | 2 | | | | | 1 | 20.0 | | 16.0 | 1 | 20.0 | | 16.0 |
| Solan | Baddi | 2 | | | | | 2 | 4.5 | 3.0 | 1.5 | 2 | 4.5 | 3.0 | 1.5 |
| Total of Graziers/ Grassland | | 59 | | | | | 11 | 10.6 | 4.8 | 11.8 | 11 | 10.6 | 4.8 | 11.8 |
| Grand Total | | 400 | 7 | 1.3 | 2.0 | 1.3 | 16 | 7.6 | 4.8 | 6.4 | 23 | 5.7 | 4.5 | 4.1 |

Source: Livelihood Survey, JICA Study Team (2017)

7.4 Poultry

Adult

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | | | | | 1 | 3.0 | 3.0 | 5.0 | 1 | 3.0 | 3.0 | 5.0 |
| Chamba | Bharmour | 20 | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | |
| | Pang | 20 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | 1 | 10.0 | 10.0 | | 1 | 10.0 | 10.0 | |
| | Sarahan WL | 20 | | | | | | | | | | | | |
| Kullu | Kullu | 20 | | | | | | | | | | | | |
| | Kullu WL | 20 | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | |
| | Karsog | 20 | | | | | | | | | | | | |
| Mandi | Mandi | 20 | 1 | 4.0 | 1.0 | | | | | | 1 | 4.0 | 1.0 | |
| | Kotgarh | 20 | | | | | | | | | | | | |
| Shimla | Rampur | 21 | 1 | 1.0 | 1.0 | | 1 | 3.0 | 3.0 | 3.0 | 2 | 2.0 | 2.0 | 3.0 |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 2 | 2.5 | 1.0 | | 4 | 6.0 | 6.0 | 5.3 | 6 | 4.8 | 4.3 | 5.3 |
| Kangra | Bajmath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | 1 | 1.0 | | | 1 | 1.0 | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | 1 | 1.0 | | | 1 | 1.0 | | |
| Grand Total | | 400 | 2 | 2.5 | 1.0 | | 5 | 5.0 | 6.0 | 5.3 | 7 | 4.3 | 4.3 | 5.3 |

Source: Livelihood Survey, JICA Study Team (2017)

Young

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | |
| Chamba | Bharmour | 20 | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | |
| | Pang | 20 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 40 | | | | | | | | | | | | |
| | Sarahan WL | 20 | | | | | | | | | | | | |
| Kullu | Kullu | 20 | | | | | | | | | | | | |
| | Kullu WL | 20 | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | |
| | Karsog | 20 | | | | | | | | | | | | |
| Mandi | Mandi | 20 | | | | | | | | | | | | |
| | Kotgarh | 20 | 1 | 4.0 | 4.0 | | | | | 1 | 4.0 | 4.0 | | |
| Shimla | Rampur | 21 | | | | | | | | | | | | |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 1 | 4.0 | 4.0 | | | | | | 1 | 4.0 | 4.0 | |
| Kangra | Bajmath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | 1 | 20.0 | | 20.0 | 1 | 20.0 | | 20.0 |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | 1 | 20.0 | | 20.0 | 1 | 20.0 | | 20.0 |
| Grand Total | | 400 | 1 | 4.0 | 4.0 | | 1 | 20.0 | | 20.0 | 2 | 12.0 | | 4.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

7.5 Goat
Adult

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|----------------------|---------------------|----------------------|------------------------------------|----------------------|---------------------|----------------------|------------------------------------|----------------------|
| | | | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal |
| Bilaspur | Bilaspur | 60 | 20 | 2.0 | 1.7 | 1.8 | 8 | 2.9 | 3.8 | 1.0 | 28 | 2.2 | 3.1 | 1.8 |
| Chamba | Bharmour | 20 | 5 | 2.0 | 2.0 | 2.0 | 4 | 2.3 | 2.3 | 1.0 | 9 | 2.1 | 2.1 | 1.5 |
| | Chamba WL | 20 | | | | | | | | | | | | |
| | Panga | 20 | 2 | 2.5 | 2.5 | 2.5 | 4 | 5.3 | 5.3 | 4.5 | 6 | 4.3 | 4.3 | 3.5 |
| Kinnaur | Kinnaur | 40 | 2 | 200.0 | 151.5 | | 3 | 6.0 | 6.0 | 4.0 | 5 | 83.6 | 64.2 | 4.0 |
| | Sarahan WL | 20 | | | | | 9 | 11.9 | 11.9 | 6.2 | 9 | 11.9 | 11.9 | 6.2 |
| Kullu | Kullu | 20 | 1 | 15.0 | 15.0 | | | | | | 1 | 15.0 | 15.0 | |
| | Kullu WL | 20 | | | | | 3 | 30.3 | 30.3 | 1.0 | 3 | 30.3 | 30.3 | 1.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | | | | | | | | | | | | |
| | Mandi | 20 | 2 | 11.5 | 11.5 | | 1 | 1.0 | | 1.0 | 3 | 8.0 | 11.5 | 1.0 |
| Shimla | Kotgarh | 20 | 1 | 1.0 | 1.0 | 1.0 | | | | | 1 | 1.0 | 1.0 | 1.0 |
| | Rampur | 21 | 1 | 20.0 | 20.0 | 25.0 | 4 | 19.8 | 19.8 | 30.0 | 5 | 19.8 | 19.8 | 27.5 |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 34 | 15.1 | 22.5 | 2.9 | 40 | 11.3 | 12.2 | 5.3 | 74 | 13.0 | 15.4 | 3.9 |
| Kangra | Bajjnath | 3 | | | | | 3 | 80.0 | 67.5 | | 3 | 80.0 | 67.5 | |
| Kullu | Kullu | 11 | | | | | 1 | 100.0 | 100.0 | | 1 | 100.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | | 3 | 38.3 | 40.0 | | 3 | 38.3 | 40.0 | |
| Kangra | Palampur | 1 | | | | | 1 | 150.0 | 150.0 | | 1 | 150.0 | 150.0 | |
| Kullu | Parvati | 10 | | | | | 3 | 58.0 | 39.7 | 90.0 | 3 | 58.0 | 39.7 | 90.0 |
| Kinnaur | Kinnaur | 21 | | | | | 5 | 6.0 | 3.8 | | 5 | 6.0 | 3.8 | |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | 16 | 50.6 | 43.3 | 90.0 | 16 | 50.6 | 43.3 | 90.0 |
| Grand Total | | 400 | 34 | 15.1 | 22.5 | 2.9 | 56 | 22.5 | 20.3 | 10.3 | 90 | 19.7 | 20.8 | 6.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Young

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|----------------------|---------------------|----------------------|------------------------------------|----------------------|---------------------|----------------------|------------------------------------|----------------------|
| | | | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal |
| Bilaspur | Bilaspur | 60 | 3 | 2.0 | 1.0 | 1.8 | 3 | 2.0 | 2.7 | | 6 | 2.0 | 2.3 | 1.8 |
| Chamba | Bharmour | 20 | 1 | 2.0 | 2.0 | 3.0 | | | | | 1 | 2.0 | 2.0 | 3.0 |
| | Chamba WL | 20 | | | | | | | | | | | | |
| | Panga | 20 | | | | | 2 | 2.0 | 2.0 | 2.0 | 2 | 2.0 | 2.0 | 2.0 |
| Kinnaur | Kinnaur | 40 | | | | | | | | | | | | |
| | Sarahan WL | 20 | | | | | 1 | 4.0 | 4.0 | | 1 | 4.0 | 4.0 | |
| Kullu | Kullu | 20 | | | | | | | | | | | | |
| | Kullu WL | 20 | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | | | | | | | | | | | | |
| | Mandi | 20 | | | | | | | | | | | | |
| Shimla | Kotgarh | 20 | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | | | | | | | |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 4 | 2.0 | 1.5 | 2.0 | 6 | 2.3 | 2.7 | 2.0 | 10 | 2.2 | 2.4 | 2.0 |
| Kangra | Bajjnath | 3 | | | | | 2 | 15.0 | 14.0 | | 2 | 15.0 | 14.0 | |
| Kullu | Kullu | 11 | | | | | | | 15.0 | | | | 15.0 | |
| Mandi | Mandi | 3 | | | | | 3 | 11.7 | 10.0 | | 3 | 11.7 | 10.0 | |
| Kangra | Palampur | 1 | | | | | 1 | 50.0 | 50.0 | | 1 | 50.0 | 50.0 | |
| Kullu | Parvati | 10 | | | | | 2 | 17.5 | 8.0 | 2.0 | 2 | 17.5 | 8.0 | 2.0 |
| Kinnaur | Kinnaur | 21 | | | | | 2 | 3.5 | 3.5 | | 2 | 3.5 | 3.5 | |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | 10 | 15.7 | 14.7 | 2.0 | 10 | 15.7 | 14.7 | 2.0 |
| Grand Total | | 400 | 4 | 2.0 | 1.5 | 2.0 | 16 | 10.7 | 9.9 | 2.0 | 20 | 9.0 | 8.9 | 2.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.6 Sheep
Adult

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|----------------------|---------------------|----------------------|------------------------------------|----------------------|---------------------|----------------------|------------------------------------|----------------------|
| | | | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal | Counts of Responses | Average No of Animal | Average No of Animal going Grazing | Average No of animal |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | |
| Chamba | Bharmour | 20 | 3 | 4.7 | 4.7 | 2.0 | 2 | 5.5 | 5.5 | | 5 | 5.0 | 5.0 | 2.0 |
| | Chamba WL | 20 | | | | | 2 | 50.0 | 50.0 | | 2 | 50.0 | 50.0 | |
| | Panga | 20 | 2 | 5.0 | 5.0 | 5.0 | 4 | 5.5 | 5.5 | 3.0 | 6 | 5.3 | 5.3 | 4.0 |
| Kinnaur | Kinnaur | 40 | 1 | 30.0 | 30.0 | | 7 | 14.4 | 11.7 | 4.5 | 8 | 16.4 | 14.0 | 4.5 |
| | Sarahan WL | 20 | | | | | 4 | 16.5 | 9.0 | 12.0 | 4 | 16.5 | 9.0 | 12.0 |
| Kullu | Kullu | 20 | 4 | 19.0 | 19.0 | 10.0 | | | | | 4 | 19.0 | 19.0 | 10.0 |
| | Kullu WL | 20 | | | | | 2 | 8.5 | 8.5 | 2.0 | 2 | 8.5 | 8.5 | 2.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | | | | | 1 | 2.0 | 3.0 | 2.0 | 1 | 2.0 | 3.0 | 2.0 |
| | Mandi | 20 | 4 | 8.00 | 7.75 | | 3 | 4.3 | 1.0 | 4.0 | 7 | 6.4 | 6.4 | 4.0 |
| Shimla | Kotgarh | 20 | | | | | | | | | | | | |
| | Rampur | 21 | 3 | 8.3 | 8.3 | | 4 | 23.8 | 23.8 | 10.0 | 7 | 17.1 | 17.1 | 10.0 |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 17 | 11.0 | 10.9 | 6.4 | 29 | 14.7 | 13.6 | 5.5 | 46 | 13.3 | 12.6 | 5.8 |
| Kangra | Bajjnath | 3 | | | | | 3 | 81.7 | 56.7 | 20.0 | 3 | 81.7 | 56.7 | 20.0 |
| Kullu | Kullu | 11 | | | | | 3 | 37.7 | 56.0 | | 3 | 37.7 | 56.0 | |
| Mandi | Mandi | 3 | | | | | 3 | 41.7 | 60.0 | | 3 | 41.7 | 60.0 | |
| Kangra | Palampur | 1 | | | | | 1 | 90.0 | 90.0 | | 1 | 90.0 | 90.0 | |
| Kullu | Parvati | 10 | | | | | 3 | 55.0 | 36.7 | 70.0 | 3 | 55.0 | 36.7 | 70.0 |
| Kinnaur | Kinnaur | 21 | | | | | 8 | 13.1 | 8.3 | 20.0 | 8 | 13.1 | 8.3 | 20.0 |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | 1 | 3.0 | 3.0 | | 1 | 3.0 | 3.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | 1 | 2.0 | 2.0 | | 1 | 2.0 | 2.0 | |
| Total of Graziers/ Grassland | | 59 | | | | | 23 | 36.9 | 30.7 | 36.7 | 23 | 36.9 | 30.7 | 36.7 |
| Grand Total | | 400 | 17 | 11 | 10.9 | 6.4 | 52 | 24.5 | 20.9 | 12.7 | 69 | 21.2 | 18.2 | 10.9 |

Source: Livelihood Survey, JICA Study Team (2017)

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

Young

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | |
| Chamba | Bharmour | 20 | 1 | 2.0 | 2.0 | 2.0 | | | | | 1 | 2.0 | 2.0 | 2.0 |
| | Chamba WL | 20 | | | | | | | | | | | | |
| Kinnaur | Pangi | 20 | | | | | 2 | 1.5 | 1.5 | 1 | 2 | 1.5 | 1.5 | 1.0 |
| | Kinnaur | 40 | 1 | 20.0 | 20.0 | | | | | | 1 | 20.0 | 20.0 | |
| Kullu | Sarahan WL | 20 | | | | | 1 | 3.0 | 3.0 | | 1 | 3.0 | 3.0 | |
| | Kullu | 20 | | | | | | | | | | | | |
| Lahaul & Spiti | Kullu WL | 20 | | | | | 1 | 2.0 | 1.0 | 1.0 | 1 | 2.0 | 1.0 | 1.0 |
| | Spiti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | | | | | | | | | | | | |
| | Mandi | 20 | | | | | | | 7 | | | | 7.0 | |
| Shimla | Kotgarh | 20 | | | | | | | | | | | | |
| | Rampur | 21 | 1 | 3.0 | 3.0 | | | | | | 1 | 3.0 | 3.0 | |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 5 | 6.0 | 5.8 | 1.5 | 2 | 1.5 | 3.3 | 1.0 | 7.0 | 4.7 | 4.9 | 1.3 |
| Kangra | Bajinath | 3 | | | | | 1 | 15.0 | 15.0 | | 1.0 | 15.0 | 15.0 | |
| Kullu | Kullu | 11 | | | | | 1 | 3.0 | 11.5 | | 1.0 | 3.0 | 11.5 | |
| Mandi | Mandi | 3 | | | | | 3 | 7.7 | 8.0 | | 3.0 | 7.7 | 8.0 | |
| Kangra | Palampur | 1 | | | | | 1 | 10.0 | 10.0 | | 1.0 | 10.0 | 10.0 | |
| Kullu | Parvati | 10 | | | | | 2 | 52.5 | 10.0 | 10.0 | 2.0 | 52.5 | 10.0 | 10.0 |
| Kinnaur | Kinnaur | 21 | | | | | 2 | 4.0 | 8.0 | | 2.0 | 4.0 | 8.0 | |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | 10.0 | 16.4 | 10.5 | 10.0 | 10.0 | 16.4 | 10.5 | 10.0 |
| Grand Total | | 400 | 5 | 6.0 | 5.8 | 1.5 | 12.0 | 13.9 | 8.8 | 4.0 | 17.0 | 11.6 | 8.0 | 3.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.7 Ox

Adult

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | 4 | 1.8 | | 2.4 | 6 | 1.8 | 2.0 | 2.1 | 10 | 1.8 | 2.0 | 2.2 |
| Chamba | Bharmour | 20 | 6 | 1.7 | 1.7 | 1.8 | 2 | 1.5 | 1.5 | 1.5 | 8 | 1.6 | 1.6 | 1.7 |
| | Chamba WL | 20 | | | | | 7 | 1.1 | 1.1 | 1.8 | 7 | 1.1 | 1.1 | 1.8 |
| Kinnaur | Pangi | 20 | 1 | 1.0 | 1.0 | 1.0 | 1 | 1.0 | 1.0 | 1.0 | 2 | 1.0 | 1.0 | 1.0 |
| | Kinnaur | 40 | | | | | | | | | | | | |
| Kullu | Sarahan WL | 20 | | | | | 1 | 1.0 | 1.0 | | 1 | 1.0 | 1.0 | |
| | Kullu | 20 | 1 | 2.0 | 2.0 | 2.0 | | | | | 1 | 2.0 | 2.0 | 2.0 |
| Lahaul & Spiti | Kullu WL | 20 | | | | | | | | | | | | |
| | Spiti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | 2 | 2.0 | 2.0 | 2.0 | 2 | 2.0 | 2.0 | 2.0 | 4 | 2.0 | 2.0 | 2.0 |
| | Mandi | 20 | 4 | 2.0 | 1.7 | 2.0 | 4 | 2.0 | 1.7 | 2.0 | 8 | 2.0 | 1.7 | 2.0 |
| Shimla | Kotgarh | 20 | | | | | | | | | | | | |
| | Rampur | 21 | 2 | 1.0 | 1.0 | 1.0 | 3 | 1.0 | 1.0 | 1.0 | 5 | 1.0 | 1.0 | 1.0 |
| | Theog | 20 | 1 | 1.0 | | | | | | | 1 | 1.0 | | |
| Total of Territorial | | 341 | 21 | 1.7 | 1.6 | 2.2 | 26 | 1.5 | 1.4 | 2.0 | 47 | 1.6 | 1.5 | 2.1 |
| Kangra | Bajinath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | | |
| Grand Total | | 400 | 21 | 1.7 | 1.6 | 2.2 | 26 | 1.5 | 1.4 | 2.0 | 47 | 1.6 | 1.5 | 2.1 |

Source: Livelihood Survey, JICA Study Team (2017)

7.8 Horse

Adult

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|---------------------|----------------------|------------------------------------|------------------------|
| | | | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal | Counts of Responses | Average No of Animal | Grazing No of Animal going Grazing | Stall Fed No of animal |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | |
| Chamba | Bharmour | 20 | 1 | 2.0 | 2.0 | 2.0 | | | | | 1 | 2.0 | 2.0 | 2.0 |
| | Chamba WL | 20 | | | | | 1 | 3.0 | 3.0 | 3.0 | 1 | 3.0 | 3.0 | 3.0 |
| Kinnaur | Pangi | 20 | | | | | | | | | | | | |
| | Kinnaur | 40 | | | | | | | | | | | | |
| Kullu | Sarahan WL | 20 | | | | | | | | | | | | |
| | Kullu | 20 | | | | | | | | | | | | |
| Lahaul & Spiti | Kullu WL | 20 | | | | | | | | | | | | |
| | Spiti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | | | | | 1 | 1.0 | 1.0 | 1.0 | 1 | 1.0 | 1.0 | 1.0 |
| | Mandi | 20 | | | | | | | | | | | | |
| Shimla | Kotgarh | 20 | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | | | | | | | |
| | Theog | 20 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 1 | 2 | 2 | 2 | 2 | 2.0 | 3.0 | 2.0 | 3 | 2.0 | 2.7 | 2.0 |
| Kangra | Bajinath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | 2 | 1.5 | 2.0 | 1.0 | 2 | 1.5 | 2.0 | 1.0 |
| Total of Graziers/ Grassland | | 59 | | | | | 2 | 1.5 | 2.0 | 1.0 | 2 | 1.5 | 2.0 | 1.0 |
| Grand Total | | 400 | 1 | 2 | 2 | 2 | 4 | 1.8 | 2.7 | 1.7 | 5 | 1.8 | 2.5 | 1.8 |

Source: Livelihood Survey, JICA Study Team (2017)

7.9 Sources of Feed

Cow
Adult (1)

| District | Division | Herd Size | JFM | | | | | | | | | | | | | | | Non JFM | | | | | | | | | | | | | | | Total | | | | | | |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|-----------|-----------|----------|-----------|------------|---|-------|----|--|--|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | | | | | | | | | | | | | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | | | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 3 | 1 | | 3 | | | 3 | | | | | | | 10 | 2 | | | 2 | | | | | 6 | 5 | 1 | | 2 | 3 | 0 | 3 | 2 | 16 | | | | | |
| | Bharmour | 20 | 4 | | 7 | 2 | | | | | | | | | | 13 | 5 | | | | | | | | | 11 | 9 | 0 | 12 | 2 | 0 | 1 | 0 | 24 | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | 0 | 11 | 1 | 13 | 2 | | | | | | 27 | 11 | 1 | 13 | 2 | 0 | 0 | 0 | 27 | | | | | |
| Chamba | Pangi | 20 | 6 | | 5 | 2 | | | | | | | | | | 13 | 8 | 8 | | | | | | | 16 | 14 | 0 | 13 | 2 | 0 | 0 | 0 | 29 | | | | | | |
| | Kinnaur | 40 | 8 | 1 | 5 | 1 | | | 1 | | | | | | | 16 | 10 | 4 | 7 | | 7 | | | | 28 | 18 | 1 | 9 | 8 | 0 | 8 | 0 | 44 | | | | | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | 0 | 11 | 9 | | | | | | | 30 | 11 | 0 | 9 | 9 | 0 | 1 | 0 | 30 | | | | | | |
| | Kullu | 20 | 6 | | 7 | 1 | | | | | | | | | | 14 | 5 | | 1 | | 3 | | | | 9 | 11 | 0 | 7 | 2 | 0 | 3 | 0 | 23 | | | | | | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | 0 | 12 | 1 | 8 | 1 | | 3 | | | 25 | 12 | 1 | 8 | 1 | 0 | 3 | 0 | 25 | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | 0 | 10 | 7 | 4 | | | | | | 22 | 10 | 0 | 7 | 4 | 0 | 0 | 1 | 22 | | | | | | |
| | Karsog | 20 | 5 | | 1 | 3 | | | 4 | | | | | | | 13 | 6 | 5 | | | 2 | | | | 13 | 11 | 0 | 6 | 3 | 0 | 6 | 0 | 26 | | | | | | |
| Mandi | Mandi | 20 | 4 | | 6 | 3 | | | | | | | | | | 13 | 6 | 2 | 8 | 4 | | 1 | 1 | | 22 | 10 | 2 | 14 | 7 | 0 | 1 | 1 | 35 | | | | | | |
| | Kotgarh | 20 | 2 | | 6 | 5 | | | 1 | 1 | | | | | | 15 | 2 | 6 | 5 | | 1 | 1 | | | 15 | 4 | 0 | 12 | 10 | 0 | 2 | 2 | 30 | | | | | | |
| | Rampur | 21 | 7 | | 2 | 2 | | | | 1 | | | | | | 12 | 7 | 2 | 2 | | | | | | 12 | 14 | 0 | 4 | 4 | 0 | 0 | 2 | 24 | | | | | | |
| Shimla | Theog | 20 | 9 | | 4 | 8 | | | 1 | 3 | | | | | | 25 | 9 | 4 | 8 | | 2 | 3 | | | 26 | 18 | 0 | 8 | 16 | 0 | 3 | 6 | 51 | | | | | | |
| Total of Territorial | | 341 | 54 | 2 | 43 | 30 | 0 | 10 | 5 | 144 | 104 | 4 | 81 | 43 | 0 | 21 | 9 | 262 | 158 | 6 | 124 | 73 | 0 | 31 | 14 | 0 | 31 | 14 | 0 | 14 | 406 | | | | | | | | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | 0 | 2 | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | 0 | 9 | | 2 | | | | | | 1 | 12 | 9 | 0 | 2 | 0 | 0 | 1 | 12 | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | 0 | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | 0 | 1 | | 1 | | | | | | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | 0 | | 2 | | | | | | | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | 0 | 3 | 1 | 3 | | | | | | 7 | 3 | 1 | 3 | 0 | 0 | 0 | 0 | 7 | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | 0 | | 1 | | | | | | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | 0 | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | 0 | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | 0 | | | | | | | | | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | | | | | | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 3 | 7 | 0 | 0 | 2 | 2 | 1 | 28 | 15 | 3 | 7 | 0 | 0 | 2 | 1 | 0 | 2 | 1 | 28 | | | | | | | | | |
| Grand Total | | 400 | 54 | 2 | 43 | 30 | 0 | 10 | 5 | 144 | 119 | 7 | 88 | 43 | 0 | 23 | 10 | 290 | 173 | 9 | 131 | 73 | 0 | 33 | 15 | 0 | 33 | 15 | 0 | 15 | 434 | | | | | | | | |

Source: Livelihood Survey, JICA Study Team (2017)

Cow
Adult (2)

| District | Division | Herd Size | % to Total | | | | | | | |
|-------------------------------------|------------|------------|-------------------|-------------|-------------------|---------------|-------------------------------|------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 31.3 | 6.3 | 12.5 | 18.8 | 0.0 | 18.8 | 12.5 | 100.0 |
| | Bharmour | 20 | 37.5 | 0.0 | 50.0 | 8.3 | 0.0 | 4.2 | 0.0 | 100.0 |
| | Chamba WL | 20 | 40.7 | 3.7 | 48.1 | 7.4 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 48.3 | 0.0 | 44.8 | 6.9 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 40.9 | 2.3 | 20.5 | 18.2 | 0.0 | 18.2 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | 20 | 36.7 | 0.0 | 30.0 | 30.0 | 0.0 | 3.3 | 0.0 | 100.0 |
| | Kullu | 20 | 47.8 | 0.0 | 30.4 | 8.7 | 0.0 | 13.0 | 0.0 | 100.0 |
| Kullu | Kullu WL | 20 | 48.0 | 4.0 | 32.0 | 4.0 | 0.0 | 12.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 45.5 | 0.0 | 31.8 | 18.2 | 0.0 | 0.0 | 4.5 | 100.0 |
| | Karsog | 20 | 42.3 | 0.0 | 23.1 | 11.5 | 0.0 | 23.1 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 28.6 | 5.7 | 40.0 | 20.0 | 0.0 | 2.9 | 2.9 | 100.0 |
| | Kotgarh | 20 | 13.3 | 0.0 | 40.0 | 33.3 | 0.0 | 6.7 | 6.7 | 100.0 |
| | Rampur | 21 | 58.3 | 0.0 | 16.7 | 16.7 | 0.0 | 0.0 | 8.3 | 100.0 |
| Shimla | Theog | 20 | 35.3 | 0.0 | 15.7 | 31.4 | 0.0 | 5.9 | 11.8 | 100.0 |
| Total of Territorial | | 341 | 38.9 | 1.5 | 30.5 | 18.0 | 0.0 | 7.6 | 3.4 | 100.0 |
| Kangra | Bajnath | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | 75.0 | 0.0 | 16.7 | 0.0 | 0.0 | 0.0 | 8.3 | 100.0 |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 42.9 | 14.3 | 42.9 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 5 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | - | - | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 53.6 | 10.7 | 25.0 | 0.0 | 0.0 | 7.1 | 3.6 | 100.0 |
| Grand Total | | 400 | 39.9 | 2.1 | 30.2 | 16.8 | 0.0 | 7.6 | 3.5 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Cow
Young (1)

| District | Division | Hondents | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | | | | | | | 0 | 1 | | | | | | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | |
| | Bharmour | 20 | 1 | | 3 | | | | 4 | 2 | | 1 | | | | 1 | 4 | 3 | 0 | 4 | 0 | 0 | 1 | 0 | 8 | |
| | Chamba WL | 20 | | | | | | | 0 | 3 | | 3 | | | | | 6 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 6 | |
| Chamba | Pangi | 20 | | | | | | | 0 | 3 | | 3 | | | | | 6 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 6 | |
| | Kinnaur | 40 | 2 | | 5 | 2 | | | 9 | 4 | | 3 | 1 | | 2 | 10 | 6 | 0 | 8 | 3 | 0 | 2 | 0 | 19 | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | 2 | | 3 | 3 | | | 8 | 2 | 0 | 3 | 3 | 0 | 0 | 0 | 8 | | |
| | Kullu | 20 | 3 | | 3 | | | | 6 | 2 | | 1 | | 2 | 5 | 5 | 0 | 3 | 1 | 0 | 2 | 0 | 0 | 11 | | |
| Kullu | Kullu WL | 20 | | | | | | | 0 | 6 | | 3 | | | 3 | 12 | 6 | 0 | 3 | 0 | 0 | 3 | 0 | 12 | | |
| Lahaul & Spiti | Spiri(W/L) | 20 | | | | | | | 0 | 3 | | 3 | 1 | | | 7 | 3 | 0 | 3 | 1 | 0 | 0 | 0 | 7 | | |
| | Karsog | 20 | 2 | | | 1 | | 2 | 5 | 6 | | 4 | 1 | 2 | 13 | 8 | 0 | 4 | 2 | 0 | 4 | 0 | 0 | 18 | | |
| Mandi | Mandi | 20 | 3 | | 4 | 1 | | | 8 | 4 | | 5 | 5 | 1 | 15 | 7 | 0 | 9 | 6 | 1 | 0 | 0 | 0 | 23 | | |
| | Kotgarh | 20 | 1 | | 1 | 1 | | | 3 | 2 | | 1 | | | 3 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 6 | | |
| | Rampur | 21 | 3 | | | 1 | | | 4 | 3 | | 4 | 2 | | 9 | 6 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 13 | | |
| Shimla | Theog | 20 | 5 | | 3 | 5 | | 1 | 16 | 3 | | 2 | | 2 | 7 | 8 | 0 | 5 | 5 | 0 | 3 | 2 | 0 | 23 | | |
| Total of Territorial | | 341 | 20 | 0 | 19 | 11 | 0 | 3 | 55 | 44 | 0 | 36 | 14 | 1 | 12 | 1 | 108 | 64 | 0 | 55 | 25 | 1 | 15 | 3 | 163 | |
| Kangra | Bajjnath | 3 | | | | | | | 0 | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Kullu | 11 | | | | | | | 0 | 6 | 1 | 2 | | | 1 | 10 | 6 | 1 | 2 | 0 | 0 | 0 | 1 | 10 | | |
| Mandi | Mandi | 3 | | | | | | | 0 | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kangra | Palampur | 1 | | | | | | | 0 | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Parvati | 10 | | | | | | | 0 | 1 | 2 | | | | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | 0 | 3 | 1 | 3 | | | 7 | 3 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| Shimla | Theog | 1 | | | | | | | 0 | | | 1 | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| Solan | Nalagarh | 5 | | | | | | | 0 | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | 0 | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Baddi | 2 | | | | | | | 0 | 0 | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 4 | 6 | 0 | 0 | 2 | 1 | 23 | 10 | 4 | 6 | 0 | 0 | 2 | 1 | 23 | |
| Grand Total | | 400 | 20 | 0 | 19 | 11 | 0 | 3 | 55 | 54 | 4 | 42 | 14 | 1 | 14 | 2 | 131 | 74 | 4 | 61 | 25 | 1 | 17 | 4 | 186 | |

Source: Livelihood Survey, JICA Study Team (2017)

Cow
Young (2)

| District | Division | Hondents | % to Total | | | | | | | Total |
|-------------------------------------|------------|------------|-------------------|-------------|-------------------|---------------|-------------------------------|------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 33.3 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 33.3 | 100.0 |
| | Bharmour | 20 | 37.5 | 0.0 | 50.0 | 0.0 | 0.0 | 12.5 | 0.0 | 100.0 |
| | Chamba WL | 20 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 31.6 | 0.0 | 42.1 | 15.8 | 0.0 | 10.5 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | 20 | 25.0 | 0.0 | 37.5 | 37.5 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | 20 | 45.5 | 0.0 | 27.3 | 9.1 | 0.0 | 18.2 | 0.0 | 100.0 |
| Kullu | Kullu WL | 20 | 50.0 | 0.0 | 25.0 | 0.0 | 0.0 | 25.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiri(W/L) | 20 | 42.9 | 0.0 | 42.9 | 14.3 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Karsog | 20 | 44.4 | 0.0 | 22.2 | 11.1 | 0.0 | 22.2 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 30.4 | 0.0 | 39.1 | 26.1 | 4.3 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | 50.0 | 0.0 | 33.3 | 16.7 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | 21 | 46.2 | 0.0 | 30.8 | 23.1 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 34.8 | 0.0 | 21.7 | 21.7 | 0.0 | 13.0 | 8.7 | 100.0 |
| Total of Territorial | | 341 | 39.3 | 0.0 | 33.7 | 15.3 | 0.6 | 9.2 | 1.8 | 100.0 |
| Kangra | Bajjnath | 3 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | 60.0 | 10.0 | 20.0 | 0.0 | 0.0 | 0.0 | 10.0 | 100.0 |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | 33.3 | 0.0 | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 42.9 | 0.0 | 33.3 | 14.3 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 5 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | - | - | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 43.5 | 17.4 | 26.1 | 0.0 | 0.0 | 8.7 | 4.3 | 100.0 |
| Grand Total | | 400 | 39.8 | 2.2 | 32.8 | 13.4 | 0.5 | 9.1 | 2.2 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.10 Buffalo Adult (1)

| District | Division | Herd Size | JFM | | | | | | | | | | Non JFM | | | | | | | Total | | | | | | |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 24 | 2 | 7 | 15 | 1 | 10 | 1 | 60 | 11 | | | 11 | 9 | | 2 | 35 | 35 | 2 | 18 | 24 | 1 | 12 | 3 | 95 |
| | Bharmour | 20 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Chamba WL | 20 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chamba | Pangi | 20 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kinnaur | 40 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sarahan WL | 20 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kullu | 20 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu WL | 20 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lahaul & Spiti | Spiri(W/L) | 20 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Karsog | 20 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 20 | 1 | | 3 | | | | 4 | 1 | 1 | | | | | | 2 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 6 | |
| | Kotgarh | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Rampur | 21 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Theog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Territorial | | 341 | 25 | 2 | 10 | 15 | 1 | 10 | 1 | 64 | 12 | 1 | 11 | 9 | 0 | 2 | 2 | 37 | 37 | 3 | 21 | 24 | 1 | 12 | 3 | 101 |
| Kangra | Bajinath | 3 | | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | | | | | | | | 2 | | | 1 | | | | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | |
| Mandi | Mandi | 3 | | | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kangra | Palampur | 1 | | | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Parvati | 10 | | | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Theog | 1 | | | | | | | | 0 | | | 1 | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | |
| Solan | Nalagarh | 5 | | | | | | | | 2 | | | 1 | | | | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | |
| Shimla | Kotgarh | 2 | | | | | | | | 0 | | | 2 | | | | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | |
| Solan | Baddi | 2 | | | | | | | | 0 | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | 4 | 0 | 5 | 0 | 0 | 2 | 0 | 11 | 4 | 0 | 5 | 0 | 0 | 2 | 0 | 11 |
| Grand Total | | 400 | | | | | | | | | 16 | 1 | 16 | 9 | 0 | 4 | 2 | 48 | 41 | 3 | 26 | 24 | 1 | 14 | 3 | 112 |

Source: Livelihood Survey, JICA Study Team (2017)

7.10 Buffalo Adult (2)

| District | Division | Herd Size | Total % | | | | | | | Total |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 36.8 | 2.1 | 18.9 | 25.3 | 1.1 | 12.6 | 3.2 | 100.0 |
| | Bharmour | 20 | - | - | - | - | - | - | - | 0.0 |
| | Chamba WL | 20 | - | - | - | - | - | - | - | 0.0 |
| Chamba | Pangi | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kinnaur | 40 | - | - | - | - | - | - | - | 0.0 |
| | Sarahan WL | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kullu | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kullu WL | 20 | - | - | - | - | - | - | - | 0.0 |
| Lahaul & Spiti | Spiri(W/L) | 20 | - | - | - | - | - | - | - | 0.0 |
| | Karsog | 20 | - | - | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 20 | 33.3 | 16.7 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | - | - | - | - | - | - | - | 0.0 |
| | Rampur | 21 | - | - | - | - | - | - | - | 0.0 |
| | Theog | 20 | - | - | - | - | - | - | - | 0.0 |
| Total of Territorial | | 341 | 36.6 | 3.0 | 20.8 | 23.8 | 1.0 | 11.9 | 3.0 | 100.0 |
| Kangra | Bajinath | 3 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | 66.7 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | - | - | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Theog | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 5 | 66.7 | 0.0 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Baddi | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 36.4 | 0.0 | 45.5 | 0.0 | 0.0 | 18.2 | 0.0 | 100.0 |
| Grand Total | | 400 | 36.6 | 2.7 | 23.2 | 21.4 | 0.9 | 12.5 | 2.7 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.10 Buffalo Young (1)

| District | Division | Herd | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 9 | | 1 | 6 | | 4 | | | | | | | | | 11 | 12 | 0 | 6 | 8 | | 5 | 0 | 31 | |
| | Bharmour | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Chamba | Pangi | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kinnaur | 40 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Sarahan WL | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kullu | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kullu WL | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Karsog | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Rampur | 21 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Theog | 20 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Territorial | | 341 | 9 | 0 | 1 | 6 | 0 | 4 | 0 | 20 | 3 | 0 | 5 | 2 | 0 | 1 | 11 | 12 | 0 | 6 | 8 | 0 | 5 | 0 | 31 | |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kullu | 11 | | | | | | | | | 1 | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Palampur | 1 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Parvati | 10 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kinnaur | 21 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Theog | 1 | | | | | | | | | | | 1 | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | |
| | Nalagarh | 5 | | | | | | | | | 1 | | 1 | | | | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | |
| | Kotgarh | 2 | | | | | | | | | | | 2 | | | | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | |
| | Baddi | 2 | | | | | | | | | | | | | | | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | 2 | 0 | 4 | 0 | 0 | 2 | 8 | 2 | 0 | 4 | 0 | 0 | 2 | 0 | 8 | |
| Grand Total | | 400 | | | | | | | | | 5 | 0 | 9 | 2 | 0 | 3 | 19 | 14 | 0 | 10 | 8 | 0 | 7 | 0 | 39 | |

Source: Livelihood Survey, JICA Study Team (2017)

7.10 Buffalo Young (2)

| District | Division | Herd | Total % | | | | | | | Total |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 38.7 | 0.0 | 19.4 | 25.8 | 0.0 | 16.1 | 0.0 | 100.0 |
| | Bharmour | 20 | - | - | - | - | - | - | - | 0.0 |
| | Chamba WL | 20 | - | - | - | - | - | - | - | 0.0 |
| Chamba | Pangi | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kinnaur | 40 | - | - | - | - | - | - | - | 0.0 |
| | Sarahan WL | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kullu | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kullu WL | 20 | - | - | - | - | - | - | - | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | - | - | - | - | - | - | - | 0.0 |
| | Karsog | 20 | - | - | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kotgarh | 20 | - | - | - | - | - | - | - | 0.0 |
| | Rampur | 21 | - | - | - | - | - | - | - | 0.0 |
| | Theog | 20 | - | - | - | - | - | - | - | 0.0 |
| Total of Territorial | | 341 | 38.7 | 0.0 | 19.4 | 25.8 | 0.0 | 16.1 | 0.0 | 100.0 |
| Kangra | Bajinath | 3 | - | - | - | - | - | - | - | 0.0 |
| | Kullu | 11 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | 0.0 |
| | Palampur | 1 | - | - | - | - | - | - | - | 0.0 |
| | Parvati | 10 | - | - | - | - | - | - | - | 0.0 |
| | Kinnaur | 21 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Theog | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Nalagarh | 5 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 2 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Baddi | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 25.0 | 0.0 | 50.0 | 0.0 | 0.0 | 25.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 35.9 | 0.0 | 25.6 | 20.5 | 0.0 | 17.9 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.11 Goat Adult (1)

| District | Division | Herd | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 15 | 2 | 4 | 12 | 1 | 3 | 37 | 1 | | | | | | | 4 | 16 | 2 | 5 | 14 | 1 | 3 | 0 | 41 | |
| | Bharmour | 20 | 3 | | 5 | | | | 8 | 1 | | 2 | | | | | 3 | 4 | 0 | 7 | 0 | 0 | 0 | 0 | 11 | |
| | Chamba WL | 20 | | | | | | | 0 | 1 | | 1 | | | | | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | |
| Chamba | Pangi | 20 | 1 | | 1 | 2 | | | 4 | 2 | | 2 | | | | | 4 | 3 | 0 | 3 | 2 | 0 | 0 | 0 | 8 | |
| | Kinnaur | 40 | | | | | | | 0 | 1 | | 1 | 1 | | | | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | 3 | | 4 | 3 | | | | 10 | 3 | 0 | 4 | 3 | 0 | 0 | 0 | 10 | |
| | Kullu | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Kullu WL | 20 | | | | | | | 0 | 2 | | 2 | | | | | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Karsog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Mandi | Mandi | 20 | 1 | | 2 | | | | 3 | | | 1 | | | | | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 4 | |
| | Kotgarh | 20 | | | 1 | 1 | | | 2 | | | | | | | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | |
| | Rampur | 21 | | | 1 | | | | 1 | 1 | | 2 | | | | | 3 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | |
| Shimla | Theog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Territorial | | 341 | 20 | 2 | 14 | 15 | 1 | 3 | 55 | 12 | 0 | 15 | 7 | 0 | 0 | 0 | 34 | 32 | 2 | 29 | 22 | 1 | 3 | 0 | 89 | |
| Kangra | Bajnath | 3 | | | | | | | | | | 1 | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | |
| Kullu | Kullu | 11 | | | | | | | | | | 1 | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Parvati | 10 | | | | | | | | | | 3 | 1 | | | | 4 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | 1 | | | | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 7 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 7 | |
| Grand Total | | 400 | | | | | | | | 12 | 4 | 18 | 7 | 0 | 0 | 0 | 41 | 32 | 6 | 32 | 22 | 1 | 3 | 0 | 96 | |

Source: Livelihood Survey, JICA Study Team (2017)

7.11 Goat Adult (2)

| District | Division | Herd | % to Total | | | | | | | Total |
|-------------------------------------|------------|------------|-------------------|-------------|-------------------|---------------|-------------------------------|------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 39.0 | 4.9 | 12.2 | 34.1 | 2.4 | 7.3 | 0.0 | 100.0 |
| | Bharmour | 20 | 36.4 | 0.0 | 63.6 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 37.5 | 0.0 | 37.5 | 25.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 33.3 | 0.0 | 33.3 | 33.3 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | 20 | 30.0 | 0.0 | 40.0 | 30.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | 20 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Kullu WL | 20 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | - | - | - | - | - | - | - | 0.0 |
| | Karsog | 20 | - | - | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 20 | 25.0 | 0.0 | 50.0 | 25.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | 0.0 | 0.0 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Rampur | 21 | 25.0 | 0.0 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | - | - | - | - | - | - | - | 0.0 |
| Total of Territorial | | 341 | 36.0 | 2.2 | 32.6 | 24.7 | 1.1 | 3.4 | 0.0 | 100.0 |
| Kangra | Bajnath | 3 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | 0.0 | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | - | - | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | - | - | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | - | - | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0.0 | 57.1 | 42.9 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 33.3 | 6.3 | 33.3 | 22.9 | 1.0 | 3.1 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.11 Goat Young (1)

| District | Division | Herd/Stocks | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|-------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 4 | | | 1 | | | 5 | | | | | | | | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | |
| | Bharmour | 20 | 1 | | 1 | | | | 2 | | | | | | | | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | |
| | Chamba WL | 20 | | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Chamba | Pangi | 20 | | | | | | | 0 | 2 | | 2 | | | | | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | |
| | Kinnaur | 40 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Sarahan WL | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kullu | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Kullu WL | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Karsog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Mandi | Mandi | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kotgarh | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Rampur | 21 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Theog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Territorial | | 341 | 5 | 0 | 1 | 1 | 0 | 0 | 7 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 7 | 0 | 3 | 1 | 0 | 0 | 11 | | |
| Kangra | Bajinath | 3 | | | | | | | 1 | | | 1 | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | |
| | Kullu | 11 | | | | | | | 1 | | | 1 | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | |
| Mandi | Mandi | 3 | | | | | | | 0 | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kangra | Palampur | 1 | | | | | | | 0 | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Parvati | 10 | | | | | | | 2 | | | 2 | | | | | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | Kinnaur | 21 | | | | | | | 0 | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Theog | 1 | | | | | | | 0 | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | 0 | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Baddi | 2 | | | | | | | 0 | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 2 | 0 | 0 | 0 | 4 | | |
| Grand Total | | 400 | | | | | | | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 8 | 7 | 2 | 5 | 1 | 0 | 0 | 15 | | |

Source: Livelihood Survey, JICA Study Team (2017)

7.11 Goat Young (2)

| District | Division | Herd/Stocks | % to Total | | | | | | | Total |
|-------------------------------------|------------|-------------|-------------------|-------------|-------------------|---------------|-------------------------------|------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 80.0 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Bharmour | 20 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | - | - | - | - | - | - | - | 0.0 |
| Chamba | Pangi | 20 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | - | - | - | - | - | - | - | 0.0 |
| | Sarahan WL | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kullu | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kullu WL | 20 | - | - | - | - | - | - | - | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | - | - | - | - | - | - | - | 0.0 |
| | Karsog | 20 | - | - | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kotgarh | 20 | - | - | - | - | - | - | - | 0.0 |
| | Rampur | 21 | - | - | - | - | - | - | - | 0.0 |
| | Theog | 20 | - | - | - | - | - | - | - | 0.0 |
| Total of Territorial | | 341 | 63.6 | 0.0 | 27.3 | 9.1 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Bajinath | 3 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | 11 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | - | - | - | - | - | - | - | 0.0 |
| | Parvati | 10 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 21 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Theog | 1 | - | - | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | - | - | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | - | - | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0.0 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 46.7 | 13.3 | 33.3 | 6.7 | 0.0 | 0.0 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.12 Sheep Adult (1)

| District | Division | Herd Size | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Bharmour | 20 | 1 | | 3 | | | | 4 | | | | | | | | 0 | | | | 3 | 0 | 0 | 0 | 0 | 4 |
| | Chamba WL | 20 | | | | | | | 0 | | | | | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Chamba | Pangi | 20 | 1 | | 1 | 2 | | | 4 | 2 | 1 | 2 | | | | | 5 | 3 | 1 | 3 | 2 | 0 | 0 | 0 | 9 | |
| | Kinnaur | 40 | | | | | | | 0 | | | | | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | 1 | | 1 | 1 | | | | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | |
| | Kullu | 20 | 2 | | 2 | | | | 4 | | | | | | | | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | |
| Kullu | Kullu WL | 20 | | | | | | | 0 | 1 | | 2 | | | | | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | |
| Lahaul & Spiti | Spiri(W/L) | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Karsog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Mandi | Mandi | 20 | 1 | | 2 | 1 | | | 4 | 1 | 1 | 2 | 2 | | | | 6 | 2 | 1 | 4 | 3 | 0 | 0 | 0 | 10 | |
| | Kotgarh | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Rampur | 21 | | | | | | | 0 | 1 | | 3 | 1 | | | | 5 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 5 | |
| Shimla | Theog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Territorial | | 341 | 5 | 0 | 8 | 3 | 0 | 0 | 16 | 6 | 2 | 10 | 4 | 0 | 0 | 0 | 22 | 11 | 2 | 18 | 7 | 0 | 0 | 0 | 38 | |
| Kangra | Bajinath | 3 | | | | | | | | | | 1 | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | |
| Kullu | Kullu | 11 | | | | | | | | | | 1 | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Parvati | 10 | | | | | | | | | | 3 | 1 | | | | 4 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | 1 | 1 | 2 | | | | | 4 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 4 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 10 | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 10 | |
| Grand Total | | 400 | 5 | 0 | 8 | 3 | 0 | 0 | 16 | 7 | 6 | 15 | 4 | 0 | 0 | 0 | 32 | 12 | 6 | 23 | 7 | 0 | 0 | 0 | 48 | |

Source: Livelihood Survey, JICA Study Team (2017)

7.12 Sheep Adult (2)

| District | Division | Herd Size | % to Total | | | | | | | Total | | | | | | | | | | | | | | | |
|-------------------------------------|------------|------------|-------------------|-------------|-------------------|---------------|-------------------------------|------------|--------------|------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | | | | | | | | | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | | | | | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Bharmour | 20 | 25.0 | | | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Chamba | Pangi | 20 | 33.3 | 11.1 | | 33.3 | 22.2 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Kinnaur | Sarahan WL | 20 | 33.3 | 0.0 | | 33.3 | 33.3 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| | Kullu | 20 | 50.0 | 0.0 | | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Kullu | Kullu WL | 20 | 33.3 | 0.0 | | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Lahaul & Spiti | Spiri(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Mandi | Mandi | 20 | 20.0 | 10.0 | | 40.0 | 30.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| | Rampur | 21 | 20.0 | 0.0 | | 60.0 | 20.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Total of Territorial | | 341 | 28.9 | 5.3 | 47.4 | 18.4 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Kangra | Bajinath | 3 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Kullu | Kullu | 11 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Kullu | Parvati | 10 | 0.0 | | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Kinnaur | Kinnaur | 21 | 25.0 | 25.0 | | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Total of Graziers/ Grassland | | 59 | 10.0 | 40.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |
| Grand Total | | 400 | 25.0 | 12.5 | 47.9 | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.12 Sheep Young (1)

| District | Division | Herd | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Bharmour | 20 | 1 | | | | | | 1 | | | | | | | | 0 | | | | | | | | | 1 |
| | Chamba WL | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Chamba | Pangi | 20 | | | | | | | 0 | 1 | | | 1 | | | | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| | Kinnaur | 40 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kullu | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu WL | 20 | | | | | | | 0 | 1 | | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Karsog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 20 | | | | | | | 0 | | | | | | | | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| | Kotgarh | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rampur | 21 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Theog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Territorial | | 341 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | |
| Kangra | Bajnath | 3 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 3 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | | | | | | | 0 | | | | | | | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Kinnaur | Kinnaur | 21 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Theog | 1 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgarh | 2 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Baddi | 2 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Grand Total | | 400 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 5 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 6 | |

Source: Livelihood Survey, JICA Study Team (2017)

7.12 Sheep Young (2)

| District | Division | Herd | % to Total | | | | | | | Total | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|------------|-------------------|--------------|-------------------|---------------|-------------------------------|-------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | | | | | | | | | | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | | | | | | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| | Bharmour | 20 | 100.0 | | | | | | 0.0 | 0.0 | | | | | | | 0.0 | 0.0 | | | | | | | | 100.0 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Chamba | Pangi | 20 | 50.0 | | | 50.0 | | | 0.0 | 0.0 | | | | | | | 0.0 | 0.0 | | | | | | | | 100.0 |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| | Kullu | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Kullu | Kullu WL | 20 | 100 | | | 0 | | | 0 | | | | | | | 0 | | | | | | | | | | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Mandi | Mandi | 20 | 0.0 | | 0.0 | 0.0 | | | 0.0 | 100.0 | | | | | | 0.0 | | | | | | | | | | 100.0 |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| | Rampur | 21 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Total of Territorial | | 341 | 60.0 | 0.0 | 20.0 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Kullu | Parvati | 10 | 0.0 | | 100.0 | 0.0 | | | 0.0 | | | | | | | 0.0 | | | | | | | | | | 100.0 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Grand Total | | 400 | 50.0 | 16.7 | 16.7 | 0.0 | 0.0 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

7.13 Ox Adult (1)

| District | Division | Herd | JFM | | | | | | | | | | Non JFM | | | | | | | Total | | | | | | |
|-------------------------------------|------------|------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|-----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | 3 | 2 | 1 | 3 | | | 9 | 5 | 5 | 4 | 1 | | | | 15 | 8 | 7 | 5 | 4 | 0 | 0 | 0 | 24 | |
| | Bharmour | 20 | 3 | 3 | 5 | 2 | | | 13 | 3 | 1 | 1 | | | | | 5 | 6 | 4 | 6 | 2 | 0 | 0 | 0 | 18 | |
| | Chamba WL | 20 | | | | | | | 0 | 11 | 1 | 5 | 1 | | | | 18 | 11 | 1 | 5 | 1 | 0 | 0 | 0 | 18 | |
| Chamba | Pangi | 20 | 1 | | | 1 | | | 2 | 2 | | 1 | | | | | 3 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 5 | |
| | Kinnaur | 40 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kullu | 20 | 1 | 1 | 1 | | | | 3 | | | | | | | | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | |
| Kullu | Kullu WL | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lahaul & Spiti | Spiri(W/L) | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Karsog | 20 | 5 | 5 | 1 | | | 1 | 12 | 2 | 2 | 2 | | | | | 6 | 7 | 7 | 3 | 0 | 0 | 1 | 0 | 18 | |
| Mandi | Mandi | 20 | 4 | 3 | 2 | 2 | | | 11 | 4 | 4 | 3 | 1 | | | 1 | 14 | 8 | 7 | 5 | 3 | 0 | 1 | 1 | 25 | |
| | Kotgarh | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Rampur | 21 | 1 | | 1 | | | | 2 | 4 | | 3 | 2 | | | | 9 | 5 | 0 | 4 | 2 | 0 | 0 | 0 | 11 | |
| Shimla | Theog | 20 | 1 | | 1 | | | | 3 | | | | | | | | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | |
| Total of Territorial | | 341 | 19 | 14 | 12 | 8 | 0 | 2 | 0 | 55 | 31 | 13 | 19 | 5 | 0 | 1 | 1 | 70 | 50 | 27 | 31 | 13 | 0 | 3 | 1 | 125 |
| Kangra | Bajnath | 3 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 3 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Theog | 1 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgarh | 2 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Baddi | 2 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 19 | 14 | 12 | 8 | 0 | 2 | 0 | 55 | 31 | 13 | 19 | 5 | 0 | 1 | 1 | 70 | 50 | 27 | 31 | 13 | 0 | 3 | 1 | 125 |

Source: Livelihood Survey, JICA Study Team (2017)

7.13 Ox Adult (2)

| District | Division | Herd | % to Total | | | | | | | | | |
|-------------------------------------|------------|------------|-------------------|-------------|-------------------|---------------|-------------------------------|------------|--------------|--------------|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | | |
| Bilaspur | Bilaspur | 60 | 33.3 | 29.2 | 20.8 | 16.7 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| | Bharmour | 20 | 33.3 | 22.2 | 33.3 | 11.1 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| | Chamba WL | 20 | 61.1 | 5.6 | 27.8 | 5.6 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Chamba | Pangi | 20 | 60.0 | 0.0 | 20.0 | 20.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| | Kinnaur | 40 | - | - | - | - | - | - | - | 0.0 | | |
| Kinnaur | Sarahan WL | 20 | - | - | - | - | - | - | - | 0.0 | | |
| | Kullu | 20 | 33.3 | 33.3 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Kullu WL | 20 | - | - | - | - | - | - | - | 0.0 | | |
| Lahaul & Spiti | Spiri(W/L) | 20 | - | - | - | - | - | - | - | 0.0 | | |
| | Karsog | 20 | 38.9 | 38.9 | 16.7 | 0.0 | 0.0 | 5.6 | 0.0 | 100.0 | | |
| Mandi | Mandi | 20 | 32.0 | 28.0 | 20.0 | 12.0 | 0.0 | 4.0 | 4.0 | 100.0 | | |
| | Kotgarh | 20 | - | - | - | - | - | - | - | 0.0 | | |
| | Rampur | 21 | 45.5 | 0.0 | 36.4 | 18.2 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Theog | 20 | 33.3 | 0.0 | 33.3 | 0.0 | 0.0 | 33.3 | 0.0 | 100.0 | | |
| Total of Territorial | | 341 | 40.0 | 21.6 | 24.8 | 10.4 | 0.0 | 2.4 | 0.8 | 100.0 | | |
| Kangra | Bajnath | 3 | - | - | - | - | - | - | - | 0.0 | | |
| Kullu | Kullu | 11 | - | - | - | - | - | - | - | 0.0 | | |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | 0.0 | | |
| Kangra | Palampur | 1 | - | - | - | - | - | - | - | 0.0 | | |
| Kullu | Parvati | 10 | - | - | - | - | - | - | - | 0.0 | | |
| Kinnaur | Kinnaur | 21 | - | - | - | - | - | - | - | 0.0 | | |
| Shimla | Theog | 1 | - | - | - | - | - | - | - | 0.0 | | |
| Solan | Nalagarh | 5 | - | - | - | - | - | - | - | 0.0 | | |
| Shimla | Kotgarh | 2 | - | - | - | - | - | - | - | 0.0 | | |
| Solan | Baddi | 2 | - | - | - | - | - | - | - | 0.0 | | |
| Total of Graziers/ Grassland | | 59 | 40.0 | 21.6 | 24.8 | 10.4 | 0.0 | 2.4 | 0.8 | 100.0 | | |
| Grand Total | | 400 | 40.0 | 21.6 | 24.8 | 10.4 | 0.0 | 2.4 | 0.8 | 100.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

7.13 Ox Young (1)

| District | Division | Grazing Dependent H | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|---------------------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|-------------------|------------|-------------------|---------------|-------------------------------|-----------|--------------|----------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Bharmour | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Chamba WL | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Chamba | Pangi | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Kinnaur | 40 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Kullu | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Kullu | Kullu WL | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Karsog | 20 | | | | | | | 0 | | | | | | | | 2 | | | | | | | | | 2 |
| Mandi | Mandi | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Kotgarh | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| | Rampur | 21 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Shimla | Theog | 20 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Kangra | Bajinath | 3 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Kullu | Kullu | 11 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Kullu | Parvati | 10 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Shimla | Theog | 1 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Shimla | Kotgarh | 2 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |

Source: Livelihood Survey, JICA Study Team (2017)

7.13 Ox Young (2)

| District | Division | Grazing Dependent H | Total % | | | | | | | Total |
|-------------------------------------|------------|---------------------|-------------------|------------|-------------------|---------------|-------------------------------|------------|--------------|------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | | | Agriculture Field | Own Forest | Government Forest | Own Grassland | Revenue Pasture (Common Land) | Purchased | Mixed Source | |
| Bilaspur | Bilaspur | 60 | - | - | - | - | - | - | - | 0.0 |
| | Bharmour | 20 | - | - | - | - | - | - | - | 0.0 |
| | Chamba WL | 20 | - | - | - | - | - | - | - | 0.0 |
| Chamba | Pangi | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kinnaur | 40 | - | - | - | - | - | - | - | 0.0 |
| Kinnaur | Sarahan WL | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kullu | 20 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Kullu WL | 20 | - | - | - | - | - | - | - | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | - | - | - | - | - | - | - | 0.0 |
| | Karsog | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Mandi | Mandi | 20 | - | - | - | - | - | - | - | 0.0 |
| | Kotgarh | 20 | - | - | - | - | - | - | - | 0.0 |
| | Rampur | 21 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Theog | 20 | - | - | - | - | - | - | - | 0.0 |
| Total of Territorial | | 341 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Kangra | Bajinath | 3 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | - | - | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 3 | - | - | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | - | - | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Theog | 1 | - | - | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | - | - | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | - | - | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | - | - | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Grand Total | | 400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.14 Weekly Expenditure on Purchased Feed (1)

| District | Division | Households | JFM | | | | | | | | | | | | | | | | | |
|----------|-------------------------------------|------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| | | | Cow | | Buffalo | | Poultry | | Goat | | Sheep | | Pig | | Yak | | Ox | | Horse | |
| | | | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) |
| Bilaspur | Bilaspur | 60 | 3 | 878 | 26 | 445 | | | 5 | 76 | | | | | | | 1 | 115 | | |
| | Bharmour | 20 | 3 | 162 | | | | | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | |
| | Pangi | 20 | 4 | 650 | | | | | | | | | | | | | | | | |
| | Kinnaur | 40 | 8 | 287 | | | | | | | | | | | | | | | | |
| | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | |
| | Kullu | 20 | 4 | 88 | | | | | | 1 | 192 | | | | | | 1 | 288 | | |
| | Kullu WL | 20 | | | | | | | | | | | | | | | | | | |
| | Lahaul & Spiti | 20 | | | | | | | | | | | | | | | | | | |
| | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | |
| | Karsog | 20 | 8 | 103 | 1 | 50 | | | | | | | | | | | 1 | 96 | | |
| | Mandi | 20 | 4 | 247 | 3 | 333 | 1 | 38 | | | 1 | 19 | | | | | 1 | 138 | | |
| | Kotgarh | 20 | 5 | 777 | | | 1 | 25 | | | | | | | | | | | | |
| | Rampur | 21 | 4 | 103 | | | | | | | | | | | | | 1 | 50 | | |
| | Shimla | 20 | 10 | 277 | | | | | | | | | | | | | | | | |
| | Theog | 20 | | | | | | | | | | | | | | | | | | |
| | Total of Territorial | 341 | 53 | 325 | 30 | 421 | 2 | 32 | 5 | 76 | 2 | 106 | 0 | 0 | 0 | 0 | 5 | 137 | 0 | 0 |
| | Kangra | Baijnath | 3 | | | | | | | | | | | | | | | | | |
| | Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | |
| | Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | |
| | Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | |
| | Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | |
| | Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | |
| | Shimla | Theog | 1 | | | | | | | | | | | | | | | | | |
| | Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | |
| | Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | |
| | Solan | Baddi | 2 | | | | | | | | | | | | | | | | | |
| | Total of Graziers/ Grassland | 59 | | | | | | | | | | | | | | | | | | |
| | Grand Total | 400 | 53 | 325 | 30 | 421 | 2 | 32 | 5 | 76 | 2 | 106 | 0 | 0 | 0 | 0 | 5 | 137 | 0 | 0 |

Source: Livelihood Survey, JICA Study Team (2017)

7.14 Weekly Expenditure on Purchased Feed (2)

| District | Division | Households | Non JFM | | | | | | | | | | | | | | | | | |
|----------|-------------------------------------|------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| | | | Cow | | Buffalo | | Poultry | | Goat | | Sheep | | Pig | | Yak | | Ox | | Horse | |
| | | | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) |
| Bilaspur | Bilaspur | 60 | 2 | 144 | 16 | 340 | 1 | 3 | 2 | 2,050 | | | | | | | | | | |
| | Bharmour | 20 | 7 | 249 | | | | | | | | | | | | | | | | |
| | Chamba WL | 20 | 5 | 4,042 | | | | | 2 | 5,000 | 2 | 5,000 | | | | | | | | |
| | Pangi | 20 | 7 | 145 | | | 1 | 25 | | | | | | | | | | | | |
| | Kinnaur | 40 | 12 | 348 | | | | | 1 | 500 | 4 | 214 | | | | | | | | |
| | Sarahan WL | 20 | 9 | 233 | | | | | 1 | 288 | | | | | | | | | | |
| | Kullu | 20 | 4 | 187 | | | | | | | | | | | | | | | | |
| | Kullu WL | 20 | 8 | 1,324 | | | | | 1 | 115 | 1 | 57 | | | | | | | | |
| | Lahaul & Spiti | 20 | 11 | 215 | | | | | | | | | | 1 | 38 | | | | | |
| | Karsog | 20 | 6 | 201 | | | | | | | | | | | | | | | | |
| | Mandi | 20 | 7 | 223 | 1 | 115 | | | | | 1 | 200 | | | | | 2 | 165 | | |
| | Kotgarh | 20 | 3 | 4,404 | | | | | | | | | | | | | | | | |
| | Rampur | 21 | 1 | 48 | | | | | | | | | | | | | | | | |
| | Shimla | Theog | 20 | 6 | 1,104 | | | | | | | | | | | | | | | |
| | Total of Territorial | 341 | 88 | 749 | 17 | 327 | 2 | 14 | 7 | 1,890 | 8 | 1,389 | 0 | 1 | 38 | 2 | 165 | 0 | 0 | |
| | Kangra | Baijnath | 3 | 3 | 223 | | | | 3 | 383 | 3 | 383 | | | | | | | | |
| | Kullu | Kullu | 11 | 8 | 496 | 1 | 278 | | 1 | 500 | 2 | 750 | | | | | | | | |
| | Mandi | Mandi | 3 | 1 | 500 | | | | 1 | 8,000 | 1 | 12,000 | | | | | | | | |
| | Kangra | Palampur | 1 | 1 | 500 | | | | | | | | | | | | | | | |
| | Kullu | Parvati | 10 | 1 | 2,000 | | | | 2 | 1,100 | 2 | 950 | | | | | | | | |
| | Kinnaur | Kinnaur | 21 | 10 | 685 | | | 1 | 300 | 2 | 200 | 4 | 488 | | | | | | | |
| | Shimla | Theog | 1 | 1 | 2,000 | 1 | 14,000 | | | | | | | | | | | | | |
| | Solan | Nalagarh | 5 | 5 | 1,795 | 2 | 20,000 | | | | 1 | 150 | | | | | | | | |
| | Shimla | Kotgarh | 2 | 2 | 13,500 | | | | | | | | | | | | | | | |
| | Solan | Baddi | 2 | 2 | 1,890 | 2 | 18,270 | | | | 1 | 150 | | | | | | | 2 | 805 |
| | Total of Graziers/ Grassland | 59 | 32 | 914 | 8 | 14,727 | 1 | 300 | 9 | 1,361 | 14 | 1,343 | 0 | 1 | 38 | 2 | 165 | 0 | 2 | 805 |
| | Grand Total | 400 | 120 | 793 | 25 | 4,935 | 3 | 109 | 16 | 1,610 | 22 | 1,360 | 0 | 1 | 38 | 2 | 165 | 0 | 2 | 805 |

Source: Livelihood Survey, JICA Study Team (2017)

7.14 Weekly Expenditure on Purchased Feed (3)

| District | Division | Households | Total | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| | | | Cow | | Buffalo | | Poultry | | Goat | | Sheep | | Pig | | Yak | | Ox | | Horse | |
| | | | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) | No of Household | Average (INR) |
| Bilaspur | Bilaspur | 60 | 5 | 584 | 42 | 405 | 1 | 3 | 7 | 640 | 0 | | 0 | | 0 | | 1 | 115 | 0 | |
| | Bharmour | 20 | 10 | 223 | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| | Chamba WL | 20 | 5 | 4,042 | 0 | | 0 | | 2 | 5,000 | 2 | 5,000 | 0 | | 0 | | 0 | | 0 | |
| Chamba | Pangi | 20 | 11 | 328 | 0 | | 1 | 25 | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| | Kinnaur | 40 | 20 | 323 | 0 | | 0 | | 1 | 500 | 4 | 214 | 0 | | 0 | | 0 | | 0 | |
| Kinnaur | Sarahan WL | 20 | 9 | 233 | 0 | | 0 | | 1 | 288 | 0 | | 0 | | 0 | | 0 | | 0 | |
| | Kullu | 20 | 11 | 137 | 0 | | 0 | | 1 | 192 | 1 | 192 | 0 | | 0 | | 1 | 288 | 0 | |
| Kullu | Kullu WL | 20 | 8 | 1,324 | 0 | | 0 | | 1 | 115 | 1 | 57 | 0 | | 0 | | 0 | | 0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 11 | 215 | 0 | | 0 | | 0 | | 0 | | 0 | | 1 | 38 | 0 | | 0 | |
| | Karsog | 20 | 14 | 145 | 1 | 50 | 0 | | 0 | | 0 | | 0 | | 0 | | 1 | 96 | 0 | |
| Mandi | Mandi | 20 | 11 | 231 | 4 | 278 | 1 | 38 | 0 | | 2 | 110 | 0 | | 0 | | 3 | 156 | 0 | |
| | Kotgarh | 20 | 8 | 2,137 | 0 | | 1 | 25 | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| | Rampur | 21 | 5 | 92 | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 1 | 50 | 0 | |
| Shimla | Theog | 20 | 16 | 587 | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| Total of Territorial | | 341 | 144 | 590 | 47 | 387 | 4 | 23 | 13 | 1,192 | 10 | 1,133 | 0 | | 1 | 38 | 7 | 145 | 0 | |
| Kangra | Bainath | 3 | 3 | 223 | | | | | 3 | 383 | 3 | 383 | | | | | | | | |
| | Kullu | 11 | 8 | 496 | 1 | 278 | | | 1 | 500 | 2 | 750 | | | | | | | | |
| Mandi | Mandi | 3 | 1 | 500 | | | | | 1 | 8,000 | 1 | 12,000 | | | | | | | | |
| Kangra | Palampur | 1 | 1 | 500 | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 1 | 2,000 | | | | | 2 | 1,100 | 2 | 950 | | | | | | | | |
| Kinnaur | Kinnaur | 21 | 10 | 685 | | | 1 | 300 | 2 | 200 | 4 | 488 | | | | | | | | |
| Shimla | Theog | 1 | 1 | 2,000 | 1 | 14,000 | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | 5 | 1,795 | 2 | 20,000 | | | | | 1 | 150 | | | | | | | | |
| Shimla | Kotgarh | 2 | 2 | 13,500 | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | 2 | 1,890 | 2 | 18,270 | | | | | 1 | 150 | | | | | | | 2 | 805 |
| Total of Graziers/ Grassland | | 59 | 32 | 914 | 8 | 14,727 | 1 | 300 | 9 | 1,361 | 14 | 1,343 | 0 | | 0 | | 0 | | 2 | 805 |
| Grand Total | | 400 | 176 | 650 | 55 | 2,473 | 5 | 78 | 22 | 1,261 | 24 | 1,255 | 0 | | 1 | 38 | 7 | 145 | 2 | 805 |

Source: Livelihood Survey, JICA Study Team (2017)

8. Grazing

Average duration of grazing between April 2016 - March 2017 (1)

| District | Division | No of Respondent s Interviewed (a) | JFM | | | | | | | | Non JFM | | | | | | | |
|-------------------------------------|----------------|------------------------------------|----------------------------------|--------------|------------------------------------|--------------|-------------------------------|--------------|---------------------|--------------|----------------------------------|--------------|------------------------------------|--------------|-------------------------------|--------------|---------------------|--------------|
| | | | Forest Land (including Pastures) | | Agricultural Fields (Private/ Own) | | Revenue Pasture (Common Land) | | Around Homestead | | Forest Land (including Pastures) | | Agricultural Fields (Private/ Own) | | Revenue Pasture (Common Land) | | Around Homestead | |
| | | | Counts of Responses | No of months | Counts of Responses | No of months | Counts of Responses | No of months | Counts of Responses | No of months | Counts of Responses | No of months | Counts of Responses | No of months | Counts of Responses | No of months | Counts of Responses | No of months |
| Bilaspur | Bilaspur | 60 | 3 | 6.3 | 8 | 5.1 | | | | | 7 | 8.4 | 1 | 2.0 | | | | |
| | Bharmour | 20 | 9 | 7.3 | 5 | 3.0 | | | | | 9 | 7.9 | 3 | 3.0 | | | | |
| | Chamba WL | 20 | | | | | | | | | 19 | 7.5 | 8 | 3.7 | | | | |
| Chamba | Pangi | 20 | 9 | 5.9 | 4 | 2.5 | | | | | 9 | 7.1 | 3 | 2.7 | | | | |
| | Kinnaur | 40 | 7 | 7.7 | 1 | 1.0 | | | | | 8 | 6.5 | 5 | 4.8 | | | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | 9 | 8.4 | 4 | 2.3 | | | | |
| | Kullu | 20 | 7 | 7.6 | 3 | 2.3 | | | | | | | 1 | 2.0 | | | | |
| | Kullu WL | 20 | | | | | | | | | 10 | 6.2 | 2 | 3.0 | | | | |
| Kullu | Lahaul & Spiti | 20 | | | | | | | | | 10 | 6.3 | 4 | 4.5 | | | 1 | 12 |
| | Spiti (W/L) | 20 | | | | | | | | | | | | | | | | |
| | Karsog | 20 | 2 | 12.0 | 1 | 2.0 | | | | | 5 | 4.4 | 5 | 4.0 | | | | |
| Mandi | Mandi | 20 | 8 | 10.1 | 4 | 4.3 | | | | | 6 | 6.7 | 5 | 2.4 | | | | |
| | Kotgarh | 20 | 2 | 7.5 | 2 | 2.5 | | | | | | | | | | | | |
| | Rampur | 21 | 4 | 9.0 | 2 | 4.5 | | | | | 5 | 8.2 | 2 | 3.0 | 1 | 2.0 | | |
| Shimla | Theog | 20 | 4 | 5.3 | 4 | 4.8 | | | | | 1 | 2.0 | 1 | 1.0 | | | | |
| Total of Territorial | | 341 | 55 | 7.7 | 34 | 3.7 | | | | | 98 | 7.1 | 44 | 3.3 | 2 | 2.0 | 1 | 12 |
| Kangra | Bainath | 3 | | | | | | | | | 3 | 4.7 | 1 | 6.0 | 1 | 6.0 | | |
| Kullu | Kullu | 11 | | | | | | | | | 5 | 4.6 | 1 | 4.0 | | | | |
| Mandi | Mandi | 3 | | | | | | | | | 3 | 4.0 | 2 | 5.5 | | | | |
| Kangra | Palampur | 1 | | | | | | | | | 1 | 12.0 | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | 3 | 5.5 | 2 | 6.5 | 1 | 8.0 | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | 15 | 7.5 | 9 | 5.1 | 2 | 2.5 | | |
| Shimla | Theog | 1 | | | | | | | | | 1 | 4.0 | 1 | 8.0 | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | 3 | 4.3 | 1 | 7.0 | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | 2 | 5.0 | 2 | 7.0 | | | | |
| Solan | Baddi | 2 | | | | | | | | | 2 | 6.0 | 2 | 6.0 | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | 38 | 5.4 | 21 | 6.5 | 4 | 7.0 | | |
| Grand Total | | 400 | 55 | 7.7 | 34 | 3.7 | | | | | 136 | 6.8 | 65 | 4.1 | 6 | 3.8 | 1 | 12 |

Source: Livelihood Survey, JICA Study Team (2017)

Average duration of grazing between April 2016 - March 2017 (2)

| District | Division | No of Respondent s Interviewed (a) | Total | | | | | | | | | | | | | | | |
|-------------------------------------|----------------|------------------------------------|----------------------------------|--------------|------------------------------------|--------------|-------------------------------|--------------|---------------------|--------------|--|--|--|---|------|--|--|--|
| | | | Forest Land (including Pastures) | | Agricultural Fields (Private/ Own) | | Revenue Pasture (Common Land) | | Around Homestead | | | | | | | | | |
| | | | Counts of Responses | No of months | Counts of Responses | No of months | Counts of Responses | No of months | Counts of Responses | No of months | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 10 | 7.8 | 9 | 4.8 | 1 | 2.0 | | | | | | | | | | |
| | Bharmour | 20 | 18 | 7.6 | 8 | 3.0 | | | | | | | | | | | | |
| | Chamba WL | 20 | 19 | 7.5 | 8 | 3.7 | | | | | | | | | | | | |
| Chamba | Pangi | 20 | 18 | 6.5 | 7 | 2.6 | | | | | | | | | | | | |
| | Kinnaur | 40 | 15 | 7.0 | 6 | 4.2 | | | | | | | | | | | | |
| | Sarahan WL | 20 | 9 | 8.4 | 4 | 2.3 | | | | | | | | | | | | |
| | Kullu | 20 | 7 | 7.6 | 4 | 2.3 | | | | | | | | | | | | |
| | Kullu WL | 20 | 10 | 6.2 | 2 | 3.0 | | | | | | | | | | | | |
| Kullu | Lahaul & Spiti | 20 | 10 | 6.3 | 4 | 4.5 | | | | | | | | 1 | 12.0 | | | |
| | Spiti (W/L) | 20 | 7 | 6.6 | 6 | 3.7 | | | | | | | | | | | | |
| | Karsog | 20 | 7 | 6.6 | 6 | 3.7 | | | | | | | | | | | | |
| Mandi | Mandi | 20 | 14 | 8.6 | 9 | 3.2 | | | | | | | | | | | | |
| | Kotgarh | 20 | 2 | 7.5 | 2 | 2.5 | | | | | | | | | | | | |
| | Rampur | 21 | 9 | 8.6 | 4 | 3.8 | 1 | 2.0 | | | | | | | | | | |
| Shimla | Theog | 20 | 5 | 4.6 | 5 | 4.0 | | | | | | | | | | | | |
| Total of Territorial | | 341 | 153 | 7.3 | 78 | 3.5 | 2 | 2.0 | 1 | 12.0 | | | | | | | | |
| Kangra | Bainath | 3 | 3 | 4.7 | 1 | 6.0 | 1 | 6.0 | | | | | | | | | | |
| Kullu | Kullu | 11 | 5 | 4.6 | 1 | 4.0 | | | | | | | | | | | | |
| Mandi | Mandi | 3 | 3 | 4.0 | 2 | 5.5 | | | | | | | | | | | | |
| Kangra | Palampur | 1 | 1 | 12.0 | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 3 | 5.5 | 2 | 6.5 | 1 | 8.0 | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | 15 | 7.5 | 9 | 5.1 | 2 | 2.5 | | | | | | | | | | |
| Shimla | Theog | 1 | 1 | 4.0 | 1 | 8.0 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | 3 | 4.3 | 1 | 7.0 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | 2 | 5.0 | 2 | 7.0 | | | | | | | | | | | | |
| Solan | Baddi | 2 | 2 | 6.0 | 2 | 6.0 | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 38 | 5.4 | 21 | 6.5 | 4 | 7.0 | | | | | | | | | | |
| Grand Total | | 400 | 191 | 7.0 | 99 | 4.0 | 6 | 3.8 | 1 | 12.0 | | | | | | | | |

Source: Livelihood Survey, JICA Study Team (2017)

9. Household Energy

9.1 Types of Household Energies Used (Multiple Response)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | Total | Non JFM | | | | | | Total | Total | | | | | | % to the Total Number of Respondents (n=a) | | | | | | | | | | | | |
|----------------|-----------------------------|-----------------------------------|----------|--------|-----|----------|-------|-------------------------------|-------|----------|--------|-----|----------|-------|-------------------------------|-------|----------|--------|-----|----------|-------|-------------------------------|--|--------|-----|----------|-------|-------------------------------|------|------|-------|-------|------|------|------|
| | | | Fuelwood | Biogas | LPG | Kerosene | Solar | Electricity (Grid Connection) | | Fuelwood | Biogas | LPG | Kerosene | Solar | Electricity (Grid Connection) | | Fuelwood | Biogas | LPG | Kerosene | Solar | Electricity (Grid Connection) | Fuelwood | Biogas | LPG | Kerosene | Solar | Electricity (Grid Connection) | | | | | | | |
| Bilaspur | Bilaspur | 60 | 38 | | | 30 | 5 | | 3 | 76 | 21 | | | 17 | 2 | | 1 | 1 | 42 | 59 | 0 | | 47 | 7 | | 1 | 4 | 118 | 98.3 | 0.0 | | 78.3 | 11.7 | 1.7 | 6.7 |
| | Bharmour | 20 | 10 | | | 4 | 1 | | 1 | 16 | 8 | | | 5 | 3 | | 1 | 1 | 17 | 18 | 0 | | 9 | 4 | | 0 | 2 | 33 | 90.0 | 0.0 | | 45.0 | 20.0 | 0.0 | 10.0 |
| | Chamba WL | 20 | | | | | | | | 0 | 19 | | | 17 | 5 | | | 1 | 42 | 19 | 0 | | 17 | 5 | | 0 | 1 | 42 | 95.0 | 0.0 | | 85.0 | 25.0 | 0.0 | 5.0 |
| Chamba | Pangi | 20 | 10 | | | 7 | 6 | | 1 | 24 | 10 | | | 10 | 4 | | | 24 | 20 | 0 | | 17 | 10 | | 0 | 1 | 48 | 100.0 | 0.0 | | 85.0 | 50.0 | 0.0 | 5.0 | |
| | Kinnaur | 40 | 18 | | | 17 | 5 | | 2 | 42 | 21 | | | 19 | 6 | | 3 | 49 | 39 | 0 | | 36 | 11 | | 0 | 5 | 91 | 97.5 | 0.0 | | 90.0 | 27.5 | 0.0 | 12.5 | |
| | Sarahan WL | 20 | | | | | | | | 0 | 19 | | | 17 | 2 | | 1 | 41 | 19 | 0 | | 17 | 2 | | 1 | 2 | 41 | 95.0 | 0.0 | | 85.0 | 10.0 | 5.0 | 10.0 | |
| Kullu | Kullu | 20 | 10 | | | 9 | 4 | | | 23 | 9 | | | 10 | | | | 19 | 19 | 0 | | 19 | 4 | | 0 | 0 | 42 | 95.0 | 0.0 | | 95.0 | 20.0 | 0.0 | 0.0 | |
| | Kullu WL | 20 | | | | | | | | 0 | 17 | | | 20 | 5 | | 2 | 44 | 17 | 0 | | 20 | 5 | | 0 | 2 | 44 | 85.0 | 0.0 | | 100.0 | 25.0 | 0.0 | 10.0 | |
| | Spiti(WL) | 20 | | | | | | | | 0 | 14 | | | 20 | 9 | | 1 | 45 | 14 | 0 | | 20 | 9 | | 1 | 11 | 45 | 70.0 | 0.0 | | 100.0 | 45.0 | 5.0 | 5.0 | |
| Lahaul & Spiti | Karsog | 20 | 6 | | | 10 | | | | 16 | 8 | | | 7 | 2 | | | 17 | 14 | 0 | | 17 | 2 | | 0 | 0 | 33 | 70.0 | 0.0 | | 85.0 | 10.0 | 0.0 | 0.0 | |
| | Mandi | 20 | 9 | | | 4 | | | 1 | 14 | 11 | | | 5 | | | | 16 | 20 | 0 | | 9 | 0 | | 0 | 1 | 30 | 100.0 | 0.0 | | 45.0 | 0.0 | 0.0 | 5.0 | |
| | Kotgarh | 20 | 9 | | | 7 | | | 1 | 17 | 6 | | | 10 | 2 | | 1 | 4 | 23 | 15 | 0 | | 17 | 2 | | 1 | 5 | 40 | 75.0 | 0.0 | | 88.0 | 10.0 | 5.0 | 25.0 |
| Mandi | Rampur | 21 | 8 | | | 6 | 1 | | 1 | 17 | 11 | | | 2 | | | | 13 | 19 | 0 | | 8 | 1 | | 1 | 1 | 30 | 90.5 | 0.0 | | 38.1 | 4.8 | 4.8 | 4.8 | |
| | Theog | 20 | 9 | | | 10 | | | 2 | 21 | 8 | | | 9 | | | 1 | 18 | 17 | 0 | | 19 | 0 | | 3 | 39 | 85.0 | 0.0 | | 95.0 | 0.0 | 0.0 | 15.0 | | |
| | Total of Territorial | 341 | 127 | 0 | 104 | 22 | 1 | 12 | 266 | 182 | 0 | 168 | 40 | 4 | 16 | | | 410 | 309 | 0 | 272 | 62 | 5 | 28 | 676 | 96.6 | 0.0 | | 79.8 | 18.2 | 1.5 | 8.2 | | | |
| Kangra | Bajinath | 3 | | | | | | | | 3 | | | | 3 | | | | 6 | 3 | 0 | | 3 | 0 | | 0 | 0 | 6 | 100.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | |
| | Kullu | 11 | | | | | | | | 10 | | | 10 | 3 | | | 2 | 26 | 10 | 0 | | 10 | 3 | | 0 | 3 | 26 | 90.9 | 0.0 | | 90.9 | 27.3 | 0.0 | 27.3 | |
| | Mandi | 3 | | | | | | | | 3 | | | 1 | | 1 | | 1 | 2 | 7 | 3 | 0 | | 0 | 1 | 1 | 2 | 7 | 100.0 | 0.0 | | 0.0 | 33.3 | 33.3 | 66.7 | |
| Kangra | Palampur | 1 | | | | | | | | 1 | | | 1 | | | | | 3 | 1 | 0 | | 1 | 1 | | 0 | 0 | 3 | 100.0 | 0.0 | | 100.0 | 100.0 | 0.0 | 0.0 | |
| | Kullu | 10 | | | | | | | | 10 | | | 7 | 5 | | | | 22 | 10 | 0 | | 7 | 5 | | 0 | 22 | 100.0 | 0.0 | | 70.0 | 50.0 | 0.0 | 0.0 | | |
| | Kinnaur | 21 | | | | | | | | 20 | | | 19 | 15 | | | | 54 | 20 | 0 | | 19 | 15 | | 0 | 54 | 95.2 | 0.0 | | 90.5 | 71.4 | 0.0 | 0.0 | | |
| Shimla | Theog | 1 | | | | | | | | 1 | | | | | | | | 1 | 1 | 0 | | 0 | 0 | | 0 | 1 | 100.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| | Solan | 5 | | | | | | | | 5 | | | | | | | | 5 | 5 | 0 | | 0 | 0 | | 0 | 5 | 100.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| | Shimla | 2 | | | | | | | | 2 | | | | | | | | 2 | 2 | 0 | | 0 | 0 | | 0 | 2 | 100.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Solan | Baidi | 2 | | | | | | | | 2 | | | | | | | | 2 | 2 | 0 | | 0 | 0 | | 0 | 2 | 100.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | |
| | Total of Graziers/Grassland | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 0 | 40 | 25 | 1 | 5 | | | 128 | 57 | 0 | 40 | 25 | 1 | 5 | 128 | 96.6 | 0.0 | | 67.8 | 42.4 | 1.7 | 8.5 | | | |
| | Grand Total | 400 | 127 | 0 | 104 | 22 | 1 | 12 | 266 | 229 | 0 | 208 | 65 | 5 | 21 | | | 538 | 366 | 0 | 312 | 87 | 6 | 33 | 804 | 91.5 | 0.0 | | 78.0 | 21.8 | 1.5 | 8.3 | | | |

Source: Livelihood Survey, JICA Study Team (2017)

9.2 Average Consumption of Fuel

| District | Division | Respondents Int | JFM | | | | | | Total | Non JFM | | | | | | Total | Total | | | | | |
|----------------|-----------------------------|-----------------|------------------------------|---------------|-------------------|----------------|---------------|-------------------------------|------------------------------|---------------|-------------------|----------------|---------------|---------------|-------------------------------|---------------|-------------------|----------------|---------------|---------------|-------|-------------------------------|
| | | | Fuelwood | Biogas | LPG | Kerosene | Solar | Electricity (Grid Connection) | | Fuelwood | Biogas | LPG | Kerosene | Solar | Electricity (Grid Connection) | | Fuelwood | Biogas | LPG | Kerosene | Solar | Electricity (Grid Connection) |
| Unit | | | Kg per week (bundle = 20 kg) | Hours per day | Cylinder per year | Litre per week | Hours per day | Hours per day | Kg per week (bundle = 20 kg) | Hours per day | Cylinder per year | Litre per week | Hours per day | Hours per day | Kg per week (bundle = 20 kg) | Hours per day | Cylinder per year | Litre per week | Hours per day | Hours per day | | |
| Bilaspur | Bilaspur | 60 | 135.1 | | 4.0 | 1.0 | | 1.0 | 107.4 | | 4.1 | 0.8 | | 4.0 | 125.4 | | 4.0 | 0.9 | | 4.0 | 1.0 | |
| | Bharmour | 20 | 120.5 | | 5.5 | 1.0 | | 1.0 | 92.5 | | 3.4 | 10.0 | | 2.0 | 108.1 | | 4.3 | 5.5 | | | 1.5 | |
| | Chamba WL | 20 | | | | | | | 124.2 | | 3.9 | 14.0 | | 3.0 | 124.2 | | 3.9 | 14.0 | | | 3.0 | |
| Chamba | Pangi | 20 | 62.0 | | 4.0 | 10.5 | | 1.0 | 82.0 | | 5.3 | 20.0 | | 7.0 | 72.0 | | 4.7 | 15.3 | | | 1.0 | |
| | Kinnaur | 40 | 80.0 | | 6.3 | 15.0 | | 0.8 | 101.0 | | 5.5 | 7.2 | | 1.0 | 91.6 | | 5.9 | 11.1 | | | 0.9 | |
| | Sarahan WL | 20 | | | | | | | 107.4 | | 3.8 | | 0.5 | 0.4 | 107.4 | | 3.8 | - | 0.5 | | 0.4 | |
| Kullu | Kullu | 20 | 100.0 | | 3.6 | 7.5 | | | 66.7 | | 6.3 | | | | 84.2 | | 4.9 | 7.5 | | | | |
| | Kullu WL | 20 | | | | | | | 93.3 | | 6.9 | 9.3 | | 2.0 | 93.3 | | 6.9 | 9.3 | | | 2.0 | |
| | Spiti(WL) | 20 | | | | | | | 96.1 | | 7.0 | 10.7 | 3.0 | 2.0 | 96.1 | | 7.0 | 10.7 | 3.0 | | 2.0 | |
| Lahaul & Spiti | Karsog | 20 | 71.4 | | 6.6 | | | | 72.5 | | 4.8 | 1.0 | | | 72.0 | | 5.9 | 1.0 | | | | |
| | Mandi | 20 | 124.4 | | 3.8 | | | 0.5 | 103.6 | | 3.6 | | | | 113.0 | | 3.7 | | | | 0.5 | |
| | Kotgarh | 20 | 86.7 | | 5.4 | | | | 36.67 | | 7.0 | 10.0 | 2.0 | 1.4 | 66.7 | | 6.4 | 10.0 | 2.0 | | 1.4 | |
| Mandi | Rampur | 21 | 75.0 | | 4.0 | 10.0 | 2.0 | | 167.3 | | 2.0 | | | | 128.4 | | 3.7 | 10.0 | 2.0 | | 2.0 | |
| | Theog | 20 | 88.0 | | 8.1 | | | 0.5 | 82.5 | | 8.6 | | | 0.3 | 85.6 | | 8.3 | | | | 0.4 | |
| | Total of Territorial | 341 | 103.4 | | 5.2 | 8.8 | 2.0 | 0.8 | 100.7 | | 5.4 | 10.6 | 2.4 | 1.3 | 101.8 | | 5.3 | 10.0 | 2.3 | | 1.1 | |
| Kangra | Bajinath | 3 | | | | | | | 160.0 | | 9.3 | | | | 160.0 | | 9.3 | | | | | |
| | Kullu | 11 | | | | | | | 90.7 | | 6.6 | 0.7 | | 1.0 | 90.7 | | 6.6 | 0.7 | | | 1.0 | |
| | Mandi | 3 | | | | | | | 146.7 | | 3.0 | | | | 146.7 | | 3.0 | | | | | |
| Kangra | Palampur | 1 | | | | | | | 100.0 | | 6.0 | 0.5 | | | 100.0 | | 6.0 | 0.5 | | | | |
| | Kullu | 10 | | | | | | | 100.0 | | 4.0 | 1.5 | | | 100.0 | | 4.0 | 1.5 | | | | |
| | Kinnaur | 21 | | | | | | | 160.0 | | 5.5 | 9.5 | | | 160.0 | | 5.5 | 9.5 | | | | |
| Shimla | Theog | 1 | | | | | | | 250.0 | | | | | | 250.0 | | | | | | | |
| | Solan | 5 | | | | | | | 100.0 | | | | | | 100.0 | | | | | | | |
| | Shimla | 2 | | | | | | | 50.0 | | | | | | 50.0 | | | | | | | |
| Solan | Baidi | 2 | | | | | | | 40.0 | | | | | | 40.0 | | | | | | | |
| | Total of Graziers/Grassland | 59 | | | | | | | 111.1 | | 5.8 | 6.3 | | 1 | 111.1 | | 5.8 | 6.3 | | | 1.0 | |
| | Grand Total | 400 | 103.4 | | 5.2 | 8.8 | 2.0 | 0.8 | 102.6 | | 5.5 | 8.4 | 2.4 | 1.3 | 102.9 | | 5.4 | 8.5 | 2.3 | | 1.1 | |

Source: Livelihood Survey, JICA Study Team (2017)

9.3 Source of Fuelwood (1)

| District | Division | Respondents Int | JFM | | | | | | | | | | | Non JFM | | | | | | Division Total | | | | | | | | | | | | | |
|------------------------------------|------------|-----------------|-----------|-----------------|------------------------|-------------------|------------|----------|-------------------|-------------|------------|-----------|-----------------|------------------------|-------------------|------------|----------|-------------------|-------------|----------------|-----------|-----------------|------------------------|-------------------|------------|----------|-------------------|-------------|------------|----------|------------|----|----|
| | | | Purchase | From Own Forest | From Government Forest | Agriculture Field | Grass land | Own Land | Forest Department | Common Land | Total | Purchase | From Own Forest | From Government Forest | Agriculture Field | Grass land | Own Land | Forest Department | Common Land | Total | Purchase | From Own Forest | From Government Forest | Agriculture Field | Grass land | Own Land | Forest Department | Common Land | Total | | | | |
| Bilaspur | Bilaspur | 60 | 5 | 4 | 16 | 29 | | | | | | 54 | 2 | 1 | 16 | 15 | | | | | | | 34 | 7 | 5 | 32 | 44 | 0 | 0 | 0 | 0 | 0 | 88 |
| | Bhamour | 20 | | | 10 | 3 | | | | | 13 | | | | 8 | 3 | | | | | | | 11 | 0 | 0 | 18 | 6 | 0 | 0 | 0 | 0 | 24 | |
| | Chamba WL | 20 | | | | | | | | | | 0 | 3 | | 19 | 3 | | | | | | | 25 | 3 | 0 | 19 | 3 | 0 | 0 | 0 | 0 | 25 | |
| Chamba | Pangj | 20 | 1 | | 9 | 5 | | | | | 15 | | | | 10 | 2 | | | | | | 12 | 1 | 0 | 19 | 7 | 0 | 0 | 0 | 0 | 27 | | |
| | Kinnaur | 40 | 2 | | 13 | 9 | | | | | 24 | 2 | | | 19 | 14 | | | | | | 36 | 4 | 0 | 32 | 23 | 0 | 0 | 0 | 1 | 60 | | |
| | Suraban WL | 20 | 0 | | | | | | | | 0 | 1 | | 15 | 12 | 1 | | | | | | 29 | 1 | 0 | 15 | 12 | 1 | 0 | 0 | 29 | | | |
| | Kullu | 20 | 2 | | 9 | 4 | | | | | 15 | 3 | 1 | | 6 | | | | | | | 10 | 5 | 1 | 9 | 10 | 0 | 0 | 0 | 0 | 25 | | |
| | Kullu WL | 20 | | | | | | | | | 0 | 3 | | 9 | 9 | | | 1 | | | | 22 | 3 | 0 | 9 | 9 | 0 | 1 | 0 | 0 | 22 | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | 0 | 10 | | | 1 | | | | 4 | | | 15 | 10 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 15 | | |
| | Karsog | 20 | | | 4 | 7 | | | | | 11 | 1 | | 8 | 6 | | | | | | | 15 | 1 | 0 | 12 | 13 | 0 | 0 | 0 | 0 | 26 | | |
| Mandi | Mandi | 20 | | | 5 | 8 | | | | | 13 | | | 10 | 8 | | | | | | | 18 | 0 | 0 | 15 | 16 | 0 | 0 | 0 | 0 | 31 | | |
| | Kotgarh | 20 | | | 7 | 4 | 2 | | | | 13 | | 1 | | 6 | | | | | | | 7 | 0 | 1 | 7 | 10 | 2 | 0 | 0 | 0 | 20 | | |
| | Rampur | 21 | | 1 | 2 | 5 | | | | | 11 | | | 11 | 0 | | | | | | | 17 | 0 | 11 | 16 | 11 | 0 | 0 | 0 | 0 | 28 | | |
| | Theog | 20 | | 3 | 3 | 5 | 1 | 1 | | | 13 | | | 4 | 6 | 1 | | | 1 | | | 12 | 0 | 3 | 7 | 11 | 2 | 11 | 0 | 1 | 25 | | |
| Total of Territorial | | 341 | 10 | 8 | 81 | 79 | 3 | 1 | 0 | 0 | 182 | 25 | 3 | 129 | 97 | 2 | 1 | 5 | 1 | 263 | 35 | 11 | 210 | 176 | 5 | 2 | 5 | 1 | 448 | | | | |
| Kangra | Bajinath | 3 | | | | | | | | | | 1 | 1 | 2 | 1 | | | | | | 5 | 1 | 1 | 2 | 1 | 0 | 0 | 5 | 0 | 10 | | | |
| | Kullu | 11 | | | | | | | | | | | 4 | 3 | 3 | | | | | | | 10 | 0 | 4 | 3 | 3 | 0 | 0 | 10 | 0 | 20 | | |
| Mandi | Mandi | 3 | | | | | | | | | | | 2 | | | | | | | | | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 4 | | |
| Kangra | Palampur | 1 | | | | | | | | | | | 1 | | | | | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | | |
| | Parvati | 10 | | | | | | | | | | | 8 | 1 | | | | | | | | 9 | 0 | 8 | 1 | 0 | 0 | 0 | 9 | 0 | 18 | | |
| | Kinnaur | 21 | | | | | | | | | | 1 | 22 | | | | | | | | | 23 | 0 | 1 | 22 | 0 | 0 | 0 | 23 | 0 | 46 | | |
| Shimla | Theog | 1 | | | | | | | | | | | 1 | | | | | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | | |
| Solan | Nalagarh | 5 | | | | | | | | | | 1 | 3 | 1 | | | | | | | | 5 | 1 | 3 | 1 | 0 | 0 | 0 | 5 | 0 | 10 | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | 2 | | | | | | | | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 4 | | |
| Solan | Baddi | 2 | | | | | | | | | | | | 2 | | | | | | | | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 4 | | |
| Total of Graziers/Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 17 | 37 | 4 | 0 | 0 | 0 | 0 | 0 | 60 | 2 | 17 | 37 | 4 | 0 | 0 | 0 | 60 | 0 | 120 | | |
| Grand Total | | 400 | 10 | 8 | 81 | 79 | 3 | 1 | 0 | 0 | 182 | 27 | 20 | 166 | 101 | 2 | 1 | 5 | 1 | 323 | 37 | 28 | 247 | 180 | 5 | 2 | 65 | 1 | 565 | | | | |

Source: Livelihood Survey, JICA Study Team (2017)

9.3 Source of Fuelwood (1)

| District | Division | No of Respondents Interviewed | % to Division Total | | | | | | | | | | |
|------------------------------------|------------|-------------------------------|---------------------|-----------------|------------------------|-------------------|------------|------------|-------------------|-------------|--------------|-------|--|
| | | | Purchase | From Own Forest | From Government Forest | Agriculture Field | Grass land | Own Land | Forest Department | Common Land | Total | | |
| Bilaspur | Bilaspur | 60 | 8.0 | 5.7 | 36.4 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Bhamour | 20 | 0.0 | 0.0 | 75.0 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Chamba WL | 20 | 12.0 | 0.0 | 76.0 | 12.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Pangj | 20 | 3.7 | 0.0 | 70.4 | 25.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kinnaur | 40 | 6.7 | 0.0 | 53.3 | 38.3 | 0.0 | 0.0 | 0.0 | 1.7 | 0.0 | 100.0 | |
| | Suraban WL | 20 | 3.4 | 0.0 | 51.7 | 41.4 | 3.4 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu | 20 | 20.0 | 4.0 | 36.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | 13.6 | 0.0 | 40.9 | 40.9 | 0.0 | 4.5 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 66.7 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 | 26.7 | 0.0 | 0.0 | 100.0 | |
| | Karsog | 20 | 3.8 | 0.0 | 46.2 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Mandi | Mandi | 20 | 0.0 | 0.0 | 48.4 | 51.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | 20 | 0.0 | 5.0 | 35.0 | 50.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Rampur | 21 | 0.0 | 3.6 | 57.1 | 39.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Theog | 20 | 0.0 | 12.0 | 28.0 | 44.0 | 8.0 | 4.0 | 0.0 | 0.0 | 4.0 | 100.0 | |
| Total of Territorial | | 341 | 7.9 | 2.5 | 47.2 | 39.6 | 1.1 | 0.4 | 1.1 | 0.2 | 100.0 | | |
| Kangra | Bajinath | 3 | 10.0 | 10.0 | 20.0 | 10.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| | Kullu | 11 | 0.0 | 20.0 | 15.0 | 15.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| Mandi | Mandi | 3 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| Kangra | Palampur | 1 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| | Parvati | 10 | 0.0 | 44.4 | 5.6 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| | Kinnaur | 21 | 0.0 | 2.2 | 47.8 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| Shimla | Theog | 1 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| Solan | Nalagarh | 5 | 10.0 | 30.0 | 10.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| Shimla | Kotgarh | 2 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| Solan | Baddi | 2 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| Total of Graziers/Grassland | | 59 | 1.7 | 14.2 | 30.8 | 3.3 | 0.0 | 0.0 | 50.0 | 0.0 | 100.0 | | |
| Grand Total | | 400 | 6.5 | 5.0 | 43.7 | 31.9 | 0.9 | 0.4 | 11.5 | 0.2 | 100.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

9.4 Fuel Consumption at Household during Winter
 No of Household Using Different Types of Fuel and Average Volume
 * Winter season was assumed to be November - April/6 Months/24 weeks)

| District | Division | No of Respondents Interviewed | JFM | | | | | | Non JFM | | | | | | Total | | | | | |
|-------------------------------------|------------|-------------------------------|-----------------------|------------------------------------|-----------------------|----------------------------|-----------------------------|----------------------------|-----------------------|------------------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|-----------------------|------------------------------------|-----------------------|-------------------------|-----------------------------|-------------------------|
| | | | Fuelwood | | Solar | | Electricity Grid Connection | | Fuelwood | | Solar | | Electricity Grid Connection | | Fuelwood | | Solar | | Electricity Grid Connection | |
| | | | No of Household Using | Average (Unit: Quintal per season) | No of Household Using | Average (Hours per season) | No of Household Using | Average (Hours per season) | No of Household Using | Average (Unit: Quintal per season) | No of Household Using | Average (Hours per day) | No of Household Using | Average (Hours per day) | No of Household Using | Average (Unit: Quintal per season) | No of Household Using | Average (Hours per day) | No of Household Using | Average (Hours per day) |
| Bilaspur | Bilaspur | 60 | 39 | 44.2 | 1 | 900 | 2 | 10 | 21 | 50.1 | 1 | 1.0 | 60 | 46.2 | 1 | 3 | 7.8 | | | |
| | Bharmour | 20 | 11 | 48.0 | | | 1 | 4.0 | 9 | 48.5 | 2 | 2.0 | 20 | 48.2 | | 3 | 2.7 | | | |
| | Chamba WL | 20 | | | | | | | 20 | 49.2 | 1 | 5.0 | 20 | 49.2 | | 1 | 5.0 | | | |
| Chamba | Pangi | 20 | 10 | 37.9 | | | | | 10 | 53.8 | | | 20 | 45.8 | | | | | | |
| | Kinnaur | 40 | 19 | 49.8 | | | | | 21 | 37.9 | 3 | 1.0 | 40 | 43.6 | | 3 | 1.0 | | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | 20 | 44.7 | 2 | 1.5 | 20 | 44.7 | | 2 | 1.5 | | | |
| | Kullu | 20 | 10 | 44.2 | | | | | 10 | 32.3 | | | 30 | 38.2 | | | | | | |
| | Kullu WL | 20 | | | | | | | 19 | 41.7 | | | 19 | 41.7 | | | | | | |
| Lahaul & Spiti | Spiti(WL) | 20 | | | | | | | 20 | 49.3 | 1 | | 20 | 49.3 | 1 | | | | | |
| | Karsog | 20 | 9 | 24.7 | | | 1 | | 10 | 23.5 | | | 19 | 24.1 | | | 1 | | | |
| Mandi | Mandi | 20 | 9 | 35.2 | | | | | 11 | 36.7 | | | 20 | 36.0 | | | | | | |
| | Kotgarh | 20 | 10 | 35.5 | | | 1 | | 8 | 20.1 | 4 | 21.7 | 18 | 27.8 | | 5 | 21.7 | | | |
| | Rampur | 21 | 10 | 39.4 | | | 2 | 2.5 | 11 | 47.6 | | | 21 | 43.7 | | 2 | 2.5 | | | |
| Shimla | Theog | 20 | 11 | 37.5 | | | 1 | 0.5 | 9 | 26.1 | 1 | 2.0 | 20 | 32.4 | | 2 | 1.3 | | | |
| Total of Territorial | | 341 | 138 | 41.3 | 1 | 900 | 8 | 5.6 | 199 | 41.6 | 14 | 7.4 | 337 | 41.5 | 2 | 22 | 6.7 | | | |
| Kangra | Bajmath | 3 | | | | | | | 2 | 19.2 | | | 2 | 19.2 | | | | | | |
| Kullu | Kullu | 11 | | | | | | | 11 | 48.9 | 1 | 6.0 | 11 | 48.9 | | 1 | 6.0 | | | |
| Mandi | Mandi | 3 | | | | | | | 3 | 24.0 | 1 | 2 | 3 | 24.0 | 1 | 2 | | | | |
| Kangra | Palampur | 1 | | | | | | | 1 | 9.6 | | | 1 | 9.6 | | | | | | |
| Kullu | Parvati | 10 | | | | | | | 10 | 49.9 | | | 10 | 49.9 | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | 21 | 34.3 | | | 21 | 34.3 | | | | | | |
| Shimla | Theog | 1 | | | | | | | 1 | 192.0 | | | 1 | 192.0 | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | 5 | 122.9 | | | 5 | 122.9 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | 2 | 7.2 | | | 2 | 7.2 | | | | | | |
| Solan | Baddi | 2 | | | | | | | 2 | 30.6 | | | 2 | 30.6 | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | 58 | 49.7 | 1 | 3 | 58 | 49.7 | 1 | 3 | 6.0 | | | |
| Grand Total | | 400 | 138 | 41.3 | 1 | 900 | 8 | 5.6 | 257 | 43.2 | 2 | 17 | 395 | 42.5 | 3 | 25 | 6.7 | | | |

Source: Livelihood Survey, JICA Study Team (2017)

** Quintal=100kg

9.4 Fuel Consumption at Household during Winter

Source of Fuelwood (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | |
|-------------------------------------|------------|-------------------------------|-----------|-----------------|------------------------|-------------------|------------|-------------------------|------------|-----------|-----------------|------------------------|-------------------|------------|-------------------------|-----------|-----------|-----------------|------------------------|-------------------|------------|-------------------------|-------|
| | | | Purchase | From Own Forest | From Government Forest | Agriculture Field | Grass land | Forest Department Depot | Total | Purchase | From Own Forest | From Government Forest | Agriculture Field | Grass land | Forest Department Depot | Total | Purchase | From Own Forest | From Government Forest | Agriculture Field | Grass land | Forest Department Depot | Total |
| Bilaspur | Bilaspur | 60 | 6 | 3 | 19 | 31 | | | 59 | 1 | 1 | 16 | 16 | | | 34 | 7 | 4 | 35 | 47 | 0 | 0 | 93 |
| | Bharmour | 20 | | | 10 | 4 | | | 14 | | | 9 | 3 | | 12 | 0 | 0 | 19 | 7 | 0 | 0 | 26 | |
| | Chamba WL | 20 | | | | | | | 0 | 3 | | 20 | 3 | | 26 | 3 | 0 | 20 | 3 | 0 | 0 | 26 | |
| Chamba | Pangi | 20 | 1 | | 10 | 8 | | | 19 | | | 10 | 4 | | 14 | 1 | 0 | 20 | 12 | 0 | 0 | 33 | |
| | Kinnaur | 40 | 2 | | 17 | 12 | | | 31 | 3 | | 15 | 13 | | 32 | 5 | 0 | 32 | 25 | 0 | 1 | 63 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | 1 | | 16 | 12 | 1 | 30 | 1 | 0 | 16 | 12 | 1 | 0 | 30 | |
| | Kullu | 20 | 2 | | 9 | 4 | | | 15 | 3 | 1 | | 7 | 1 | 12 | 5 | 1 | 9 | 11 | 1 | 0 | 27 | |
| Kullu | Kullu WL | 20 | | | | | | | 0 | 4 | 1 | 14 | 10 | 1 | 31 | 4 | 1 | 14 | 10 | 1 | 1 | 31 | |
| Lahaul & Spiti | Spiti(WL) | 20 | | | | | | | 0 | 14 | | 1 | 1 | 5 | 21 | 14 | 0 | 1 | 1 | 0 | 5 | 21 | |
| | Karsog | 20 | 2 | 2 | 5 | 8 | | | 17 | 1 | | 10 | 6 | | 17 | 3 | 2 | 15 | 14 | 0 | 0 | 34 | |
| Mandi | Mandi | 20 | | 2 | 4 | 6 | | | 12 | | | 10 | 8 | | 18 | 0 | 2 | 14 | 14 | 0 | 0 | 30 | |
| | Kotgarh | 20 | | | 10 | 6 | 2 | | 18 | | 1 | 1 | 8 | 1 | 11 | 0 | 1 | 11 | 14 | 3 | 0 | 29 | |
| | Rampur | 21 | | 1 | 7 | 7 | | | 15 | | 1 | 11 | 5 | | 17 | 0 | 2 | 18 | 12 | 0 | 0 | 32 | |
| Shimla | Theog | 20 | | 2 | 5 | 6 | 2 | | 15 | 1 | | 4 | 6 | 2 | 13 | 1 | 2 | 9 | 12 | 4 | 0 | 28 | |
| Total of Territorial | | 341 | 13 | 10 | 96 | 92 | 4 | 0 | 215 | 31 | 5 | 137 | 102 | 6 | 288 | 44 | 15 | 233 | 194 | 10 | 7 | 503 | |
| Kangra | Bajmath | 3 | | | | | | | | | 1 | 1 | 1 | | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 3 | |
| Kullu | Kullu | 11 | | | | | | | | 1 | 4 | 2 | 3 | | 10 | 1 | 4 | 2 | 3 | 0 | 0 | 10 | |
| Mandi | Mandi | 3 | | | | | | | | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Kangra | Palampur | 1 | | | | | | | | | | 1 | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | |
| Kullu | Parvati | 10 | | | | | | | | 6 | 4 | | | | 10 | 0 | 6 | 4 | 0 | 0 | 0 | 10 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | 1 | 20 | 2 | | | 23 | 0 | 1 | 20 | 2 | 0 | 0 | 23 | |
| Shimla | Theog | 1 | | | | | | | | | | 1 | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | |
| Solan | Nalagarh | 5 | | | | | | | | 2 | 3 | | | | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 5 | |
| Shimla | Kotgarh | 2 | | | | | | | | 1 | | 1 | | | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | |
| Solan | Baddi | 2 | | | | | | | | | | 2 | | | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15 | 32 | 6 | 0 | 0 | 58 | 5 | 15 | 32 | 6 | 0 | 0 | 58 | |
| Grand Total | | 400 | 13 | 10 | 96 | 92 | 4 | 0 | 215 | 36 | 20 | 169 | 108 | 6 | 346 | 49 | 30 | 265 | 200 | 10 | 7 | 561 | |

Source: Livelihood Survey, JICA Study Team (2017)

9.4 Fuel Consumption at Household during Winter
Source of Fuelwood (2)

| District | Division | No of Respondents Interviewed | % to Total | | | | | | |
|-------------------------------------|------------|-------------------------------|------------|-----------------|------------------------|-------------------|------------|-------------------------|--------------|
| | | | Purchase | From Own Forest | From Government Forest | Agriculture Field | Grass land | Forest Department Depot | Total |
| Bilaspur | Bilaspur | 60 | 7.5 | 4.3 | 37.6 | 50.5 | 0.0 | 0.0 | 100.0 |
| Chamba | Bharmour | 20 | 0.0 | 0.0 | 73.1 | 26.9 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | 11.5 | 0.0 | 76.9 | 11.5 | 0.0 | 0.0 | 100.0 |
| | Pangi | 20 | 3.0 | 0.0 | 60.6 | 36.4 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 7.9 | 0.0 | 50.8 | 39.7 | 0.0 | 1.6 | 100.0 |
| | Sarahan WL | 20 | 3.3 | 0.0 | 53.3 | 40.0 | 3.3 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | 18.5 | 3.7 | 33.3 | 40.7 | 3.7 | 0.0 | 100.0 |
| | Kullu WL | 20 | 12.9 | 3.2 | 45.2 | 32.3 | 3.2 | 3.2 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 66.7 | 0.0 | 4.8 | 4.8 | 0.0 | 23.8 | 100.0 |
| Mandi | Karsog | 20 | 8.8 | 5.9 | 44.1 | 41.2 | 0.0 | 0.0 | 100.0 |
| | Mandi | 20 | 0.0 | 6.7 | 46.7 | 46.7 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 20 | 0.0 | 3.4 | 37.9 | 48.3 | 10.3 | 0.0 | 100.0 |
| | Rampur | 21 | 0.0 | 6.3 | 56.3 | 37.5 | 0.0 | 0.0 | 100.0 |
| | Theog | 20 | 3.6 | 7.1 | 32.1 | 42.9 | 14.3 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 8.7 | 3.0 | 46.3 | 38.6 | 2.0 | 1.4 | 100.0 |
| Kangra | Bajjnath | 3 | 0.0 | 33.3 | 33.3 | 33.3 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | 10.0 | 40.0 | 20.0 | 30.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | 0.0 | 60.0 | 40.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 0.0 | 4.3 | 87.0 | 8.7 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 5 | 40.0 | 60.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Baddi | 2 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 8.6 | 25.9 | 55.2 | 10.3 | 0.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 8.7 | 5.3 | 47.2 | 35.7 | 1.8 | 1.2 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

10. Income & Expenditure (April 2016 - March 2017)

10.1 Sources of Income (1)

| District | Division | No of Respondents Interviewed (a) | Sale of Livestock | Poultry- Income earned | Fishery- Income earned | Salary- Income earned | Dairy- Income earned | Skill based jobs- Income earned | Handloom Income earned | Handicrafts- Income earned | Trading- Income earned | Count of JFM (RHH) | | | | | | | | Total |
|-------------------------------------|----------------|-----------------------------------|-------------------|------------------------|------------------------|-----------------------|----------------------|---------------------------------|------------------------|----------------------------|------------------------|----------------------------|-------------------------------|----------------------------|------------------------------|--------------|------------|-----------|-----------|------------|
| | | | | | | | | | | | | Remittances- Income earned | O- Agriculture- Income earned | O-Carpentry- Income earned | O-Bee Keeping- Income earned | O-Blacksmith | O-Orchards | O-Pension | Others | |
| Bilaspur | Bilaspur | 60 | 5 | | | 15 | 2 | 1 | | | 6 | | 5 | | | | | 6 | 5 | 45 |
| | Bilaspur | 20 | 1 | | | 6 | 3 | | | | 2 | | 2 | | | | | 1 | 4 | 22 |
| | Chamba WL | 20 | | | | 3 | 2 | | | | 3 | | 2 | | | | | | 3 | 13 |
| Chamba | Pangi | 20 | | | | | | | | | | 1 | 2 | | | | | | 1 | 5 |
| | Kinnaur | 40 | 2 | | | 6 | 1 | 1 | | | 2 | | 4 | | | | | 8 | 4 | 29 |
| | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | 0 |
| | Kulu | 20 | 3 | | | 1 | 1 | | | | 1 | | 4 | | | | | 9 | 1 | 24 |
| Kulu | Kulu WL | 20 | | | | | | | | | | | | | | | | | | 0 |
| | Lahaul & Spiti | 20 | | | | | | | | | | | | | | | | | | 0 |
| | Kareeg | 20 | | | | 5 | 2 | | | | 2 | | 5 | | | | | | 1 | 16 |
| Mandi | Mandi | 20 | 2 | | | 2 | 5 | | | | 1 | | 8 | | | | | | 2 | 20 |
| | Kotgarh | 20 | 1 | | | 2 | | | | | 1 | | 2 | | | | | 3 | 2 | 13 |
| | Rampur | 21 | | | | 2 | | | | | 1 | | 3 | | | | | | 1 | 11 |
| | Theog | 20 | | | | 4 | | 1 | | | 1 | | 5 | | | | | | 2 | 13 |
| Total of Territorial | | 341 | 14 | 1 | 0 | 46 | 16 | 4 | 0 | 1 | 20 | 1 | 42 | 1 | 0 | 0 | 21 | 22 | 22 | 211 |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | | 0 |
| | Kulu | 11 | | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | 0 |
| Kulu | Parvati | 10 | | | | | | | | | | | | | | | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | 0 |
| Total of graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 14 | 1 | 0 | 46 | 16 | 4 | 0 | 1 | 20 | 1 | 42 | 1 | 0 | 0 | 21 | 22 | 22 | 211 |

Source: Livelihood Survey, JICA Study Team (2017)

10.1 Sources of Income (2)

| District | Division | No of Respondents Interviewed (a) | Sale of Livestock | Poultry- Income earned | Fishery- Income earned | Salary- Income earned | Dairy- Income earned | Skill based jobs- Income earned | Handloom Income earned | Handicrafts- Income earned | Trading- Income earned | Count of JFM (RHH) | | | | | | | | Total | |
|-------------------------------------|----------------|-----------------------------------|-------------------|------------------------|------------------------|-----------------------|----------------------|---------------------------------|------------------------|----------------------------|------------------------|----------------------------|-------------------------------|----------------------------|------------------------------|--------------|------------|-----------|-----------|----------|-----------|
| | | | | | | | | | | | | Remittances- Income earned | O- Agriculture- Income earned | O-Carpentry- Income earned | O-Bee Keeping- Income earned | O-Blacksmith | O-Orchards | O-Pension | Others | | |
| Bilaspur | Bilaspur | 60 | 2 | | | 4 | | 1 | | | 1 | | | | | | | | 3 | 1 | 12 |
| | Bilaspur | 20 | | | | | | | | | | | | | | | | | | | 0 |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | 0 |
| Chamba | Pangi | 20 | | | | | | | | | | | 1 | | | | | | | 3 | 4 |
| | Kinnaur | 40 | | | | | | | | | | | 1 | | | | | 1 | 1 | 3 | 5 |
| | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | 0 |
| | Kulu | 20 | | | | | | | | | | | | | | | | | | | 0 |
| Kulu | Kulu WL | 20 | | | | | | | | | | | | | | | | | | | 0 |
| | Lahaul & Spiti | 20 | | | | | | | | | | | | | | | | | | | 0 |
| | Kareeg | 20 | | | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | 0 |
| | Kotgarh | 20 | | | | | 1 | | | | | | 1 | | | | | | | | 2 |
| | Rampur | 21 | | | | | 2 | | | | | 1 | 2 | | | | | 1 | 2 | | 8 |
| | Theog | 20 | | | | | 2 | | | | | 2 | 1 | | | | | | 2 | | 8 |
| Total of Territorial | | 341 | 2 | 0 | 0 | 9 | 0 | 1 | 0 | 0 | 4 | 2 | 6 | 1 | 0 | 0 | 0 | 2 | 11 | 1 | 37 |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | | | 0 |
| | Kulu | 11 | | | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | 0 |
| Kulu | Parvati | 10 | | | | | | | | | | | | | | | | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | 0 |
| Total of graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 2 | 0 | 0 | 9 | 0 | 1 | 0 | 0 | 4 | 2 | 6 | 1 | 0 | 0 | 0 | 2 | 11 | 1 | 37 |

Source: Livelihood Survey, JICA Study Team (2017)

10.1 Sources of Income (3)

| District | Division | No of Respondents Interviewed (a) | Sale of Livestock | Poultry- Income earned | Fishery- Income earned | Salary- Income earned | Dairy- Income earned | Skill based jobs- Income earned | Handloom Income earned | Handicrafts- Income earned | Trading- Income earned | Total Count of JFM | | | | | | | | Total | |
|-------------------------------------|----------------|-----------------------------------|-------------------|------------------------|------------------------|-----------------------|----------------------|---------------------------------|------------------------|----------------------------|------------------------|----------------------------|-------------------------------|----------------------------|------------------------------|--------------|------------|-----------|-----------|------------|----------|
| | | | | | | | | | | | | Remittances- Income earned | O- Agriculture- Income earned | O-Carpentry- Income earned | O-Bee Keeping- Income earned | O-Blacksmith | O-Orchards | O-Pension | Others | | |
| Bilaspur | Bilaspur | 60 | 7 | 0 | 0 | 19 | 2 | 2 | 0 | 0 | 7 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 9 | 6 | 57 |
| | Bilaspur | 20 | 1 | 0 | 0 | 6 | 3 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 4 | 3 | 22 |
| | Chamba WL | 20 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13 |
| Chamba | Pangi | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 9 |
| | Kinnaur | 40 | 2 | 0 | 0 | 6 | 1 | 1 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 9 | 5 | 1 | 32 |
| | Sarahan WL | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kulu | 20 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 9 | 1 | 4 | 24 | |
| Kulu | Kulu WL | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Lahaul & Spiti | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kareeg | 20 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 16 |
| Mandi | Mandi | 20 | 2 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 20 |
| | Kotgarh | 20 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 3 | 2 | 1 | 15 |
| | Rampur | 21 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 2 | 0 | 5 | 0 | 0 | 0 | 1 | 3 | 1 | 1 | 19 |
| | Theog | 20 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 3 | 0 | 6 | 1 | 0 | 0 | 0 | 4 | 0 | 2 | 21 |
| Total of Territorial | | 341 | 16 | 1 | 0 | 55 | 16 | 5 | 0 | 1 | 24 | 1 | 48 | 2 | 0 | 0 | 23 | 33 | 23 | 248 | |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | | | 0 |
| | Kulu | 11 | | | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | 0 |
| Kulu | Parvati | 10 | | | | | | | | | | | | | | | | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | 0 |
| Total of graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 16 | 1 | 0 | 55 | 16 | 5 | 0 | 1 | 24 | 1 | 48 | 2 | 0 | 0 | 23 | 33 | 23 | 248 | |

Source: Livelihood Survey, JICA Study Team (2017)

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

10.1 Sources of Income (4)

| District | Division | No of Respondents Interviewed (a) | Count of Non JFM (FHM) | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-----------------------------------|------------------------|-----------------------|-----------------------|----------------------|---------------------|--------------------------------|------------------------|---------------------------|-----------------------|---------------------------|-----------------------------|---------------------------|-----------------------------|--------------|------------|-----------|------------|------------|
| | | | Sale of Livestock | Poultry-Income earned | Fishery-Income earned | Salary-Income earned | Dairy-Income earned | Skill based jobs-Income earned | Handloom-Income earned | Handicrafts-Income earned | Trading-Income earned | Remittances-Income earned | O-Agriculture-Income earned | O-Carpentry-Income earned | O-Bee Keeping-Income earned | O-Blacksmith | O-Orchards | O-Pension | Others | Total |
| Bilaspur | Bilaspur | 60 | 4 | 1 | | 11 | 1 | | | | | 1 | | | | | | 2 | 8 | |
| | Bharmour | 20 | | | | 4 | 2 | | | | | | | | | | | | 15 | |
| | Chamba WL | 20 | 2 | | | 5 | 4 | | | | 3 | | | | | | | 4 | 21 | |
| Chamba | Pangi | 20 | | | | 2 | | | | | | | | | | | 2 | 1 | 3 | |
| | Kinnaur | 40 | 5 | | | 12 | 3 | | | 1 | | | | | | 7 | 1 | 2 | 38 | |
| | Sarahan WL | 20 | 2 | | | 11 | 2 | | | | 2 | 4 | | | | 6 | 6 | 3 | 40 | |
| | Kullu | 20 | 1 | | | 1 | 2 | | | | | | | | | 3 | 4 | 3 | 14 | |
| | Kullu WL | 20 | | | | 8 | 4 | | | 2 | 1 | 5 | | | 1 | 5 | | 3 | 32 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 1 | | | 12 | 2 | 1 | | | | | | | 10 | | 4 | 3 | 2 | 38 |
| | Karsog | 20 | | | | 3 | 1 | | | | | 2 | | | | 6 | | 2 | 1 | 16 |
| Mandi | Mandi | 20 | 1 | | | 2 | 3 | | | 1 | 1 | | 1 | | | 4 | 2 | 1 | 15 | |
| | Kotgarh | 20 | | | | 5 | 1 | | | | | | | | | 4 | 3 | 1 | 17 | |
| | Rampur | 21 | 1 | | | 3 | | | | | 1 | | | | | 1 | | 2 | 8 | |
| | Theog | 20 | | | | 3 | | | | | | | | | | 3 | 2 | | 11 | |
| Total of Territorial | | 341 | 19 | 1 | 0 | 82 | 22 | 1 | 4 | 5 | 20 | 1 | 55 | 0 | 1 | 39 | 22 | 31 | 272 | |
| Kangra | Bjainath | 3 | | | | | | | | | | | | | | | | | 5 | |
| Kullu | Kullu | 11 | | | | | 6 | | | 1 | | | | | | | | | 10 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | 3 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | 1 | |
| Kullu | Parvati | 10 | | | | | | | | | 1 | | | | | | | | 2 | |
| Kinnaur | Kinnaur | 21 | 4 | | | 2 | 8 | | | 6 | 1 | | 1 | 6 | | | 2 | 1 | 31 | |
| Shirala | Theog | 1 | | | | | | | | | | | | | | | | | 1 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | 8 | |
| Shirala | Kotgarh | 2 | | | | | | | | | | | | | | | | | 2 | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | 3 | |
| Total of Graziers/ Grassland | | 59 | 21 | 0 | 0 | 2 | 26 | 0 | 7 | 1 | 1 | 1 | 6 | 1 | 1 | 1 | 2 | 0 | 1 | 71 |
| Grand Total | | 400 | 40 | 1 | 0 | 84 | 48 | 1 | 11 | 6 | 21 | 2 | 61 | 1 | 1 | 2 | 41 | 22 | 32 | 343 |

Source: Livelihood Survey, JICA Study Team (2017)

10.1 Sources of Income (5)

| District | Division | No of Respondents Interviewed (a) | Count of Non JFM (FHM) | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-----------------------------------|------------------------|-----------------------|-----------------------|----------------------|---------------------|--------------------------------|------------------------|---------------------------|-----------------------|---------------------------|-----------------------------|---------------------------|-----------------------------|--------------|------------|-----------|-----------|
| | | | Sale of Livestock | Poultry-Income earned | Fishery-Income earned | Salary-Income earned | Dairy-Income earned | Skill based jobs-Income earned | Handloom-Income earned | Handicrafts-Income earned | Trading-Income earned | Remittances-Income earned | O-Agriculture-Income earned | O-Carpentry-Income earned | O-Bee Keeping-Income earned | O-Blacksmith | O-Orchards | O-Pension | Others |
| Bilaspur | Bilaspur | 60 | | | | 2 | | | | | | | | | | | | | 2 |
| | Bharmour | 20 | | | | 1 | | | | | | | | | | | | | 1 |
| | Chamba WL | 20 | | | | | | 1 | 1 | | | 1 | | | | | 1 | 4 | 13 |
| Chamba | Pangi | 20 | | | | 1 | | | 1 | | | | | | | | 2 | 4 | 4 |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | 1 |
| | Sarahan WL | 20 | | | | | | | | | | | | | | | | | 0 |
| | Kullu | 20 | | | | | | | | | | | | | | 2 | 2 | 6 | |
| | Kullu WL | 20 | | | | 1 | | | 1 | | 1 | | | | | 2 | 1 | 7 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 1 | | | 1 | | | | | | | | | | 1 | | 5 | |
| | Karsog | 20 | | | | | | | | | | | | | | | | 0 | |
| Mandi | Mandi | 20 | 1 | | | 1 | | | | | 1 | | 1 | | | | 1 | 6 | |
| | Kotgarh | 20 | | | | 1 | 1 | | | | | | | | | 1 | 1 | 5 | |
| | Rampur | 21 | | | | 2 | | | | | | | | | | | | 3 | |
| | Theog | 20 | | | | 2 | | | | | 1 | | | | | | 2 | 1 | 9 |
| Total of Territorial | | 341 | 4 | 0 | 1 | 16 | 1 | 2 | 0 | 0 | 4 | 0 | 7 | 0 | 0 | 6 | 11 | 4 | 62 |
| Kangra | Bjainath | 3 | | | | | | | | | | | | | | | | | 0 |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | 0 |
| Kullu | Parvati | 10 | | | | | | | | | 1 | | | | | | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | 1 | | | | | | | | | | | 2 |
| Shirala | Theog | 1 | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | 0 |
| Shirala | Kotgarh | 2 | | | | | | | | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Grand Total | | 400 | 4 | 0 | 1 | 16 | 2 | 2 | 0 | 0 | 5 | 0 | 7 | 0 | 0 | 6 | 11 | 4 | 64 |

Source: Livelihood Survey, JICA Study Team (2017)

10.1 Sources of Income (6)

| District | Division | No of Respondents Interviewed (a) | Total Count of Non JFM | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------|-----------------------------------|------------------------|-----------------------|-----------------------|----------------------|---------------------|--------------------------------|------------------------|---------------------------|-----------------------|---------------------------|-----------------------------|---------------------------|-----------------------------|--------------|------------|-----------|------------|------------|
| | | | Sale of Livestock | Poultry-Income earned | Fishery-Income earned | Salary-Income earned | Dairy-Income earned | Skill based jobs-Income earned | Handloom-Income earned | Handicrafts-Income earned | Trading-Income earned | Remittances-Income earned | O-Agriculture-Income earned | O-Carpentry-Income earned | O-Bee Keeping-Income earned | O-Blacksmith | O-Orchards | O-Pension | Others | Total |
| Bilaspur | Bilaspur | 60 | 4 | 1 | 0 | 13 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 2 | 8 | 33 | |
| | Bharmour | 20 | 2 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 1 | 16 | |
| | Chamba WL | 20 | 2 | 0 | 0 | 5 | 5 | 1 | 0 | 0 | 4 | 0 | 6 | 0 | 0 | 1 | 4 | 6 | 34 | |
| Chamba | Pangi | 20 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 1 | 11 | | |
| | Kinnaur | 40 | 5 | 0 | 0 | 12 | 2 | 0 | 1 | 1 | 0 | 0 | 7 | 0 | 0 | 8 | 1 | 39 | | |
| | Sarahan WL | 20 | 2 | 0 | 0 | 11 | 0 | 0 | 0 | 2 | 4 | 0 | 6 | 0 | 0 | 6 | 6 | 40 | | |
| | Kullu | 20 | 1 | 0 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 6 | 2 | 20 | | |
| | Kullu WL | 20 | 0 | 0 | 0 | 9 | 4 | 0 | 3 | 1 | 6 | 0 | 4 | 0 | 0 | 7 | 1 | 39 | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 2 | 0 | 0 | 13 | 2 | 1 | 0 | 0 | 3 | 0 | 12 | 0 | 0 | 5 | 3 | 43 | | |
| | Karsog | 20 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 2 | 1 | 16 | | |
| Mandi | Mandi | 20 | 2 | 0 | 1 | 2 | 3 | 0 | 1 | 1 | 1 | 1 | 5 | 0 | 0 | 3 | 1 | 21 | | |
| | Kotgarh | 20 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 5 | 4 | 22 | | |
| | Rampur | 21 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 11 | | |
| | Theog | 20 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 3 | 4 | 20 | | |
| Total of Territorial | | 341 | 21 | 1 | 1 | 94 | 24 | 3 | 5 | 5 | 25 | 11 | 66 | 0 | 1 | 47 | 35 | 36 | 365 | |
| Kangra | Bjainath | 3 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| Kullu | Kullu | 11 | | | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | | |
| Mandi | Mandi | 3 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | |
| Kangra | Palampur | 1 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| Kullu | Parvati | 10 | | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 7 | | |
| Kinnaur | Kinnaur | 21 | 4 | | 0 | 2 | 9 | 0 | 6 | 1 | 1 | 1 | 6 | 0 | 0 | 2 | 0 | 33 | | |
| Shirala | Theog | 1 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| Solan | Nalagarh | 5 | | | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | | |
| Shirala | Kotgarh | 2 | | | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | |
| Solan | Baddi | 2 | | | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | |
| Total of Graziers/ Grassland | | 59 | 21 | 0 | 0 | 2 | 27 | 0 | 7 | 1 | 2 | 1 | 6 | 1 | 1 | 2 | 0 | 1 | 73 | |
| Grand Total | | 400 | 42 | 1 | 1 | 96 | 51 | 3 | 12 | 6 | 27 | 2 | 72 | 1 | 1 | 2 | 49 | 35 | 37 | 438 |

Source: Livelihood Survey, JICA Study Team (2017)

10.3 Average of Total Household/ Per Capita Income

Unit: INR

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Total | | | Per capita Income | | |
|----------------|-------------------------------------|-----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------|---------------|---------------|
| | | | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total |
| Bilaspur | Bilaspur | 60 | 245,432 | 123,936 | 221,133 | 204,285 | 228,000 | 206,782 | 229,888 | 147,061 | 216,083 | 37,079 | 27,011 | 35,575 |
| | Bharmour | 20 | 156,159 | | 156,159 | 276,914 | 216,000 | 269,300 | 203,119 | 216,000 | 203,797 | 35,497 | 108,000 | 36,878 |
| | Chamba WL | 20 | | | | 200,786 | 192,640 | 198,642 | 200,786 | 192,640 | 198,642 | 39,042 | 38,528 | 38,909 |
| Chamba | Pangi | 20 | 28,950 | 10,500 | 19,725 | 143,340 | 33,800 | 102,263 | 100,444 | 22,150 | 66,889 | 12,175 | 3,592 | 9,092 |
| | Kinnaur | 40 | 415,887 | 44,400 | 372,182 | 424,304 | 600,000 | 434,064 | 420,358 | 229,600 | 404,007 | 67,937 | 57,400 | 67,335 |
| | Sarahan WL | 20 | | | | 235,287 | | 235,287 | 235,287 | | 235,287 | 39,214 | 0 | 38,209 |
| | Kullu | 20 | 121,592 | | 121,592 | 168,993 | 121,400 | 154,715 | 141,110 | 121,400 | 138,154 | 30,755 | 30,350 | 30,701 |
| | Kullu WL | 20 | | | | 148,909 | 92,667 | 140,029 | 148,909 | 92,667 | 140,029 | 29,414 | 17,375 | 27,428 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 353,094 | 270,667 | 340,730 | 353,094 | 270,667 | 340,730 | 57,168 | 58,000 | 57,266 |
| | Karsog | 20 | 126,439 | | 126,439 | 128,363 | | 127,458 | | 127,458 | 22,110 | - | | 22,110 |
| | Mandi | 20 | 101,430 | | 101,430 | 140,980 | 91,633 | 122,475 | 114,613 | 91,633 | 110,783 | 18,486 | 13,745 | 17,647 |
| | Kotgarh | 20 | 47,494 | 34,250 | 44,845 | 289,584 | 218,050 | 275,277 | 168,539 | 126,150 | 160,061 | 39,081 | 31,538 | 37,661 |
| | Rampur | 21 | 174,656 | 318,267 | 236,204 | 161,580 | 32,700 | 113,250 | 167,392 | 175,483 | 170,628 | 20,637 | 38,996 | 25,594 |
| | Theog | 20 | 463,113 | 228,800 | 377,908 | 256,300 | 46,550 | 163,078 | 376,941 | 137,675 | 281,235 | 66,519 | 25,032 | 50,220 |
| | Total of Territorial | 341 | 216,126 | 139,350 | 203,228 | 241,436 | 145,033 | 224,147 | 231,114 | 142,823 | 215,684 | 39,368 | 27,843 | 37,568 |
| Kangra | Bajinath | 3 | | | | 58,333 | | 58,333 | 58,333 | | 58,333 | 9,722 | | 9,722 |
| | Kullu | 11 | | | | 31,925 | | 31,925 | 31,925 | | 31,925 | 4,119 | | 4,119 |
| | Mandi | 3 | | | | 10,000 | | 10,000 | 10,000 | | 10,000 | 2,143 | | 2,143 |
| | Kangra | 1 | | | | 50,000 | | 50,000 | 50,000 | | 50,000 | 16,667 | | 16,667 |
| | Kullu | 10 | | | | 61,875 | | 61,875 | 61,875 | | 61,875 | 4,484 | | 4,484 |
| | Kinnaur | 21 | | | | 141,925 | 7,500 | 135,204 | 141,925 | 7,500 | 135,204 | 22,471 | 1,875 | 21,807 |
| | Shimla | 1 | | | | 288,000 | | 288,000 | 288,000 | | 288,000 | 57,600 | | 57,600 |
| | Solan | 5 | | | | 371,400 | | 371,400 | 371,400 | | 371,400 | 44,214 | | 44,214 |
| | Shimla | 2 | | | | 240,000 | | 240,000 | 240,000 | | 240,000 | 60,000 | | 60,000 |
| | Solan | 2 | | | | 243,000 | | 243,000 | 243,000 | | 243,000 | 44,182 | | 44,182 |
| | Total of Graziers/ Grassland | 59 | | | | 135,252 | 7,500 | 132,697 | 135,252 | 7,500 | 132,697 | 18,828 | 1,875 | 18,637 |
| | Grand Total | 400 | 216,126 | 139,350 | 203,228 | 215,421 | 140,988 | 204,606 | 215,662 | 140,363 | 204,126 | 35,458 | 27,473 | 34,404 |

Source: Livelihood Survey, JICA Study Team (2017) * Trimmed Mean@ 0.05

Household Income by Economic Status

Unit: INR

| District | Division | No of Respondents Interviewed (a) | Economic Status | | |
|----------------|-------------------------------|-----------------------------------|-----------------|----------------|----------------|
| | | | APL | BPL | Atyodaya |
| Bilaspur | Bilaspur | 60 | 307,052 | 91,606 | 47,250 |
| | Bharmour | 20 | 259,950 | 104,167 | 127,750 |
| | Chamba W | 20 | 282,000 | 84,025 | |
| Chamba | Pangi | 20 | 100,613 | 29,833 | |
| | Kinnaur | 40 | 527,671 | 93,121 | 110,400 |
| | Sarahan W | 20 | 261,723 | 136,938 | 347,625 |
| | Kullu | 30 | 168,588 | 92,503 | |
| | Kullu WL | 10 | 145,597 | 84,000 | 185,000 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 460,633 | 114,600 | 238,000 |
| | Karsog | 20 | 138,075 | 35,933 | |
| | Mandi | 20 | 93,288 | 142,319 | 54,625 |
| | Kotgarh | 20 | 184,227 | 36,140 | 312,785 |
| | Rampur | 21 | 271,682 | 99,092 | 31,550 |
| | Theog | 20 | 386,183 | 128,497 | 77,000 |
| | Total of Territorial | 341 | 286,447 | 90,372 | 145,253 |
| Kangra | Bajinath | 3 | 58,333 | | |
| | Kullu | 11 | 35,880 | 23,000 | |
| | Mandi | 3 | | 10,000 | |
| | Kangra | 1 | 50,000 | | |
| | Kullu | 10 | 73,500 | 27,375 | |
| | Kinnaur | 21 | 104,150 | 19,175 | |
| | Shimla | 1 | | 288,000 | |
| | Solan | 5 | 348,000 | 455,000 | |
| | Shimla | 2 | | 180,000 | |
| | Solan | 2 | 336,000 | 150,000 | |
| | Total of Graziers/ Gra | 59 | 98,761 | 111,989 | |
| | Grand Total | 400 | 266,691 | 94,198 | 145,253 |

Source: Livelihood Survey, JICA Study Team (2017)

10.4 Itemised Average Expenditure (1)

Unit: INR

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | | | | | | | | | | Non JFM | | | | | | | | | | |
|------------------------------|------------|-----------------------------------|--------|------------------------------|---------|------------------------|-------------|----------|-------------|-----------------------|------------------------------|----------------------|----------|----------------------|--------|------------------------------|---------|------------------------|-------------|----------|-------------|-----------------------|------------------------------|----------------------|----------|----------------------|--------|-------|
| | | | Food | Medicine/Health/Medical care | Clothes | Fodder/Livestock Feeds | Farm Inputs | Fuelwood | Gas connect | Education of Children | Cultural activities/festival | Maintenance of house | Marriage | Others (Unspecified) | Food | Medicine/Health/Medical care | Clothes | Fodder/Livestock Feeds | Farm Inputs | Fuelwood | Gas connect | Education of Children | Cultural activities/festival | Maintenance of house | Marriage | Others (Unspecified) | | |
| Bilaspur | Bilaspur | 60 | 51,900 | 25,108 | 8,866 | 21,141 | 4,113 | 2,300 | 2,539 | 15,018 | 5,454 | 7,067 | 11,250 | 14,000 | 2,400 | 50,460 | 30,294 | 9,510 | 15,105 | 96,463 | 181,578 | 42,000 | 3,122 | 40,167 | 4,465 | 18,733 | 24,000 | 4,967 |
| Bilaspur | Bharmour | 20 | 36,545 | 27,420 | 8,091 | 6,800 | 1,800 | 1,150 | 4,250 | 7,100 | 7,067 | 11,250 | 14,000 | 2,400 | | 42,667 | 5,167 | 6,956 | 8,180 | 14,000 | 135 | 2,560 | 73,125 | 4,850 | 4,667 | 154,000 | 2,749 | |
| Bilaspur | Chamba WL | 20 | | | | | | | | | | | | | 46,200 | 3,918 | 8,000 | 6,878 | 4,420 | 400 | 3,324 | 21,556 | 7,979 | 8,286 | 153,000 | 7,333 | | |
| Chamba | Pangi | 20 | 18,260 | 1,540 | 9,060 | 12,400 | 3,883 | 1,320 | 2,786 | 5,929 | 1,888 | 200,000 | | | | 22,540 | 31,889 | 8,200 | 6,186 | 1,483 | 300 | 3,892 | 15,625 | 2,800 | 16,000 | | 3,303 | |
| Chamba | Kinnaur | 40 | 54,000 | 15,967 | 10,053 | 14,825 | 106,913 | 1,000 | 4,567 | 41,718 | 3,382 | 4,540 | 67,700 | 14,492 | 44,190 | 8,300 | 8,490 | 12,453 | 42,969 | 10,000 | 3,695 | 54,846 | 55,190 | 11,800 | 6,000 | 1,180 | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | 43,140 | 19,706 | 8,020 | 10,600 | 13,089 | | 2,936 | 34,171 | 5,658 | 19,833 | 220,000 | 14,150 | | |
| Kinnaur | Kullu | 20 | 37,200 | 4,333 | 4,640 | 7,717 | 23,600 | | 2,900 | 7,625 | 6,120 | 4,500 | 5,500 | 1,080 | 31,200 | 10,238 | 7,900 | 9,750 | 15,075 | 3,000 | 4,300 | 31,714 | 7,280 | 8,000 | 6,000 | 3,450 | | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | 39,420 | 5,729 | 8,225 | 12,714 | 24,924 | 5,000 | 6,995 | 21,182 | 5,674 | 84,125 | 70,333 | 5,838 | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | 43,895 | 15,060 | 10,650 | 10,117 | 71,482 | 9,711 | 5,574 | 90,360 | 5,774 | 10,750 | 8,667 | 2,147 | | |
| Lahaul & Spiti | Karsog | 20 | 55,000 | 55,620 | 9,430 | 5,067 | 8,170 | 2,000 | 3,910 | 8,975 | 3,730 | 56,867 | 110,800 | | 32,400 | 30,700 | 4,560 | 9,933 | 6,456 | | 3,029 | 6,160 | 2,220 | 7,667 | 200,000 | 37,850 | | |
| Mandi | Mandi | 20 | 37,200 | 12,111 | 8,720 | 14,157 | 24,030 | | 2,540 | 7,472 | 5,860 | 42,880 | 121,920 | | 38,280 | 5,456 | 5,580 | 7,843 | 4,757 | | 2,900 | 8,640 | 23,300 | 8,400 | 240,133 | | | |
| Mandi | Kotgarh | 20 | 30,460 | 5,400 | 5,690 | 9,720 | 8,750 | | 3,629 | 19,400 | 2,122 | 55,100 | 4,500 | 26,200 | 49,200 | 23,740 | 7,300 | 24,000 | 19,596 | | 5,269 | 32,600 | 4,150 | 166,100 | 21,000 | 6,000 | | |
| Mandi | Rampur | 21 | 43,440 | 3,543 | 6,430 | 3,333 | 10,850 | | 2,557 | 20,043 | 2,230 | 43,667 | 3,500 | 88,600 | 20,364 | 2,291 | 2,164 | 2,500 | 15,667 | | 2,000 | 5,600 | 1,940 | 1,050 | 125,605 | 600 | | |
| Mandi | Theog | 20 | 65,636 | 13,364 | 10,182 | 13,840 | 29,585 | #DIV/0! | 5,693 | 42,771 | 6,573 | 137,833 | 8,000 | 18,000 | 42,000 | 27,743 | 8,667 | 14,667 | 16,125 | | 5,000 | 18,467 | 9,733 | 34,000 | 2,000 | 4,000 | | |
| Total of Territorial | | 341 | 45,685 | 19,421 | 8,407 | 14,076 | 24,296 | 1,714 | 3,503 | 19,387 | 4,659 | 68,348 | 93,512 | 20,125 | 40,546 | 15,069 | 7,831 | 11,323 | 23,129 | 7,123 | 4,197 | 37,805 | 11,682 | 30,591 | 105,554 | 6,860 | | |
| Kangra | Bijnath | 3 | | | | | | | | | | | | | 32,000 | 4,000 | 33,667 | 13,333 | 4,667 | | 6,500 | 14,400 | 7,667 | 7,667 | 12,667 | 5,000 | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | 47,455 | 12,200 | 22,100 | 17,089 | 49,909 | | 16,633 | 30,244 | 19,545 | 13,182 | 16,667 | 5,000 | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | 44,333 | 4,933 | 5,667 | 15,000 | 2,050 | | | 8,500 | 4,500 | 2,000 | 8,000 | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | 25,000 | 10,000 | 15,000 | 6,000 | | | | 3,600 | 150,000 | 7,000 | 5,000 | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | 54,600 | 20,700 | 16,400 | 9,767 | 7,633 | 72,000 | 3,563 | 19,013 | 15,900 | 9,000 | 30,950 | 5,500 | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | 60,095 | 8,467 | 18,971 | 7,423 | 32,309 | 8,450 | 3,819 | 46,435 | 12,383 | 20,920 | 46,667 | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | 60,000 | 36,000 | 14,400 | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | 84,000 | 31,920 | 24,540 | 583,200 | | | | 6,034 | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | 48,000 | 24,000 | 12,000 | 306,000 | | | | 2,400 | | | | | | |
| Solan | Buddi | 2 | | | | | | | | | | | | | 43,800 | 13,500 | 8,460 | 204,540 | | | | 6,000 | | 9,000 | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | | | 55,044 | 14,634 | 18,869 | 102,547 | 31,513 | 12,031 | 6,702 | 35,328 | 14,120 | 11,321 | 25,146 | 5,286 | | |
| Grand Total | | 400 | 45,685 | 19,421 | 8,407 | 14,076 | 24,296 | 1,714 | 3,503 | 19,387 | 4,659 | 68,348 | 93,512 | 20,125 | 43,861 | 14,965 | 10,312 | 36,365 | 24,542 | 8,403 | 4,698 | 37,193 | 12,065 | 24,295 | 74,922 | 6,705 | | |

Source: Livelihood Survey, JICA Study Team (2017)

10.4 Itemised Average Expenditure (2)

Unit: INR

| District | Division | No of Respondents Interviewed (a) | Total Average | | | | | | | | | | | | | | |
|------------------------------|------------|-----------------------------------|---------------|------------------------------|---------|------------------------|-------------|----------|-------------|-----------------------|------------------------------|----------------------|----------|----------------------|--|--|--|
| | | | Food | Medicine/Health/Medical care | Clothes | Fodder/Livestock Feeds | Farm Inputs | Fuelwood | Gas connect | Education of Children | Cultural activities/festival | Maintenance of house | Marriage | Others (Unspecified) | | | |
| Bilaspur | Bilaspur | 60 | 51,420 | 26,837 | 9,088 | 18,678 | 4,013 | 2,300 | 2,753 | 22,563 | 5,119 | 75,264 | 165,820 | 19,780 | | | |
| Bilaspur | Bharmour | 20 | 39,300 | 19,075 | 7,580 | 7,567 | 8,917 | 643 | 3,311 | 40,113 | 6,024 | 8,429 | 70,000 | 2,644 | | | |
| Bilaspur | Chamba WL | 20 | 46,200 | 3,918 | 8,000 | 6,878 | 4,420 | 400 | 3,324 | 21,556 | 7,979 | 8,286 | 153,000 | 7,333 | | | |
| Chamba | Pangi | 20 | 20,400 | 21,050 | 8,630 | 8,445 | 2,683 | 810 | 3,436 | 11,100 | 2,313 | 77,333 | 3,245 | | | | |
| Chamba | Kinnaur | 40 | 48,850 | 11,494 | 9,233 | 13,278 | 72,035 | 7,750 | 4,108 | 48,829 | 31,386 | 9,380 | 26,567 | 11,164 | | | |
| Kinnaur | Sarahan WL | 20 | 43,140 | 19,706 | 8,020 | 10,600 | 13,089 | | 2,936 | 34,171 | 5,658 | 19,833 | 220,000 | 14,150 | | | |
| Kinnaur | Kullu | 20 | 34,200 | 7,112 | 6,270 | 8,530 | 19,588 | 3,000 | 3,678 | 22,955 | 6,700 | 6,600 | 5,750 | 2,133 | | | |
| Kullu | Kullu WL | 20 | 39,420 | 5,729 | 8,225 | 12,714 | 24,924 | 5,000 | 6,995 | 21,182 | 5,674 | 84,125 | 70,333 | 5,838 | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 43,895 | 15,060 | 10,650 | 10,117 | 71,482 | 9,711 | 5,574 | 90,360 | 5,774 | 10,750 | 8,667 | 2,147 | | | |
| Lahaul & Spiti | Karsog | 20 | 43,700 | 43,816 | 6,995 | 7,013 | 7,358 | 2,000 | 3,547 | 7,411 | 2,975 | 40,467 | 144,250 | 37,850 | | | |
| Mandi | Mandi | 20 | 37,740 | 8,783 | 7,150 | 11,000 | 16,094 | | 2,700 | 8,056 | 14,580 | 29,950 | 166,250 | | | | |
| Mandi | Kotgarh | 20 | 39,830 | 15,053 | 6,495 | 15,075 | 15,257 | | 4,551 | 26,733 | 3,076 | 110,600 | 12,750 | 19,467 | | | |
| Mandi | Rampur | 21 | 31,352 | 2,778 | 4,195 | 3,125 | 12,164 | | 2,433 | 16,833 | 2,085 | 19,314 | 64,553 | 53,400 | | | |
| Mandi | Theog | 20 | 55,000 | 18,956 | 9,500 | 14,150 | 23,603 | | 5,381 | 29,100 | 7,995 | 90,636 | 6,000 | 9,200 | | | |
| Total of Territorial | | 341 | 42,677 | 16,891 | 8,067 | 12,517 | 23,634 | 5,893 | 3,926 | 30,456 | 8,773 | 46,953 | 100,035 | 11,282 | | | |
| Kangra | Bijnath | 3 | 32,000 | 4,000 | 33,667 | 13,333 | 4,667 | | 6,500 | 14,400 | 7,667 | 7,667 | 12,667 | 5,000 | | | |
| Kullu | Kullu | 11 | 47,455 | 12,200 | 22,100 | 17,089 | 49,909 | | 16,633 | 30,244 | 19,545 | 13,182 | 16,667 | 5,000 | | | |
| Mandi | Mandi | 3 | 44,333 | 4,933 | 5,667 | 15,000 | 2,050 | | | 8,500 | 4,500 | 2,000 | 8,000 | | | | |
| Kangra | Palampur | 1 | 25,000 | 10,000 | 15,000 | 6,000 | | | 3,600 | 150,000 | 7,000 | 5,000 | | | | | |
| Kullu | Parvati | 10 | 54,600 | 20,700 | 16,400 | 9,767 | 7,633 | 72,000 | 3,563 | 19,013 | 15,900 | 9,000 | 30,950 | 5,500 | | | |
| Kinnaur | Kinnaur | 21 | 60,095 | 8,467 | 18,971 | 7,423 | 32,309 | 8,450 | 3,819 | 46,435 | 12,383 | 20,920 | 46,667 | | | | |
| Shimla | Theog | 1 | 60,000 | 36,000 | 14,400 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | 84,000 | 31,920 | 24,540 | 583,200 | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | 48,000 | 24,000 | 12,000 | 306,000 | | | | | | | | | | | |
| Solan | Buddi | 2 | 43,800 | 13,500 | 8,460 | 204,540 | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 55,044 | 14,634 | 18,869 | 102,547 | 31,513 | 12,031 | 6,702 | 35,328 | 14,120 | 11,321 | 25,146 | 5,286 | | | |
| Grand Total | | 400 | 44,506 | 16,541 | 9,645 | 28,405 | 24,446 | 7,209 | 4,292 | 31,258 | 9,298 | 39,267 | 81,313 | 10,874 | | | |

Source: Livelihood Survey, JICA Study Team (2017)

10.5 Average Total Household/ Per Capita Expenditure

| District | Division | No of Respondents | JFM | | | Non JFM | | | Total | | | Per Capita Expenditure | | |
|-------------------------------------|------------|-------------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------------|---------------|---------------|
| | | | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total | MHH | FHH | Total |
| | | | Unit: INR | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 225,623 | 98,700 | 203,411 | 150,783 | 91,600 | 144,865 | 199,209 | 97,122 | 183,896 | 36,415 | 17,839 | 33,639 |
| | Bharmour | 20 | 91,536 | | 91,536 | 156,989 | 46,200 | 144,679 | 119,095 | 46,200 | 115,451 | 21,969 | 23,100 | 21,991 |
| | Chamba WL | 20 | | | | 167,647 | 94,160 | 149,275 | 167,647 | 94,160 | 149,275 | 34,926 | 18,832 | 30,778 |
| Chamba | Pangi | 20 | 79,943 | 43,785 | 65,480 | 93,706 | 77,733 | 88,914 | 87,354 | 58,334 | 77,197 | 17,206 | 11,036 | 14,990 |
| | Kinnaur | 40 | 237,544 | 26,450 | 215,324 | 188,833 | 541,250 | 205,615 | 211,214 | 198,050 | 210,227 | 39,469 | 49,513 | 40,043 |
| | Sarahan WL | 20 | | | | 170,578 | 8,300 | 162,464 | 170,578 | 8,300 | 162,464 | 28,430 | 2,767 | 27,772 |
| Kinnaur | Kullu | 30 | 85,640 | | 85,640 | 109,921 | 85,550 | 102,610 | 95,638 | 85,550 | 94,125 | 20,844 | 21,388 | 20,917 |
| Kullu | Kullu WL | 10 | | | | 154,805 | 128,833 | 150,909 | 154,805 | 128,833 | 150,909 | 32,490 | 24,156 | 31,115 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 228,581 | 161,900 | 218,579 | 228,581 | 161,900 | 218,579 | 37,008 | 34,693 | 36,736 |
| | Karsog | 20 | 233,730 | | 233,730 | 161,220 | | 161,220 | 197,475 | | 197,475 | 40,301 | - | 40,301 |
| Mandi | Mandi | 20 | 184,026 | | 184,026 | 170,743 | 138,033 | 160,930 | 178,556 | 138,033 | 172,478 | 32,639 | 20,705 | 30,527 |
| | Kotgarh | 20 | 98,575 | 63,250 | 91,510 | 203,173 | 190,700 | 200,678 | 150,874 | 126,975 | 146,094 | 34,985 | 31,744 | 34,375 |
| | Rampur | 21 | 81,700 | 210,900 | 120,460 | 67,939 | 23,400 | 55,792 | 74,361 | 117,150 | 86,586 | 15,280 | 26,033 | 18,183 |
| Shimla | Theog | 20 | 320,957 | 120,468 | 248,052 | 207,200 | 75,700 | 148,756 | 273,558 | 98,084 | 203,369 | 48,275 | 17,833 | 36,316 |
| Total of Territorial | | 341 | 181,609 | 98,182 | 168,592 | 165,407 | 111,185 | 156,189 | 172,172 | 106,077 | 161,318 | 32,778 | 21,445 | 31,009 |
| Kangra | Bajinath | 3 | | | | 128,633 | | 128,633 | 128,633 | | 128,633 | 21,439 | - | 21,439 |
| Kullu | Kullu | 11 | | | | 224,718 | | 224,718 | 224,718 | | 224,718 | 39,869 | - | 39,869 |
| Mandi | Mandi | 3 | | | | 78,800 | | 78,800 | 78,800 | | 78,800 | 16,886 | - | 16,886 |
| Kangra | Palampur | 1 | | | | 221,600 | | 221,600 | 221,600 | | 221,600 | 73,867 | - | 73,867 |
| Kullu | Parvati | 10 | | | | 183,160 | | 183,160 | 183,160 | | 183,160 | 26,545 | - | 26,545 |
| Kinnaur | Kinnaur | 21 | | | | 170,440 | 52,800 | 164,838 | 170,440 | 52,800 | 164,838 | 28,407 | 13,200 | 27,916 |
| Shimla | Theog | 1 | | | | 110,400 | | 110,400 | 110,400 | | 110,400 | 22,080 | - | 22,080 |
| Solan | Nalagarh | 5 | | | | 730,174 | | 730,174 | 730,174 | | 730,174 | 86,925 | - | 86,925 |
| Shimla | Kotgarh | 2 | | | | 391,200 | | 391,200 | 391,200 | | 391,200 | 97,800 | - | 97,800 |
| Solan | Baddi | 2 | | | | 282,300 | | 282,300 | 282,300 | | 282,300 | 51,327 | - | 51,327 |
| Total of Graziers/ Grassland | | 59 | | | | 235,594 | 52,800 | 232,496 | 235,594 | 52,800 | 232,496 | 38,820 | 13,200 | 38,532 |
| Grand Total | | 400 | 181,609 | 98,182 | 168,592 | 183,581 | 109,517 | 173,572 | 182,897 | 105,142 | 171,817 | 33,928 | 21,328 | 32,266 |

Source: Livelihood Survey, JICA Study Team (2017)

Household Expenditure by the Economic Status

| District | Division | No of Respondents | Economic Status | | |
|----------------------------------|------------|-------------------|-----------------|----------------|----------------|
| | | | APL | BPL | Atyodaya |
| | | | Unit: INR | | |
| Bilaspur | Bilaspur | 60 | 248,603 | 100,236 | 121,180 |
| | Bharmour | 20 | 125,309 | 102,329 | 89,000 |
| | Chamba WL | 20 | 165,364 | 138,088 | 61,800 |
| Chamba | Pangi | 20 | 105,748 | 58,217 | |
| | Kinnaur | 40 | 267,529 | 76,341 | 78,500 |
| | Sarahan WL | 20 | 213,827 | 102,340 | 71,690 |
| Kinnaur | Kullu | 30 | 104,104 | 79,156 | |
| Kullu | Kullu WL | 10 | 168,474 | 96,250 | 64,000 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 294,798 | 76,020 | 151,300 |
| | Karsog | 20 | 231,443 | 80,325 | |
| Mandi | Mandi | 20 | 101,706 | 184,523 | 436,750 |
| | Kotgarh | 20 | 194,222 | 43,680 | 89,300 |
| | Rampur | 21 | 136,344 | 50,256 | 46,303 |
| Shimla | Theog | 20 | 250,975 | 112,990 | 112,433 |
| Total of Territorial | | 341 | 204,568 | 92,702 | 126,033 |
| Kangra | Bajinath | 3 | 128,633 | | |
| Kullu | Kullu | 11 | 217,988 | 243,500 | |
| Mandi | Mandi | 3 | | 78,800 | |
| Kangra | Palampur | 1 | 221,600 | | |
| Kullu | Parvati | 10 | 121,033 | 132,700 | |
| Kinnaur | Kinnaur | 21 | 239,211 | 91,767 | |
| Shimla | Theog | 1 | | 110,400 | |
| Solan | Nalagarh | 5 | 412,008 | 852,900 | |
| Shimla | Kotgarh | 2 | | 446,400 | |
| Solan | Baddi | 2 | 405,600 | 159,000 | |
| Total of Graziers/ Grassl | | 59 | 218,654 | 231,327 | |
| Grand Total | | 400 | 206,210 | 115,633 | 126,033 |

Source: Livelihood Survey, JICA Study Team (2017)

11. Preferences of Tree Species

11.1 No of Households Planting Tree Species around Homestead and Agriculture Land including ridges

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | |
|-------------------------------------|------------|-------------------------------|---------------------|-----------------------|---|-----------------------|---------------------|-----------------------|---|-----------------------|---------------------|-----------------------|---|-----------------------|
| | | | Around Homestead | | Agriculture Land including ridges in the farm | | Around Homestead | | Agriculture Land including ridges in the farm | | Around Homestead | | Agriculture Land including ridges in the farm | |
| | | | Counts of Responses | Average No of Species | Counts of Responses | Average No of Species | Counts of Responses | Average No of Species | Counts of Responses | Average No of Species | Counts of Responses | Average No of Species | Counts of Responses | Average No of Species |
| Bilaspur | Bilaspur | 60 | 25 | 3 | 40 | 3 | 16 | 3 | 20 | 2 | 41 | 3 | 60 | 2 |
| | Bharmour | 20 | 8 | 4 | 11 | 1 | 5 | 3 | 9 | 1 | 13 | 3 | 20 | 1 |
| | Chamba WL | 20 | | | | | 12 | 2 | 20 | 1 | 12 | 2 | 20 | 1 |
| Chamba | Panga | 20 | 4 | 2 | 10 | 1 | 6 | 2 | 10 | 0 | 10 | 2 | 20 | 1 |
| | Kinnaur | 40 | 13 | 3 | 19 | 2 | 16 | 3 | 21 | 1 | 29 | 3 | 40 | 1 |
| Kinnaur | Sarahan WL | 20 | | | | | 17 | 3 | 20 | 2 | 17 | 3 | 20 | 2 |
| | Kullu | 20 | 5 | 3 | 10 | 2 | 7 | 2 | 10 | 3 | 12 | 3 | 20 | 2 |
| Kullu | Kullu WL | 20 | | | | | 14 | 2 | 20 | 1 | 14 | 2 | 20 | 1 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 2 | 2 | 20 | 1 | 7 | 2 | 20 | 1 |
| | Karsog | 20 | 10 | 4 | 10 | 3 | 9 | 4 | 10 | 4 | 19 | 4 | 20 | 3 |
| Mandi | Mandi | 20 | 8 | 4 | 9 | 2 | 9 | 3 | 11 | 2 | 17 | 4 | 20 | 2 |
| | Kotgarh | 20 | 9 | 3 | 10 | 2 | 8 | 3 | 10 | 3 | 17 | 3 | 20 | 2 |
| | Rampur | 21 | 8 | 3 | 10 | 1 | 10 | 5 | 11 | 3 | 18 | 4 | 21 | 2 |
| Shimla | Theog | 20 | 10 | 4 | 11 | 2 | 7 | 4 | 9 | 2 | 17 | 4 | 20 | 2 |
| Total of Territorial | | 341 | 100 | 3 | 140 | 2 | 143 | 3 | 201 | 2 | 243 | 3 | 341 | 2 |
| Kangra | Bainath | 3 | | | | | 1 | 2 | 3 | 0 | 1 | 2 | 3 | 0 |
| Kullu | Kullu | 11 | | | | | 10 | 1 | 11 | 0 | 10 | 1 | 11 | 0 |
| Mandi | Mandi | 3 | | | | | | | 3 | 1 | | | 3 | 1 |
| Kangra | Palampur | 1 | | | | | | | 1 | 2 | | | 1 | 2 |
| Kullu | Parvati | 10 | | | | | 2 | 1 | 10 | 1 | 2 | 1 | 10 | 1 |
| Kinnaur | Kinnaur | 21 | | | | | 10 | 3 | 21 | 1 | 10 | 3 | 21 | 1 |
| Shimla | Theog | 1 | | | | | | | 1 | 0 | | | 1 | 0 |
| Solan | Nalagarh | 5 | | | | | | | 5 | 0 | | | 5 | 0 |
| Shimla | Kotgarh | 2 | | | | | | | 2 | 0 | | | 2 | 0 |
| Solan | Baddi | 2 | | | | | | | 2 | 0 | | | 2 | 0 |
| Total of Graziers/ Grassland | | 59 | | | | | 23 | 2 | 59 | 1 | 23 | 2 | 59 | 1 |
| Grand Total | | 400 | 100 | 3 | 140 | 2 | 166 | 3 | 260 | 1 | 266 | 3 | 400 | 2 |

Source: Livelihood Survey, JICA Study Team (2017)

11.2 Purposes of Planting Various Species

1) Around Homestead

| District | Division | No of Respondents Interviewed | For Selling | | | | | | | Home Consumption | | | | | | | | | | Both for Selling and Home Consumption | | | | | |
|-------------------------------------|------------|-------------------------------|-------------|----------|----------|----------|--------------|----------------------|----------|------------------|-----------|-----------|-----------|-----------|----------|----------|----------|-----------|--------------|---------------------------------------|----------------|-----------------------|----------|----------|-----------------------|
| | | | Toon | Deodar | Walnut | Mango | Wild Apricot | Tota No of Responses | Ohi | Kachnar | Toon | Deodar | Walnut | Mango | Chirpine | Poplar | Willow | Bamboo | Wild Apricot | Marinoo | Horse Chestnut | Total No of Responses | Walnut | Mango | Total No of Responses |
| Bilaspur | Bilaspur | 60 | 1 | | | | 1 | | 2 | 1 | 6 | 6 | | 3 | 24 | | 8 | 3 | | | | 55 | | | 0 |
| | Bharmour | 20 | | | 1 | | | | 1 | | | 2 | | 3 | 6 | | | | | 1 | | 15 | | | 0 |
| | Chamba WL | 20 | | | | | | | 0 | | | | 4 | 7 | | | | | | | | 11 | | | 0 |
| Chamba | Panga | 20 | | | | | | | 0 | | | | 6 | | | | | | | | | 6 | | | 0 |
| | Kinnaur | 40 | | | | | | | 0 | | | 1 | 4 | 9 | | | | | 23 | 1 | | 38 | | | 0 |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | | | | 1 | 7 | | | | | 8 | | | 16 | | | 0 |
| | Kullu | 20 | | | | | | | 0 | | | | 2 | 1 | | | | | | | | 3 | | | 0 |
| Kullu | Kullu WL | 20 | | | | | | | 0 | | | | 1 | | | | | | 2 | | | 3 | | | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | | | | | | | | | | | | | 0 | | | 0 |
| | Karsog | 20 | | | | | | | 0 | | | 5 | | 3 | | | | | | | | 10 | | 1 | 1 |
| Mandi | Mandi | 20 | | | | | | | 0 | 6 | 4 | | 2 | 3 | 1 | | | 1 | | | | 18 | | | 0 |
| | Kotgarh | 20 | | | | | | 1 | 1 | | | | | 2 | 2 | | | | | | | 4 | | | 0 |
| | Rampur | 21 | | | | | | | 0 | | | | 6 | | | | 1 | | 8 | | | 15 | 2 | | 2 |
| Shimla | Theog | 20 | | | | 1 | | | 1 | | | | 1 | 2 | | | | | | | | 4 | | | 0 |
| Total of Territorial | | 341 | 1 | 0 | 2 | 2 | 0 | 5 | 7 | 12 | 13 | 17 | 56 | 27 | 5 | 1 | 9 | 44 | 1 | 1 | 198 | 2 | 1 | 3 | |
| Kangra | Bainath | 3 | | | | | | | 2 | | | | | | 1 | | | | | | | 1 | | | 0 |
| Kullu | Kullu | 11 | | 2 | | | | | 0 | | | | 1 | | | 1 | | | 1 | | | 4 | | | 0 |
| Mandi | Mandi | 3 | | | | | | | 0 | | | | | | | | | | | | | 0 | | | 0 |
| Kangra | Palampur | 1 | | | | | | | 0 | | | | | | | | | | | | | 0 | | | 0 |
| Kullu | Parvati | 10 | | | | | | | 0 | | | | | | | | | | | | | 0 | | | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | 1 | 1 | | | | 8 | | 1 | | | | 6 | | | 15 | | | 0 |
| Shimla | Theog | 1 | | | | | | | 0 | | | | | | | | | | | | | 0 | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | | | | | | | | | | | 0 | | | 0 |
| Shimla | Kotgarh | 2 | | | | | | | 0 | | | | | | | | | | | | | 0 | | | 0 |
| Solan | Baddi | 2 | | | | | | | 0 | | | | | | | | | | | | | 0 | | | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 2 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 9 | 1 | 1 | 0 | 0 | 7 | 0 | 1 | 20 | 0 | 0 | 0 | |
| Grand Total | | 400 | 1 | 2 | 2 | 2 | 1 | 8 | 7 | 12 | 13 | 17 | 65 | 28 | 6 | 6 | 1 | 9 | 51 | 1 | 2 | 218 | 2 | 1 | 3 |

Source: Livelihood Survey, JICA Study Team (2017)

12.Requirement of Timber

12.1 Number of Families Used Timber and Small Timber between April 2016 and March 2017

| District | Division | No of Respondents | JFM | | | | | | Non JFM | | | | | |
|-------------------------------------|------------|-------------------|----------|----------|--------------|-----------|----------|-----------|-----------|----------|--------------|--|-------|----|
| | | | Timber | | Small Timber | | Total | | Timber | | Small Timber | | Total | |
| Bilaspur | Bilaspur | 60 | 3 | 1 | 4 | | | | 0 | 3 | 3 | | | 4 |
| | Bharmour | 20 | | | 0 | | | | 0 | 0 | 0 | | | 0 |
| | Chamba WL | 20 | | | 0 | | | | 0 | 0 | 0 | | | 0 |
| Chamba | Pangi | 20 | 2 | 1 | 3 | | | | 0 | 2 | 2 | | | 3 |
| | Kinnaur | 40 | | | 0 | | | | 0 | 0 | 0 | | | 0 |
| Kinnaur | Sarahan WL | 20 | | | 0 | 1 | 1 | 2 | 1 | 1 | 2 | | | 2 |
| | Kullu | 20 | | | 0 | 1 | 1 | 1 | 1 | 1 | 2 | | | 1 |
| Kullu | Kullu WL | 20 | | | 0 | 2 | 1 | 3 | 2 | 1 | 3 | | | 3 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| | Karsog | 20 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| Mandi | Mandi | 20 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| | Kotgarh | 20 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| | Rampur | 21 | | | 0 | 1 | 1 | 1 | 1 | 1 | 2 | | | 1 |
| Shimla | Theog | 20 | 1 | 2 | 3 | 1 | 3 | 4 | 1 | 1 | 2 | | | 1 |
| Total of Territorial | | 341 | 6 | 2 | 8 | 5 | 2 | 7 | 11 | 4 | 15 | | | |
| Kangra | Bajinath | 3 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| | Kullu | 11 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| | Mandi | 3 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| | Palampur | 1 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| Kangra | Parvati | 10 | | | 0 | 1 | 1 | 1 | 1 | 0 | 1 | | | 1 |
| | Kinnaur | 21 | | | 0 | 9 | 1 | 10 | 9 | 1 | 10 | | | 10 |
| Shimla | Theog | 1 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| Solan | Nalagarh | 5 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| Shimla | Kotgarh | 2 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| Solan | Baddi | 2 | | | 0 | | | 0 | 0 | 0 | 0 | | | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 10 | 1 | 11 | 10 | 1 | 11 | | | |
| Grand Total | | 400 | 6 | 2 | 8 | 15 | 3 | 18 | 21 | 5 | 26 | | | |

Source: Livelihood Survey, JICA Study Team (2017)

12.2 Volume of Timber Used between April 2016 and March 2017

| District | Division | No of Respondents | JFM | | | | | | | Non JFM | | | | | | | Total | | | | | | | | | |
|-------------------------------------|------------|-------------------|---|-----------------------------------|---------------------------------|--------------------|------------|----------------------|----------|---------------------------------------|---|-----------------------------------|---------------------------------|--------------------|------------|----------------------|-------------|---------------------------------------|---------------------------------|-----------------------------------|---------------------------------|--------------------|------------|----------------------|-----------|---------------------------------------|
| | | | Main Source | | | | | | | Main Source | | | | | | | Main Source | | | | | | | | | |
| | | | Average Annual Requirement in Slippers* | Nearby Forest (Forest Department) | Nearby Forest (Owner not known) | Village/ GP Forest | Own Forest | From Cultivated Land | Total | Average Expenses for Procuring in INR | Average Annual Requirement in Slippers* | Nearby Forest (Forest Department) | Nearby Forest (Owner not known) | Village/ GP Forest | Own Forest | From Cultivated Land | Total | Average Expenses for Procuring in INR | Annual Requirement in Slippers* | Nearby Forest (Forest Department) | Nearby Forest (Owner not known) | Village/ GP Forest | Own Forest | From Cultivated Land | Total | Average Expenses for Procuring in INR |
| Bilaspur | Bilaspur | 60 | 9.3 | | | | | 1 | 1 | 100,150 | | | | | | | | | 9.3 | 0 | 0 | 0 | 0 | 1 | 1 | 100,150 |
| | Bharmour | 20 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Chamba WL | 20 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chamba | Pangi | 20 | 12.5 | 2 | | | | | 2 | 1,200 | | | | | | | | | 12.5 | 2 | 0 | 0 | 0 | 2 | 2 | 1,200 |
| | Kinnaur | 40 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Sarahan WL | 20 | | | | | | | 0 | 1.0 | | | | | | | | | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kullu | 20 | | | | | | | 0 | 10.0 | | | | | 1 | | | | 10.0 | 0 | 0 | 0 | 0 | 1 | 1 | 10.0 |
| Kullu | Kullu WL | 20 | | | | | | | 0 | 27.5 | 1 | | | | | | | | 15,000 | 27.5 | 1 | 0 | 0 | 0 | 1 | 15,000 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Karsog | 20 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 20 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kotgarh | 20 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rampur | 21 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Theog | 20 | 10 | | | | | 1 | 1 | 3,000 | 20.0 | | | | | | | | 20.0 | 0 | 0 | 0 | 0 | 1 | 1 | 3,000 |
| Total of Territorial | | 341 | 10.5 | 2 | 0 | 0 | 0 | 2 | 4 | 51,125 | 17.2 | 1 | 0 | 0 | 0 | 1 | 2 | 15,000 | 13.5 | 3 | 0 | 0 | 0 | 3 | 6 | 43,900 |
| Kangra | Bajinath | 3 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kullu | 11 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Mandi | 3 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Palampur | 1 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Parvati | 10 | | | | | | | 0 | 1.0 | | 1 | | | | | | | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kinnaur | 21 | | | | | | | 0 | 37.8 | 9 | | | | | | | | 31,000 | 37.8 | 9 | 0 | 0 | 0 | 9 | 31,000 |
| Shimla | Theog | 1 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgarh | 2 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Baddi | 2 | | | | | | | 0 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/ Grassland | | 59 | | | | | | 2 | 4 | | 34.1 | 10 | 0 | 0 | 0 | 0 | 0 | 10 | 31,000 | 34.1 | 10 | 0 | 0 | 0 | 10 | 31,000 |
| Grand Total | | 400 | 10.5 | 2 | 0 | 0 | 0 | 2 | 4 | 51,125 | 28.5 | 11 | 0 | 0 | 0 | 1 | 12 | 29,000 | 23.3 | 13 | 0 | 0 | 0 | 3 | 16 | 36,375 |

* 1 Slipper = 0.029 cubic metre

Source: Livelihood Survey, JICA Study Team (2017)

12.3 Small Timber (i.e. Poles of different sizes, fencing materials, branches) Used between April 2016 and March 2017

| District | Division | No of Respondents Interviewed | Annual Requirement in Slippers* | JFM | | | | | | | Average Expenses for Procuring in INR | Average Annual Requirement in Slippers* | Non JFM | | | | | | | Average Expenses for Procuring in INR | Average Annual Requirement in Slippers* | Total | | | | | | | Average Expenses for Procuring in INR |
|-------------------------------------|-------------|-------------------------------|---------------------------------|-----------------------------------|---------------------------------|--------------------|------------|----------------------|----------|-------------|---------------------------------------|---|-----------------------------------|---------------------------------|--------------------|-------------|----------------------|----------|----------|---------------------------------------|---|-----------------------------------|---------------------------------|--------------------|------------|----------------------|----------|-------|---------------------------------------|
| | | | | Main Source | | | | | | Total | | | Main Source | | | | | | Total | | | Main Source | | | | | | Total | |
| | | | | Nearby Forest (Forest Department) | Nearby Forest (Owner not known) | Village/ GP Forest | Own Forest | From Cultivated Land | Total | | | | Nearby Forest (Forest Department) | Nearby Forest (Owner not known) | Village/ GP Forest | Own Forest | From Cultivated Land | Total | | | | Nearby Forest (Forest Department) | Nearby Forest (Owner not known) | Village/ GP Forest | Own Forest | From Cultivated Land | Total | | |
| Bilaspur | Bilaspur | 60 | 6.0 | | | | | | 0 | | | | | | | 0 | | | | | 6.0 | | | | | | | 0 | |
| | Bharmour | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| | Chamba WL | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Chamba | Pang | 20 | 15.0 | 1 | | | | | 0 | | | | | | | 0 | | | | | | 15.0 | 1 | | | | | 1 | |
| | Kinnaur | 40 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| | Sarahan WL | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 20.0 | | | | | | 0 | |
| Kinnaur | Kullu | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| | Kullu WL | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 15.0 | | | | | | 0 | |
| Kullu | Kullu WL | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 15.0 | | | | | | 0 | |
| Lahaul & Spiti | Spiti (W/L) | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| | Karsog | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Mandi | Mandi | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| | Kotgarh | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| | Rampur | 21 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Shimla | Theog | 20 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Total of Territorial | | 341 | 13.7 | 1 | 0 | 0 | 0 | 0 | 1 | 15.0 | 0 | 0 | 0 | 0 | 0 | 14.0 | 1 | 0 | 0 | 0 | 14.0 | 1 | 0 | 0 | 0 | 0 | 1 | | |
| Kangra | Bainath | 3 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Kullu | Kullu | 11 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Mandi | Mandi | 3 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Kangra | Palampur | 1 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Kullu | Parvati | 10 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | 0 | | | | | | | 0 | | | | | | 20.0 | 1 | | | | | 1 | |
| Shimla | Theog | 1 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Solan | Baddi | 2 | | | | | | | 0 | | | | | | | 0 | | | | | | 0 | | | | | | 0 | |
| Total of Graziers/ Grassland | | 59 | | | | | | | 0 | 20.0 | 1 | 0 | 0 | 0 | 0 | 1 | 20.0 | 1 | 0 | 0 | 0 | 20.0 | 1 | 0 | 0 | 0 | 1 | | |
| Grand Total | | 400 | 17.5 | 1 | 0 | 0 | 0 | 0 | 1 | 17.5 | 1 | 0 | 0 | 0 | 0 | 1 | 15.2 | 2 | 0 | 0 | 0 | 15.2 | 2 | 0 | 0 | 2 | | | |

* 1 Slipper = 0.029 cubic metre

Source: Livelihood Survey, JICA Study Team (2017)

13.3 Where to Sell the Produce

| District | Division | No of Respondents Interviewed | Maize | | Wheat | | Potato | | Cauliflower | | Cabbage | | Tomato | | Green Peas | | French Beans | | Rice | | Pulses | | Ginger | | Garlic | | Capsicum | | Colocasia | | Barley | | Pulses (Mash/ Vigna Vadiata) | | Total | |
|-------------------------------------|------------|-------------------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|------------------------------|---------------------|--------------------|---------------------|
| | | | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village | Inside the Village | Outside the Village |
| Bilaspur | Bilaspur | 60 | 3 | 2 | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | 6 | 3 |
| | Bharmour | 20 | 1 | | | | 1 | | | | | | | | | | | | | | | 2 | | | | | | | | 2 | | | | 8 | 0 | |
| | Chamba WL | 20 | | | | | 3 | 1 | | | | | | | | | | | | | | 7 | | | | | | | | | | | | 10 | 1 | |
| Chamba | Pangi | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| | Kinnaur | 40 | 1 | | 1 | | 1 | 2 | | 2 | | 2 | | | | | | | | | | 2 | 3 | | | | | | | | | | | | 5 | 9 |
| Kinnaur | Sarahan WL | 20 | | | | | 2 | 2 | | 1 | | 1 | | | | | | | | | | 1 | | | | | | | | | | | | | 6 | 2 |
| | Kullu | 30 | | | | | | 1 | | 3 | | | | 6 | | | | | | | | | | | 1 | | | | | | 1 | | | | 1 | 11 |
| Kullu | Kullu WL | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | 1 | 0 |
| | Karsog | 20 | 5 | 6 | 1 | | | | | | | | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | 7 | 7 |
| Mandi | Mandi | 20 | 3 | 6 | 1 | 1 | 1 | 1 | 4 | 5 | | 2 | 2 | 5 | | | 1 | 1 | | | | | | 1 | 1 | | 1 | | | | | | | 14 | 23 | |
| | Kotgarh | 20 | | | | | 1 | 1 | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | 4 | 2 |
| | Rampur | 21 | | | | | 1 | 3 | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | 1 | 7 |
| Shimla | Theog | 20 | | | | | | | | 5 | | 3 | | | | | 7 | | | | | | | | | | | | | 1 | | | | | 0 | 16 |
| Total of Territorial | | 341 | 13 | 14 | 3 | 1 | 10 | 10 | 5 | 15 | 1 | 9 | 5 | 15 | 1 | 0 | 0 | 8 | 1 | 0 | 12 | 5 | 1 | 1 | 2 | 1 | 1 | 0 | 4 | 1 | | 2 | 0 | 63 | 81 | |
| Kangra | Bainmath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Kullu | Kullu | 11 | | | | | | | | | 1 | | 2 | 5 | | | | | | | | | | | | | | | | | | | | | 0 | 8 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Kullu | Purvati | 10 | | | | | | 1 | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | 0 | 2 |
| Kinnaur | Kinnaur | 21 | | | | | 1 | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | 2 | 3 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | |
| Grand Total | | 400 | 13 | 14 | 3 | 1 | 11 | 11 | 5 | 16 | 1 | 11 | 5 | 21 | 1 | 0 | 0 | 8 | 1 | 0 | 13 | 8 | 1 | 1 | 2 | 1 | 1 | 0 | 4 | 1 | 0 | 0 | 2 | 0 | 65 | 94 |

Source: Livelihood Survey, JICA Study Team (2017)

14. 2 Production (1)

| District | Division | No of Respondents Interviewed | Apple | | | | | | | | | | | | Pomegranate | | | | | | | | | | | | |
|-------------------------------------|----------------|-------------------------------|--------------------------------|--|-------------------------|---------------------------------|---------------------|-----------------------------|-----------------------------------|---------------------------------|-------------------------|---------------------------------|----------------------------|-------------------|--------------------------------|--|-------------------------|---------------------------------|---------------------|-----------------------------|-----------------------------------|---------------------------------|-------------------------|---------------------------------|----------------------------|-------------------|-----|
| | | | Gross Production Area in Biswa | Per Household Production Area in Biswa | Gross Investment in INR | Per Household Investment in INR | Gross Harvest in Kg | Per Household Harvest in Kg | Gross Household Consumption in Kg | Per Household Consumption in Kg | Gross Volume Sold in Kg | Per Household Volume Sold in Kg | Average Sales Price per Kg | Yield (Kg/ biswa) | Gross Production Area in Biswa | Per Household Production Area in Biswa | Gross Investment in INR | Per Household Investment in INR | Gross Harvest in Kg | Per Household Harvest in Kg | Gross Household Consumption in Kg | Per Household Consumption in Kg | Gross Volume Sold in Kg | Per Household Volume Sold in Kg | Average Sales Price per Kg | Yield (Kg/ biswa) | |
| Bilaspur | Bilaspur | 60 | 2.7 | 0.9 | 2,200.0 | 733.3 | 100.0 | 100.0 | 100.0 | 100.0 | | | 37.7 | 0.5 | 0.5 | 1,000.0 | 1,000.0 | 21.0 | 10.5 | 21.0 | 10.5 | | | | | 42.0 | |
| | Bharmour | 20 | 14.0 | 1.8 | 87,000.0 | 12,429.0 | 26,060.0 | 2,895.6 | 230.0 | 38.3 | 24,970.0 | 3,121.3 | 28.8 | 1,861.4 | | | | | | | | | | | | | |
| | Chamba WL | 20 | 7.5 | 1.9 | 21,500.0 | 7,167.0 | 5,060.0 | 722.9 | 1,460.0 | 243.3 | 3,500.0 | 1,750.0 | 40.0 | 674.7 | | | | | | | | | | | | | |
| Chamba | Pangi | 20 | 19.1 | 1.9 | 22,800.0 | 2,533.3 | 820.0 | 273.3 | 120.0 | 60.0 | 780.0 | 260.0 | 22.0 | 42.9 | | | | | | | | | | | | | |
| | Kinnaur | 40 | 153.0 | 5.1 | 1,863,200.0 | 64,248.3 | 189,565.0 | 6,770.2 | 3,165.0 | 158.3 | 160,450.0 | 6,685.4 | 50.0 | 1,239.0 | | | | | | | | | | | | | |
| Kinnaur | Sarahan WL | 20 | 98.5 | 6.6 | 179,200.0 | 11,200.0 | 9,470.0 | 728.5 | 930.0 | 103.3 | 5,540.0 | 461.7 | 105.3 | 96.1 | | | | | | | | | | | | | |
| | Kullu | 30 | 50.1 | 2.9 | 215,500.0 | 16,576.9 | 33,470.0 | 3,347.0 | 220.0 | 44.0 | 33,290.0 | 3,329.0 | 32.6 | 667.8 | 7.5 | 1.9 | 19,000.0 | 6,333.3 | 1,600.0 | 800.0 | | | 1,600.0 | 800.0 | 35.0 | 213.3 | |
| Kullu | Kullu WL | 10 | 60.0 | 4.0 | 326,000.0 | 23,285.7 | 39,950.0 | 2,853.6 | 1,470.0 | 183.8 | 38,500.0 | 2,750.0 | 40.7 | 665.8 | | | | | | | | | | | | | |
| | Lahaul & Spiti | 20 | 21.0 | 3.0 | 314,000.0 | 44,857.1 | 13,150.0 | 2,630.0 | 256.0 | 64.0 | 15,000.0 | 2,500.0 | 95.0 | 626.2 | | | | | | | | | | | | | |
| Mandi | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Mandi | 20 | | | | | | | | | | | | | 0.1 | 0.1 | | | | | 1.0 | 1.0 | | | | | 0.0 |
| Shimla | Kotgarh | 20 | 16.5 | 2.4 | 91,800.0 | 11,475.0 | 5,240.0 | 748.6 | 164.0 | 41.0 | 5,076.0 | 846.0 | 64.8 | 317.6 | | 50.0 | 50.0 | 10.0 | 10.0 | | | | | | | | |
| | Rampur | 21 | 71.4 | 5.5 | 93,000.0 | 11,625.0 | 8,030.0 | 1,003.8 | 1,370.0 | 228.3 | 6,420.0 | 1,070.0 | 396.0 | 112.5 | | | | | | | | | | | | | |
| | Theog | 20 | 54.5 | 3.9 | 254,500.0 | 25,450.0 | 5,390.0 | 770.0 | 605.0 | 121.0 | 4,475.0 | 1,118.8 | 53.6 | 98.9 | | | | | | | | | | | | | |
| Total of Territorial | | 341 | 568.3 | 4.0 | 3,470,700.0 | 27,328.3 | 336,305.0 | 3,002.7 | 10,090.0 | 132.8 | 298,001.0 | 3,136.9 | 72.8 | 591.8 | 8.1 | 1.4 | 20,050.0 | 4,010.0 | 1,631.0 | 326.2 | 22.0 | 7.3 | 1,600.0 | 800.0 | 35.0 | 201.4 | |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kullu | 11 | 12.0 | 6.0 | 165,000.0 | 82,500.0 | 30,000.0 | 15,000.0 | 100.0 | 100.0 | 7,500.0 | 3,750.0 | 30.0 | 2,500.0 | 28.5 | 4.1 | 640,000.0 | 91,428.6 | 20,236.0 | 2,890.9 | 290.0 | 58.0 | 20,235.0 | 2,890.7 | 48.6 | 710.0 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kinnaur | 21 | 58.0 | 3.4 | 770,500.0 | 51,366.7 | 54,425.0 | 3,628.3 | 1,035.0 | 86.3 | 20,470.0 | 1,462.1 | | 938.4 | | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 70.0 | 3.7 | 935,500.0 | 55,029.4 | 84,425.0 | 4,966.2 | 1,135.0 | 87.3 | 27,970.0 | 1,748.1 | 93,856.4 | 1,206.1 | 31.5 | 3.9 | 660,000.0 | 82,500.0 | 22,736.0 | 2,842.0 | 340.0 | 56.7 | 22,735.0 | 2,841.9 | 48.8 | 721.8 | |
| Grand Total | | 400 | 638.3 | 3.9 | 4,406,200.0 | 30,598.6 | 420,730.0 | 3,261.5 | 11,225.0 | 126.1 | 325,971.0 | 2,936.7 | 13,470.5 | 659.2 | 39.6 | 2.8 | 680,050.0 | 52,311.5 | 24,367.0 | 1,874.4 | 362.0 | 40.2 | 24,335.0 | 2,433.5 | 46.0 | 615.3 | |

* 1 bigha = 800 sq. m/ 1 biswa=40 sq. m

Source: Livelihood Survey, JICA Study Team (2017)

| District | Division | No of Respondents Interviewed | P each | | | | | | | | | | | | Plum | | | | | | | | | | | | |
|-------------------------------------|----------------|-------------------------------|--------------------------------|--|-------------------------|---------------------------------|---------------------|-----------------------------|-----------------------------------|---------------------------------|-------------------------|---------------------------------|----------------------------|-------------------|--------------------------------|--|-------------------------|---------------------------------|---------------------|-----------------------------|-----------------------------------|---------------------------------|-------------------------|---------------------------------|----------------------------|-------------------|-----|
| | | | Gross Production Area in Biswa | Per Household Production Area in Biswa | Gross Investment in INR | Per Household Investment in INR | Gross Harvest in Kg | Per Household Harvest in Kg | Gross Household Consumption in Kg | Per Household Consumption in Kg | Gross Volume Sold in Kg | Per Household Volume Sold in Kg | Average Sales Price per Kg | Yield (Kg/ biswa) | Gross Production Area in Biswa | Per Household Production Area in Biswa | Gross Investment in INR | Per Household Investment in INR | Gross Harvest in Kg | Per Household Harvest in Kg | Gross Household Consumption in Kg | Per Household Consumption in Kg | Gross Volume Sold in Kg | Per Household Volume Sold in Kg | Average Sales Price per Kg | Yield (Kg/ biswa) | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Bharmour | 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chamba | Pangi | 20 | | | | | 15.0 | 15.0 | | | | | | | | | | | | | | | | | | | |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kinnaur | Sarahan WL | 20 | | | | | 10.0 | 10.0 | 10.0 | 10.0 | | | | | | | | | | | | | | | | | |
| | Kullu | 30 | 3.5 | 1.2 | 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | | | 1,000.0 | 1,000.0 | 30.0 | 285.7 | 1.0 | 1.0 | 5,000.0 | 5,000.0 | | | | | | | | | 0.0 |
| Kullu | Kullu WL | 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Lahaul & Spiti | 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Mandi | 20 | 0.1 | 0.1 | | | | | 1.0 | 1.0 | | | | | | | | | | | | | | | | | |
| | Kotgarh | 20 | 2.0 | 2.0 | 13,000.0 | 6,500.0 | 470.0 | 235.0 | 10.0 | 10.0 | 460.0 | 230.0 | 40.0 | 235.0 | 5.0 | 1.0 | 17,000.0 | 4,250.0 | 880.0 | 176.0 | 5.0 | 5.0 | 1,075.0 | 215.0 | 39.0 | 176.0 | |
| Shimla | Rampur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Territorial | | 341 | 5.6 | 1.1 | 14,000.0 | 4,666.7 | 1,495.0 | 299.0 | 21.0 | 7.0 | 1,460.0 | 486.7 | 36.7 | 267.0 | 6.0 | 1.0 | 22,000.0 | 4,400.0 | 880.0 | 176.0 | 6.0 | 3.0 | 1,075.0 | 215.0 | 39.0 | 146.7 | |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | 30.0 | 30.0 | 30.0 | 30.0 | | | | | | |
| | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grand Total | | 400 | 5.6 | 1.1 | 14,000.0 | 4,666.7 | 1,495.0 | 299.0 | 21.0 | 7.0 | 1,460.0 | 486.7 | 36.7 | 267.0 | 6.0 | 1.0 | 22,000.0 | 4,400.0 | 910.0 | 151.7 | 36.0 | 12.0 | 1,075.0 | 215.0 | | | |

14.5 Who collects market related information?

| District | Division | No of Respondents Interviewed | JFM | | | Non JFM | | | Total | | | % to Total | | |
|-------------------------------------|------------|-------------------------------|------------|--------------|-----------|------------|--------------|------------|------------|--------------|------------|--------------|--------------|--------------|
| | | | Male Adult | Female Adult | Total | Male Adult | Female Adult | Total | Male Adult | Female Adult | Total | Male Adult | Female Adult | Total |
| Bilaspur | Bilaspur | 60 | 1 | 1 | 2 | 4 | | 4 | 5 | 1 | 6 | 83.3 | 16.7 | 100.0 |
| Chamba | Bharmour | 20 | 3 | 2 | 5 | 7 | 1 | 8 | 10 | 3 | 13 | 76.9 | 23.1 | 100.0 |
| | Chamba WL | 20 | | | 0 | 5 | 1 | 6 | 5 | 1 | 6 | 83.3 | 16.7 | 100.0 |
| | Pangi | 20 | 2 | 2 | 2 | 2 | | 2 | 4 | 0 | 4 | 100.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 4 | | 4 | 9 | 1 | 10 | 13 | 1 | 14 | 92.9 | 7.1 | 100.0 |
| | Sarahan WL | 20 | | | 0 | 9 | 2 | 11 | 9 | 2 | 11 | 81.8 | 18.2 | 100.0 |
| Kullu | Kullu | 20 | 5 | 2 | 7 | 6 | 2 | 8 | 11 | 4 | 15 | 73.3 | 26.7 | 100.0 |
| | Kullu WL | 20 | | | 0 | 10 | 2 | 12 | 10 | 2 | 12 | 83.3 | 16.7 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | 8 | 3 | 11 | 8 | 3 | 11 | 72.7 | 27.3 | 100.0 |
| Mandi | Karsog | 20 | | | 0 | 3 | | 3 | 3 | 0 | 3 | 100.0 | 0.0 | 100.0 |
| | Mandi | 20 | | | 0 | | | 0 | 0 | 0 | 6 | 1.0 | 0.0 | 1.0 |
| | Kotgarh | 20 | 3 | 1 | 4 | 6 | | 6 | 9 | 1 | 10 | 90.0 | 10.0 | 100.0 |
| Shimla | Rampur | 21 | 4 | | 4 | 3 | | 3 | 7 | 0 | 7 | 100.0 | 0.0 | 100.0 |
| | Theog | 20 | 1 | | 1 | 1 | | 1 | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 23 | 6 | 29 | 73 | 12 | 85 | 96 | 18 | 120 | 80.0 | 15.0 | 95.0 |
| Kangra | Bajjnath | 3 | | | 0 | 1 | | 1 | 1 | 0 | 1 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | 0 | 7 | | 7 | 7 | 0 | 7 | 100.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Kangra | Palampur | 1 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Kullu | Parvati | 10 | | | 0 | 2 | | 2 | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | 0 | 12 | | 12 | 12 | 0 | 12 | 100.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Solan | Baddi | 2 | | | 0 | | | 0 | 0 | 0 | 0 | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 22 | 0 | 22 | 22 | 0 | 22 | 100.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 23 | 6 | 29 | 95 | 12 | 107 | 118 | 18 | 142 | 83.1 | 12.7 | 95.8 |

Source: Livelihood Survey, JICA Study Team (2017)

15. NTFP

15.1 No of Households Collecting Various NTFPs (JFM)

| District | Division | Total No of Respondents | Patis | Bankakri | Kadu | Kuth | Dhoop | Guchhi | Chilgoza/Neozoa/Pine nut | Kala Jeera | Bach/Bare | Chora | Somlata | Banafsha | Kashmal/Berberis | Jangli Lehsun | Talis Patra | Bhojpatra | Pine Cones | Tol Patta | Bamboo | Nagala | Harad | Beheda | Wild Pomegranate | Tjamgo | Behendi | Chukri | Rakcha | Neelkanti | Sugandri | Total | | |
|----------------|-------------------------------------|-------------------------|----------|----------|----------|----------|----------|-----------|--------------------------|------------|-----------|----------|----------|----------|------------------|---------------|-------------|-----------|------------|-----------|----------|----------|----------|----------|------------------|----------|----------|----------|----------|-----------|----------|-----------|----|---|
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Bharmour | 20 | | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 7 | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Chamba | Pangi | 20 | 1 | | | | | 2 | 5 | | | | | | | | | | | | | | | | | | | | | | | | 16 | |
| | Kinnaur | 40 | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Kullu | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | |
| Kullu | Kullu WL | 20 | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Rampur | 21 | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Total of Territorial | 341 | 2 | 0 | 1 | 1 | 4 | 11 | 0 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 34 | | |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Total of Graziers/ Grassland | 59 | 2 | 0 | 1 | 1 | 4 | 11 | 0 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 34 | | |
| | Grand Total | 400 | 2 | 0 | 1 | 1 | 4 | 11 | 0 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 34 | | |

Source: Livelihood Survey, JICA Study Team (2017)

15.1 No of Households Collecting Various NTFPs (Non JFM)

| District | Division | Total No of Respondents | Patis | Bankakri | Kadu | Kuth | Dhoop | Guchhi | Chilgoza/Neozoa/Pine nut | Kala Jeera | Bach/Bare | Chora | Somlata | Banafsha | Kashmal/Berberis | Jangli Lehsun | Talis Patra | Bhojpatra | Pine Cones | Tol Patta | Bamboo | Nagala | Harad | Beheda | Wild Pomegranate | Tjamgo | Behendi | Chukri | Rakcha | Neelkanti | Sugandri | Total | | |
|----------------|-------------------------------------|-------------------------|----------|----------|----------|----------|-----------|-----------|--------------------------|------------|-----------|----------|----------|----------|------------------|---------------|-------------|-----------|------------|-----------|----------|----------|----------|----------|------------------|----------|----------|----------|----------|-----------|----------|------------|---|----|
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Bharmour | 20 | | | | | | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| | Chamba WL | 20 | | | | | | 6 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | 16 |
| Chamba | Pangi | 20 | 1 | | | | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | 18 |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Kinnaur | Sarahan WL | 20 | 2 | 1 | | | | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | 13 |
| | Kullu | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Kullu WL | 20 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Karsog | 20 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| | Rampur | 21 | | | | | | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | 11 |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Total of Territorial | 341 | 4 | 2 | 0 | 0 | 16 | 13 | 2 | 9 | 0 | 6 | 0 | 0 | 0 | 0 | 5 | 4 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 70 | | |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Parvati | 10 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| Kinnaur | Kinnaur | 21 | | | | 1 | | 7 | 4 | 6 | | | | | | | | | | | | | | | | | | | | | | | | 30 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Total of Graziers/ Grassland | 59 | 1 | 0 | 1 | 0 | 7 | 4 | 6 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | | |
| | Grand Total | 400 | 5 | 2 | 1 | 0 | 23 | 17 | 8 | 18 | 0 | 6 | 0 | 0 | 0 | 8 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 3 | 3 | 0 | 1 | 0 | 1 | 2 | 0 | 110 | | |

Source: Livelihood Survey, JICA Study Team (2017)

15.1 No of Households Collecting Various NTFPs (Total)

| District | Division | Total No of Respondents | Patis | Bankakri | Kadu | Kuth | Dhoop | Guchhi | Chilgoza/Neozo/Pine nut | Kala Jeera | Bach/Bare | Chora | Somlata | Banafsha | Kashmal/Berberis | Jangli Lehsun | Talis Patra | Bhojpatra | Pine Cones | Tol Patta | Bamboo | Nagala | Harad | Beheda | Wild Pomegranate | Tjamgo | Behendi | Chukri | Rakcha | Neelkanti | Sugandri | Total | |
|-------------------------------------|------------|-------------------------|----------|----------|----------|----------|-----------|-----------|-------------------------|------------|-----------|----------|----------|----------|------------------|---------------|-------------|-----------|------------|-----------|----------|----------|----------|----------|------------------|----------|----------|----------|----------|-----------|-----------|------------|----|
| Bilaspur | Bilaspur | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Bharmour | 20 | 1 | 0 | 1 | 1 | 3 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | Chamba WL | 20 | 0 | 0 | 0 | 6 | 5 | 5 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Chamba | Pangi | 20 | 2 | 0 | 0 | 0 | 6 | 5 | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 34 | |
| | Kinnaur | 40 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| | Sarahan WL | 20 | 2 | 1 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 13 | |
| | Kullu | 20 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | |
| Kullu | Kullu WL | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Karsog | 20 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | |
| Mandi | Mandi | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| | Kotgarh | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | Rampur | 21 | 0 | 11 | 0 | 0 | 2 | 3 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 13 | |
| Shimla | Theog | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Territorial | | 341 | 6 | 2 | 1 | 1 | 20 | 24 | 2 | 14 | 1 | 8 | 0 | 0 | 0 | 5 | 4 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 104 | |
| Kangra | Bajinath | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Kullu | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Mandi | Mandi | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Parvati | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| Kinnaur | Kinnaur | 21 | 0 | 0 | 1 | 0 | 7 | 4 | 6 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Nalagarh | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Graziers/ Grassland | | 59 | 1 | 0 | 1 | 0 | 7 | 4 | 6 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | |
| Grand Total | | 400 | 7 | 2 | 2 | 1 | 27 | 28 | 8 | 23 | 1 | 8 | 0 | 0 | 0 | 8 | 4 | 3 | 2 | 2 | 1 | 2 | 3 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 11 | | |

Source: Livelihood Survey, JICA Study Team (2017)

15.1 No of Households Collecting Various NTFPs (% to the Total No of Respondents (a))

| | | % to the Total No of Respondents (a) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|------------|--------------------------------------|------------|------------|------------|------------|------------|------------|-------------------------|------------|------------|------------|------------|------------|------------------|---------------|-------------|-----------|------------|-----------|--------|--------|-------|--------|------------------|--------|---------|--------|--------|-----------|----------|-----|-----|
| District | Division | Total No of Respondents (a) | Patis | Bankakri | Kadu | Kuth | Dhoop | Guchhi | Chilgoza/Neozo/Pine nut | Kala Jeera | Bach/Bare | Chora | Somlata | Banafsha | Kashmal/Berberis | Jangli Lehsun | Talis Patra | Bhojpatra | Pine Cones | Tol Patta | Bamboo | Nagala | Harad | Beheda | Wild Pomegranate | Tjamgo | Behendi | Chukri | Rakcha | Neelkanti | Sugandri | | |
| Bilaspur | Bilaspur | 60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | Bharmour | 20 | 5.0 | 0.0 | 5.0 | 5.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | Chamba WL | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 30.0 | 25.0 | 0.0 | 5.0 | 0.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Chamba | Pangi | 20 | 10.0 | 0.0 | 0.0 | 0.0 | 30.0 | 25.0 | 0.0 | 65.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 15.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | Kinnaur | 40 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | Sarahan WL | 20 | 10.0 | 5.0 | 0.0 | 0.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | |
| | Kullu | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Kullu | Kullu WL | 20 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Karsog | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 5.0 | 0.0 | 0.0 |
| Mandi | Mandi | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Kotgarh | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Rampur | 21 | 0.0 | 4.8 | 0.0 | 0.0 | 9.5 | 14.3 | 4.8 | 0.0 | 0.0 | 9.5 | 0.0 | 0.0 | 0.0 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 0.0 | 0.0 | 0.0 | |
| Shimla | Theog | 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total of Territorial | | 341 | 1.8 | 0.6 | 0.3 | 0.3 | 5.9 | 7.0 | 0.6 | 4.1 | 0.3 | 2.3 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | | | | |

15.2 Sources of NTFPs

| District | Division | No of Respondents Interviewed | Patis | | | Dhoop | | | Guchhi | | | Chilgoza/ Pine Nut | | | Kala Jeera | | | Chora | | | Jangli Lehsun | | | Talis Patra | | | Total | | | % to Total | | | | | | |
|-------------------------------------|-------------|-------------------------------|----------|--------------|----------|----------|--------------|----------|----------|--------------|----------|--------------------|--------------|----------|------------|--------------|----------|----------|--------------|----------|---------------|--------------|----------|-------------|--------------|----------|-----------|--------------|-----------|------------|--------------|-------------|--------------|--------------|--|--|
| | | | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | JFM Area | Other Forest | Own Farm | Total | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Bharmour | 20 | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chamba | Pang | 20 | 2 | 1 | | | | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kinnaur | Sarahan WL | 20 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kullu | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lahaul & Spiti | Spirit(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Territorial | | 341 | 2 | 3 | 0 | 5 | 11 | 0 | 9 | 14 | 0 | 1 | 1 | 0 | 3 | 8 | 0 | 4 | 4 | 0 | 0 | 3 | 0 | 2 | 0 | 1 | 26 | 44 | 1 | 71 | 36.6 | 62.0 | 1.4 | 100.0 | | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 89 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0.0 | 100.0 | 0.0 | 100.0 | | | |
| Grand Total | | 400 | 2 | 3 | 0 | 5 | 15 | 0 | 9 | 14 | 0 | 1 | 1 | 0 | 3 | 15 | 0 | 4 | 4 | 0 | 0 | 3 | 0 | 2 | 0 | 1 | 26 | 62 | 1 | 89 | 29.2 | 69.7 | 1.1 | 100.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

15.3 No of Days for Collection and No of Persons Engaged

| District | Division | No of Respondents Interviewed | Patis | | | Dhoop | | | Guchhi | | | Chilgoza/ Pine Nut | | | Kala Jeera | | | Chora | | | Jangli Lehsun | | | Talis Patra | | | Total | | | | | | | | | |
|-------------------------------------|-------------|-------------------------------|---|-----------------------------|---------------------------|--------------------------------|---|-----------------------------|---------------------------|--------------------------------|---|-----------------------------|---------------------------|--------------------------------|---|-----------------------------|---------------------------|--------------------------------|---|-----------------------------|---------------------------|--------------------------------|---|-----------------------------|---------------------------|--------------------------------|---|-----------------------------|---------------------------|--------------------------------|-------------|------------|------------|------------|--|--|
| | | | Average No of Days Spent for Collection | Average No of Women Engaged | Average No of Men Engaged | Average No of Children Engaged | Average No of Days Spent for Collection | Average No of Women Engaged | Average No of Men Engaged | Average No of Children Engaged | Average No of Days Spent for Collection | Average No of Women Engaged | Average No of Men Engaged | Average No of Children Engaged | Average No of Days Spent for Collection | Average No of Women Engaged | Average No of Men Engaged | Average No of Children Engaged | Average No of Days Spent for Collection | Average No of Women Engaged | Average No of Men Engaged | Average No of Children Engaged | Average No of Days Spent for Collection | Average No of Women Engaged | Average No of Men Engaged | Average No of Children Engaged | Average No of Days Spent for Collection | Average No of Women Engaged | Average No of Men Engaged | Average No of Children Engaged | | | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Bharmour | 20 | 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chamba | Pang | 20 | 3.0 | 1.0 | 1.0 | 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kinnaur | Sarahan WL | 20 | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kullu | 30 | 30.0 | 1.0 | 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lahaul & Spiti | Spirit(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Territorial | | 341 | 7.4 | 1.0 | 1.0 | 1.0 | 6.5 | 1.0 | 1.2 | 18.7 | 1.0 | 1.0 | 1.0 | 7.0 | 1.0 | 1.0 | 7.9 | 1.0 | 1.0 | 1.0 | 2.7 | 1.0 | 1.0 | 1.0 | 11.8 | 1.0 | 1.0 | 29.0 | 1.0 | 2.0 | 11.5 | 1.0 | 1.0 | 1.3 | | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 30.0 | 1.0 | 1.0 | 3.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 89 | 30.0 | 1.0 | 1.0 | 3.0 | 11.4 | 3.3 | 5.8 | 9.5 | 1.0</ | | | | | | | | | | | | | | | | | | | | | | | | | |

15. NTFP

15.5 No of Households Engaged in NTFP Processing (JFM)

| District | Division | No of Respondents Interviewed | Patis | Bankakri | Kadu | Dhoop | Guchhi | Chilgoza / Pine Nuts | Kala Jeera | Chora | Somlata | Banfsha | Kashmal / Berberis | Jangli Lehsun | Talis Patra | Bhojpatra | Pine cones | Tol Ptta | Bamboo | Nagale | Harad | Beheda | Wild Pmegranat | Total | |
|------------------------------------|------------|-------------------------------|----------|----------|----------|----------|----------|----------------------|------------|----------|----------|----------|--------------------|---------------|-------------|-----------|------------|----------|----------|----------|----------|----------|----------------|----------|----------|
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Bharmour | 20 | 1 | | 1 | 1 | | | | | 1 | | | | | | | | | | | 1 | | 5 | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Chamba | Pangi | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Kinnaur | 40 | | | | | 2 | | | | | | | | | | | | | | | | | 2 | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Kullu | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | 1 | 1 | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | Rampur | 21 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Total of Territorial | | 341 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 8 | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | 0 | |
| Total of Graziers/Grassland | | 59 | | | | | | | | | | | | | | | | | | | | | | | 0 |
| Grand Total | | 400 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 8 | |

Source: Livelihood Survey, JICA Study Team (2017)

15.5 No of Households Engaged in NTFP Processing (Non JFM)

| District | Division | No of Respondents Interviewed | Patis | Bankakri | Kadu | Dhoop | Guchhi | Chilgoza / Pine Nuts | Kala Jeera | Chora | Somlata | Banfsha | Kashmal / Berberis | Jangli Lehsun | Talis Patra | Bhojpatra | Pine cones | Tol Ptta | Bamboo | Nagale | Harad | Beheda | Wild Pmegranat | Total |
|------------------------------------|------------|-------------------------------|----------|----------|----------|-----------|----------|----------------------|------------|----------|----------|----------|--------------------|---------------|-------------|-----------|------------|----------|----------|----------|----------|----------|----------------|-----------|
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Bharmour | 20 | | | | 1 | 1 | | | | | | | | | | | | | | | | | 2 |
| | Chamba WL | 20 | | 1 | | | 1 | | | | | | | | | | | | | | | | | 2 |
| Chamba | Pangi | 20 | | | | 2 | | | | 2 | | | | | 1 | | | | | | | | | 5 |
| | Kinnaur | 40 | 2 | | | | | | | | | | | | | | | | | | | | | 2 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Kullu | 20 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Kullu WL | 20 | 1 | | | | | | | | | | | | 1 | | | | | | | | | 2 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Karsog | 20 | 1 | | | | | | | | | | | | | | | | | | | | | 1 |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | 1 | 2 | | 1 | | 4 |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | 0 |
| | Rampur | 21 | | | | | 1 | | | | | | | | | | | | | | | | | 1 |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Total of Territorial | | 341 | 4 | 1 | 0 | 3 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 19 |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Kullu | Parvati | 10 | 3 | | | | | | | | 2 | 1 | 2 | 3 | 4 | | | | | | | | | 15 |
| Kinnaur | Kinnaur | 21 | | | 1 | 7 | 1 | 3 | 9 | | | | | | | 1 | 2 | | | | | | | 24 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | 3 | 3 | 6 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | 0 |
| Total of Graziers/Grassland | | 59 | 3 | 0 | 1 | 7 | 1 | 3 | 9 | 0 | 2 | 1 | 2 | 3 | 4 | 1 | 2 | 0 | 0 | 0 | 3 | 3 | 0 | 45 |
| Grand Total | | 400 | 7 | 1 | 1 | 10 | 4 | 3 | 11 | 0 | 2 | 1 | 2 | 5 | 4 | 1 | 2 | 1 | 2 | 1 | 3 | 3 | 0 | 64 |

Source: Livelihood Survey, JICA Study Team (2017)

15.5 No of Households Engaged in NTFP Processing (Total)

| District | Division | No of Respondents Interviewed | Patis | Bankra | Kadu | Dhoop | Guchhi | Chilgoza / Pine Nuts | Kala Jeera | Chora | Somlata | Banfsha | Kashmal / Berberis | Jangli Lehsun | Talis Patra | Bhojpatra | Pine cones | Tol Ptta | Bamboo | Nagale | Harad | Beheda | Wild Pmegranat | Total | |
|-------------------------------------|------------|-------------------------------|----------|----------|----------|-----------|----------|----------------------|------------|----------|----------|----------|--------------------|---------------|-------------|-----------|------------|----------|----------|----------|----------|----------|----------------|-----------|----|
| Bilaspur | Bilaspur | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Bharmour | 20 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | |
| | Chamba WL | 20 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Chamba | Pangi | 20 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | |
| | Kinnaur | 40 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| Kinnaur | Sarahan WL | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Kullu | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kullu | Kullu WL | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Karsog | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | |
| Mandi | Mandi | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 4 | |
| | Kotgarh | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Rampur | 21 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Shimla | Theog | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total of Territorial | | 341 | 5 | 1 | 1 | 4 | 5 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 27 | |
| Kangra | Bajnath | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Kinnaur | Kinnaur | 21 | 0 | 0 | 1 | 7 | 1 | 3 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/ Grassland | | 59 | 3 | 0 | 1 | 7 | 1 | 3 | 9 | 0 | 2 | 1 | 2 | 3 | 4 | 1 | 2 | 0 | 0 | 0 | 3 | 3 | 0 | 45 | |
| Grand Total | | 400 | 8 | 1 | 2 | 11 | 6 | 3 | 11 | 1 | 2 | 1 | 2 | 5 | 4 | 1 | 2 | 1 | 2 | 2 | 3 | 3 | 1 | 72 | |

Source: Livelihood Survey, JICA Study Team (2017)

15.6 Type of Processing for Main NTFPs (1)

| District | Division | No of Respondents Interviewed | Patis | | | | Dhoop | | | | Guchhi | | | | Chilgoza/ Pine Nut | | | | Kala Jeera | | | | | | | |
|-------------------------------------|------------|-------------------------------|----------|------------------|----------|------------------------|----------|------------------|----------|------------------------|----------|------------------|----------|------------------------|--------------------|------------------|----------|------------------------|------------|------------------|----------|------------------------|----------|----------|----------|--|
| | | | Drying | Sorting/ Grading | Bundling | Making another product | Drying | Sorting/ Grading | Bundling | Making another product | Drying | Sorting/ Grading | Bundling | Making another product | Drying | Sorting/ Grading | Bundling | Making another product | Drying | Sorting/ Grading | Bundling | Making another product | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | | | | | | |
| | Bharmour | 20 | 1 | | | | | 2 | | | | | | 1 | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | |
| Chamba | Pangi | 20 | 3 | 1 | | | | 1 | | | | | | | | | | | | 1 | | | | | | |
| | Kinnaur | 40 | 2 | | | | | | | | | 2 | | | | | | | | | | | | | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kullu | 20 | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Territorial | | 341 | 7 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| Kangra | Bajnath | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | 6 | 1 | 1 | | 1 | 1 | | | | 3 | | | | 9 | 1 | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 6 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | |
| Grand Total | | 400 | 7 | 1 | 0 | 1 | 9 | 1 | 1 | 0 | 6 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | |

Source: Livelihood Survey, JICA Study Team (2017)

15.6 Type of Processing for Main NTFPs (2)

| District | Division | No of Respondents Interviewed | Jangli Lehsun | | | | Talis Patra | | | | Total | | | | Total (%) | | | | | | | | | |
|-------------------------------------|------------|-------------------------------|---------------|-----------------|----------|------------------------|-------------|-----------------|----------|------------------------|----------|-----------------|----------|------------------------|-----------|----------|-----------------|-----------|------------------------|-------------|------------|------------|--------------|-------|
| | | | Drying | Sorting/Grading | Bundling | Making another product | Drying | Sorting/Grading | Bundling | Making another product | Drying | Sorting/Grading | Bundling | Making another product | Total | Drying | Sorting/Grading | Bundling | Making another product | Total | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Bharmour | 20 | | | | | | | | | | | | 4 | 0 | 0 | 0 | 4 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | | | | | | | | | | | | 1 | 0 | 0 | 1 | 2 | 50.0 | 0.0 | 0.0 | 50.0 | 100.0 | |
| Chamba | Pangi | 20 | | | | | | | | | | | | 5 | 1 | 0 | 0 | 6 | 83.3 | 16.7 | 0.0 | 0.0 | 100.0 | |
| | Kinnaur | 40 | | | | | | | | | | | | 4 | 0 | 0 | 0 | 4 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Kullu | 20 | | | | | | | | | | | | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | 1 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Karsog | 20 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Mandi | Mandi | 20 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Kotgarh | 20 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Rampur | 21 | | | | | | | | | | | | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 20 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Total of Territorial | | 341 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 0 | 1 | 19 | 89.5 | 5.3 | 0.0 | 5.3 | 100.0 | |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Kullu | Kullu | 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Mandi | Mandi | 3 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Kullu | Parvati | 10 | 1 | | | | | | | | | | | 3 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | 16 | 6 | 1 | 0 | 23 | 69.6 | 26.1 | 4.3 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Solan | Baddi | 2 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Total of Graziers/ Grassland | | 59 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | 1 | 0 | 26 | 73.1 | 23.1 | 3.8 | 0.0 | 100.0 | |
| Grand Total | | 400 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 7 | 1 | 1 | 45 | 80.0 | 15.6 | 2.2 | 2.2 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

15.7 No of Persons Engaged in Processing (1)

| District | Division | No of Respondents | Patis | | | | | | Dhoop | | | | | | Guchhi | | | | | | |
|-------------------------------------|------------|-------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|----------|---------|--|
| | | | Women | | Men | | Children | | Women | | Men | | Children | | Women | | Men | | Children | | |
| | | | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | |
| | Bharmour | 20 | 1 | 1 | | | | | | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | | |
| Chamba | Pangi | 20 | | | | | | | | | | | | | | | | | | | |
| | Kinnaur | 40 | | | 2 | 1 | | | | | | | | | | | | | | | |
| | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | |
| | Kullu | 20 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | |
| | Kullu WL | 20 | | | | | | | | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | |
| | Karsog | 20 | | | 1 | 1 | 1 | 1 | | | | | | | | | | | | | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | | | | | | | | | | 1 | 1 | | | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | |
| Total of Territorial | | 341 | 2 | 1 | 4 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | | 4 | 1 | 3 | 1 | | | | |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 1 | 1 | 3 | 1 | 3 | 3 | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | 4 | 1 | 7 | 1 | | | | 1 | 1 | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 1 | 1 | 3 | 1 | 3 | 3 | 4 | 1 | 7 | 1 | | | | 1 | 1 | | | | |
| Grand Total | | 400 | 3 | 1 | 7 | 1 | 4 | 2 | 8 | 1 | 8 | 1 | | 4 | 1 | 4 | 1 | | | | |

Source: Livelihood Survey, JICA Study Team (2017)

15.7 No of Persons Engaged in Processing (2)

| District | Division | No of Respondents Interviewed | Chilgoza/ Pine Nut | | | | | | Kala Jeera | | | | | | Jangli Lehsun | | | | | |
|-------------------------------------|------------|-------------------------------|--------------------|----------|----------|----------|----------|-----------|------------|----------|----------|----------|----------|----------|---------------|----------|----------|----------|----------|---------|
| | | | Women | | Men | | Children | | Women | | Men | | Children | | Women | | Men | | Children | |
| | | | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | |
| | Bharmour | 20 | | | | | | | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | | |
| Chamba | Pangi | 20 | | | | | | 2 | 1 | 1 | 1 | | | | | 1 | 1 | 1 | 1 | |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | |
| | Kullu | 20 | | | | | | | | | | | | 1 | 1 | 1 | 1 | | | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | |
| | Karsog | 20 | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | | | | | | | | | | | | | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | |
| Total of Territorial | | 341 | | | | | | | | 2 | 1 | 1 | 1 | | | 2 | 1 | 2 | 1 | |
| Kangra | Bainath | 3 | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | 2 | 1 | 2 | 1 | | | |
| Kinnaur | Kinnaur | 21 | 9 | 3 | 3 | 2 | | 8 | 1 | 5 | 1 | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | |
| Solan | Nagarh | 5 | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 9 | 3 | 3 | 2 | | 8 | 1 | 5 | 1 | | | 2 | 1 | 2 | 1 | | | |
| Grand Total | | 400 | 9 | 3 | 3 | 2 | | 10 | 1 | 6 | 1 | | | 4 | 1 | 4 | 1 | | | |

Source: Livelihood Survey, JICA Study Team (2017)

15.7 No of Persons Engaged in Processing (2)

| District | Division | No of Respondents Interviewed | Talis Patra | | | | | | Total | | | | | | | | | | | | |
|-------------------------------------|------------|-------------------------------|-------------|----------|----------|----------|----------|-----------|----------|-----------|----------|-----------|----------|----------|----------|----------|--|--|--|--|--|
| | | | Women | | Men | | Children | | Women | | Men | | Children | | | | | | | | |
| | | | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | Total | Average | | | | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | | | | | | | | | | | | | |
| | Bharmour | 20 | | | | | | | | 4 | 1 | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | 1 | 1 | | | | | | | | | | |
| Chamba | Pangi | 20 | | | | | | | | 5 | 1 | 3 | 1 | | | | | | | | |
| | Kinnaur | 40 | | | | | | | | 2 | 1 | 4 | 1 | | | | | | | | |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | | | | | | | | |
| | Kullu | 20 | | | | | | | | 2 | 1 | 2 | 1 | | | | | | | | |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | | | | | | | | | | | | | |
| | Karsog | 20 | | | | | | | | | | 1 | 1 | 1 | 1 | | | | | | |
| Mandi | Mandi | 20 | | | | | | | | | | | | | | | | | | | |
| | Kotgarh | 20 | | | | | | | | | | | | | | | | | | | |
| | Rampur | 21 | | | | | | | | | | 1 | 1 | | | | | | | | |
| Shimla | Theog | 20 | | | | | | | | | | | | | | | | | | | |
| Total of Territorial | | 341 | | | | | | | | 14 | 1 | 11 | 1 | 1 | 1 | 1 | | | | | |
| Kangra | Bainath | 3 | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | 1 | 1 | 3 | 1 | | 4 | 1 | 8 | 1 | 3 | 3 | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | 21 | 2 | 16 | 1 | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | |
| Solan | Nagarh | 5 | | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | 1 | 1 | 3 | 1 | | 25 | 1 | 24 | 1 | 3 | 3 | | | | | | | | |
| Grand Total | | 400 | 1 | 1 | 3 | 1 | | 39 | 1 | 35 | 1 | 4 | 2 | | | | | | | | |

Source: Livelihood Survey, JICA Study Team (2017)

15.12 Access to NTFP Market Information

| District | Division | No of Respondents Interviewed | JFM | | | | | Non JFM | | | | | Total | | | | | % to Total | | | | | | | |
|-------------------------------------|------------|-------------------------------|------------------------|----------|--|-------------|----------|------------------------|-----------|--|-------------|----------|------------------------|-----------|--|-------------|----------|------------|------------------------|-------------|--|-------------|------------|--------------|-------|
| | | | By Going to the market | SMS | Approaching Institutions/ Agency/ Department | Phone Calls | Internet | By Going to the market | SMS | Approaching Institutions/ Agency/ Department | Phone Calls | Internet | By Going to the market | SMS | Approaching Institutions/ Agency/ Department | Phone Calls | Internet | Total | By Going to the market | SMS | Approaching Institutions/ Agency/ Department | Phone Calls | Internet | Total | |
| Bilaspur | Bilaspur | 60 | 8 | 1 | | | | 5 | 1 | | 1 | | | 13 | 2 | 0 | 1 | 0 | 16 | 81.3 | 12.5 | 0.0 | 6.3 | 0.0 | 100.0 |
| | Bharmour | 20 | 2 | | 1 | | | | | | | | | 2 | 0 | 1 | 0 | 3 | 66.7 | 0.0 | 33.3 | 0.0 | 0.0 | 100.0 | |
| | Chamba WL | 20 | | | | | 2 | | | | | | | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Pangi | 20 | 3 | | | 1 | | | | | | | | 3 | 0 | 0 | 1 | 4 | 75.0 | 0.0 | 0.0 | 25.0 | 0.0 | 100.0 | |
| | Kinnaur | 40 | 6 | 1 | | 2 | 1 | 9 | 3 | | 2 | | | 15 | 4 | 0 | 4 | 1 | 24 | 62.5 | 16.7 | 0.0 | 16.7 | 4.2 | 100.0 |
| Kinnaur | Sarahan WL | 20 | | | | | | 6 | 2 | | | | | 6 | 2 | 0 | 4 | 0 | 12 | 50.0 | 16.7 | 0.0 | 33.3 | 0.0 | 100.0 |
| | Kullu | 20 | 3 | 1 | 1 | | | 3 | 2 | | 1 | | | 6 | 3 | 1 | 1 | 0 | 11 | 54.5 | 27.3 | 9.1 | 9.1 | 0.0 | 100.0 |
| Kullu | Kullu WL | 20 | | | | | | 2 | | | | | | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 5 | 2 | | 3 | | | 5 | 2 | 0 | 3 | 0 | 10 | 50.0 | 20.0 | 0.0 | 30.0 | 0.0 | 100.0 |
| | Karsog | 20 | 2 | | | 3 | | 3 | | 1 | 1 | | | 5 | 0 | 1 | 4 | 0 | 10 | 50.0 | 0.0 | 10.0 | 40.0 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 4 | | | 5 | | 5 | | | | | | 9 | 0 | 0 | 5 | 0 | 14 | 64.3 | 0.0 | 0.0 | 35.7 | 0.0 | 100.0 |
| | Kotgarh | 20 | 2 | | | | | 4 | | | 3 | | | 6 | 0 | 0 | 3 | 0 | 9 | 66.7 | 0.0 | 0.0 | 33.3 | 0.0 | 100.0 |
| | Rampur | 21 | 3 | 1 | | 1 | | 8 | 1 | | | | | 11 | 2 | 0 | 1 | 0 | 14 | 78.6 | 14.3 | 0.0 | 7.1 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 3 | 1 | | | | 2 | 1 | | 1 | | | 5 | 2 | 0 | 1 | 0 | 8 | 62.5 | 25.0 | 0.0 | 12.5 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 36 | 5 | 2 | 12 | 1 | 54 | 12 | 1 | 16 | 0 | 90 | 17 | 3 | 28 | 1 | 139 | 64.7 | 12.2 | 2.2 | 20.1 | 0.7 | 100.0 | |
| Kangra | Bajjnath | 3 | | | | | | 1 | | | 1 | | | 0 | 0 | 0 | 1 | 0 | 0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | | | | 4 | | | 3 | | | 4 | 0 | 0 | 3 | 0 | 7 | 57.1 | 0.0 | 0.0 | 42.9 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 | |
| Kullu | Parvati | 10 | | | | | | 2 | 1 | 2 | 4 | | | 2 | 1 | 2 | 4 | 0 | 9 | 22.2 | 11.1 | 22.2 | 44.4 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | | | | 6 | 3 | | 6 | | | 6 | 3 | 0 | 6 | 0 | 15 | 40.0 | 20.0 | 0.0 | 40.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 | |
| Solan | Baddi | 2 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 12 | 4 | 2 | 14 | 0 | 12 | 4 | 2 | 14 | 0 | 32 | 37.5 | 12.5 | 6.3 | 43.8 | 0.0 | 100.0 | |
| Grand Total | | 400 | 36 | 5 | 2 | 12 | 1 | 66 | 16 | 3 | 30 | 0 | 102 | 21 | 5 | 42 | 1 | 171 | 59.6 | 12.3 | 2.9 | 24.6 | 0.6 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

15.13 Who collects market information

| District | Division | No of Respondents Interviewed | JFM | | Non JFM | | Total | | % to Total | | | |
|-------------------------------------|------------|-------------------------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|-------------|--------------|
| | | | Male Adult | Female Adult | Male Adult | Female Adult | Male Adult | Female Adult | Male Adult | Female Adult | Total | |
| Bilaspur | Bilaspur | 60 | 6 | | 4 | 1 | 10 | 1 | 11 | 90.9 | 9.1 | 100.0 |
| | Bharmour | 20 | 2 | | | | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | | | 2 | | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 2 | | | | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 4 | | 7 | 3 | 11 | 3 | 14 | 78.6 | 21.4 | 100.0 |
| Kinnaur | Sarahan WL | 20 | | | 7 | 2 | 7 | 2 | 9 | 77.8 | 22.2 | 100.0 |
| | Kullu | 20 | 1 | | 1 | 1 | 2 | 1 | 3 | 66.7 | 33.3 | 100.0 |
| Kullu | Kullu WL | 20 | | | 3 | 1 | 3 | 1 | 4 | 75.0 | 25.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 3 | 3 | 3 | 3 | 6 | 50.0 | 50.0 | 100.0 |
| | Karsog | 20 | 3 | | 3 | | 6 | 0 | 6 | 100.0 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 3 | | 1 | 1 | 4 | 1 | 5 | 80.0 | 20.0 | 100.0 |
| | Kotgarh | 20 | | | 5 | | 5 | 0 | 5 | 100.0 | 0.0 | 100.0 |
| | Rampur | 21 | 2 | | 7 | | 9 | 0 | 9 | 100.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 4 | | | 1 | 4 | 1 | 5 | 80.0 | 20.0 | 100.0 |
| Total of Territorial | | 341 | 27 | 0 | 43 | 13 | 70 | 13 | 83 | 84.3 | 15.7 | 100.0 |
| Kangra | Bajjnath | 3 | | | 1 | | 1 | 0 | 1 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | 4 | | 4 | 0 | 4 | 100.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | | | 0 | 0 | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | | 0 | 0 | - | - | 0.0 | |
| Kullu | Parvati | 10 | | | 7 | | 7 | 0 | 7 | 100.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | 12 | | 12 | 0 | 12 | 100.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | | | | | 0 | 0 | 0 | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | | | 0 | 0 | 0 | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | | | 0 | 0 | 0 | - | - | 0.0 |
| Solan | Baddi | 2 | | | | | 0 | 0 | 0 | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 24 | 0 | 24 | 0 | 24 | 100.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 27 | 0 | 67 | 13 | 94 | 13 | 107 | 87.9 | 12.1 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

16.5 Savings, Loan and Other Bank Transactions

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | | | |
|-------------------------------------|------------|-------------------------------|----------------------|---|-----------------------------------|---------------------------------|---|--|----------------------|---|-----------------------------------|---------------------------------|---|---|
| | | | Male | | | | | | Female | | | | | |
| | | | No of Persons Saving | Average Number of Times Saving in a month | Average Amount of Monthly Deposit | Average Amount of Total Savings | No of Persons Used Bank for Other Transactions/Remittance | No of Persons Who used Bnak for Insurance/ Pension | No of Persons Saving | Average Number of Times Saving in a month | Average Amount of Monthly Deposit | Average Amount of Total Savings | No of Persons Used Bank for Other Transactions/Remittance | No of Perosons Who used Bnak for Insurance/ Pension |
| Bilaspur | Bilaspur | 60 | 51 | 1 | 2,659 | 19,039 | 13 | 3 | 21 | 1 | 916 | 9,414 | 1 | 2 |
| | Bharmour | 20 | 16 | 1 | 1,944 | 23,325 | | | 6 | 1 | 1,983 | 23,800 | | |
| Chamba | Chamba WL | 20 | | | | | | | | | | | | |
| | Pang | 20 | 8 | 1 | 1,367 | 10,288 | | | 7 | 3 | 200 | 2,843 | | |
| Kinnaur | Kinnaur | 40 | 22 | 2 | 3,292 | 27,814 | | | 16 | 1 | 857 | 8,756 | | |
| | Sarahan WL | 20 | | | | | | | | | | | | |
| Kullu | Kullu | 20 | 10 | 1 | 1,500 | 34,500 | | | 5 | 1 | 650 | 17,120 | | |
| | Kullu WL | 20 | | | | | | | | | | | | |
| Lahaul & Spiti | Spti(W/L) | 20 | | | | | | | | | | | | |
| Mandi | Karsog | 20 | 12 | 1 | 2,050 | 10,625 | 1 | | 10 | 0 | 1,000 | 6,500 | | |
| | Mandi | 20 | 14 | 1 | 2,154 | 25,850 | 2 | | 6 | 1 | 500 | 6,000 | | 1 |
| | Kotgarh | 20 | 7 | 1 | 580 | 5,871 | 4 | 2 | 5 | 1 | 160 | 2,640 | | |
| Shimla | Rampur | 21 | 9 | 1 | 900 | 14,044 | | | 11 | 1 | 1,382 | 14,539 | | 1 |
| | Theog | 20 | 19 | 1 | 2,692 | 23,132 | 6 | 3 | 18 | 1 | 1,110 | 8,789 | 5 | 3 |
| Total of Territorial | | 341 | 168 | 1 | 2,288 | 20,584 | 26 | 8 | 105 | 1 | 976 | 9,699 | 6 | 7 |
| Kangra | Bajmath | 3 | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | | | | | | |
| Grand Total | | 400 | 168 | 1 | 2,288 | 20,584 | 26 | 8 | 105 | 1 | 976 | 9,699 | 6 | 7 |

Source: Livelihood Survey, JICA Study Team (2017)

16.6 Savings, Loan and Other Bank Transactions

| District | Division | No of Respondents Interviewed | Non JFM | | | | | | | | | | | | Total | | | | | |
|-------------------------------------|------------|-------------------------------|----------------------|---|-----------------------------------|---------------------------------|---|--|----------------------|---|-----------------------------------|---------------------------------|---|---|----------------------|---|-----------------------------------|--|---|---|
| | | | Male | | | | | | Female | | | | | | | | | | | |
| | | | No of Persons Saving | Average Number of Times Saving in a month | Average Amount of Monthly Deposit | Average Amount of Total Savings | No of Persons Used Bank for Other Transactions/Remittance | No of Persons Who used Bnak for Insurance/ Pension | No of Persons Saving | Average Number of Times Saving in a month | Average Amount of Monthly Deposit | Average Amount of Total Savings | No of Persons Used Bank for Other Transactions/Remittance | No of Perosons Who used Bnak for Insurance/ Pension | No of Persons Saving | Average Number of Times Saving in a month | Average Amount of Monthly Deposit | Average Amount of Total Savings in INR | No of Persons Used Bank for Other Transactions/Remittance | No of Perosons Who used Bnak for Insurance/ Pension |
| Bilaspur | Bilaspur | 60 | 29 | 1 | 1,565 | 24,090 | 1 | | 10 | 1 | 800 | 9,350 | | | 111 | 1 | 1,943 | 17,665 | 16 | 5 |
| | Bharmour | 20 | 11 | 1 | 2,575 | 29,382 | | | 9 | 2 | 967 | 10,067 | | 1 | 42 | 1 | 1,928 | 22,138 | | |
| Chamba | Chamba WL | 20 | 23 | 2 | 2,400 | 31,948 | | | 8 | 3 | 550 | 17,550 | | | 31 | 2 | 2,030 | 28,232 | | |
| | Pang | 20 | 8 | 1 | 2,389 | 29,250 | | | 6 | 1 | 1,500 | 15,667 | | | 29 | 2 | 1,750 | 14,834 | | |
| Kinnaur | Kinnaur | 40 | 33 | 1 | 2,367 | 22,491 | | | 26 | 1 | 3,708 | 12,016 | | | 97 | 1 | 2,737 | 18,810 | | |
| | Sarahan WL | 20 | 33 | 2 | 4,011 | 37,315 | 2 | 2 | 17 | 1 | 888 | 9,053 | | | 50 | 2 | 3,178 | 27,706 | 2 | 2 |
| Kullu | Kullu | 20 | 10 | 2 | 1,950 | 23,540 | | | 9 | 1 | 906 | 11,333 | | | 34 | 1 | 1,321 | 22,588 | | |
| | Kullu WL | 20 | 19 | 2 | 2,563 | 55,316 | | | 13 | 1 | 825 | 7,646 | | | 32 | 1 | 1,818 | 35,950 | | |
| Lahaul & Spiti | Spti(W/L) | 20 | 20 | 1 | 2,600 | 21,092 | | | 18 | 1 | 700 | 8,989 | | | 38 | 1 | 1,840 | 15,359 | | |
| Mandi | Karsog | 20 | 14 | 1 | 700 | 6,471 | | 2 | 9 | 1 | 400 | 2,867 | | 2 | 45 | 1 | 932 | 6,864 | 1 | 4 |
| | Mandi | 20 | 10 | 1 | 1,190 | 12,530 | 2 | 1 | 13 | 1 | 1,190 | 4,930 | 1 | 2 | 43 | 1 | 1,388 | 13,013 | 5 | 4 |
| | Kotgarh | 20 | 17 | 2 | 1,595 | 16,188 | | 4 | 11 | 1 | 1,956 | 6,420 | | | 40 | 1 | 1,295 | 9,968 | 4 | 6 |
| Shimla | Rampur | 21 | 9 | 1 | 2,275 | 25,500 | | | 7 | 1 | 1,175 | 16,500 | | | 36 | 1 | 1,337 | 17,537 | | 1 |
| | Theog | 20 | 7 | 1 | 1,667 | 31,571 | | | 8 | 1 | 775 | 8,475 | | | 52 | 1 | 1,683 | 17,048 | 11 | 6 |
| Total of Territorial | | 341 | 243 | 1 | 2,260 | 27,198 | 5 | 9 | 164 | 1 | 1,327 | 9,801 | 2 | 4 | 680 | 1 | 1,872 | 18,666 | 39 | 28 |
| Kangra | Bajmath | 3 | 4 | 1 | 750 | 37,500 | | | 6 | 1 | 750 | 23,667 | | | 10 | 1 | 750 | 29,200 | | |
| Kullu | Kullu | 11 | 22 | 2 | 11,142 | 255,636 | 3 | 2 | 22 | 1 | 2,909 | 32,841 | 3 | | 44 | 1 | 7,204 | 144,239 | 6 | 2 |
| Mandi | Mandi | 3 | 4 | 0 | 8,000 | 33,000 | 1 | | | | 2,500 | 2,500 | | | 5 | | 6,167 | 26,900 | 1 | |
| Kangra | Palampur | 1 | 1 | | | 50,000 | | | | | | 25,000 | | | 2 | | | 37,500 | | |
| Kullu | Parvati | 10 | 15 | 1 | 3,650 | 39,787 | 1 | 1 | 11 | 1 | 1,217 | 24,636 | | | 26 | 1 | 2,607 | 33,377 | 1 | 1 |
| Kinnaur | Kinnaur | 21 | 47 | 2 | 7,416 | 18,123 | 6 | 3 | 32 | 2 | 2,098 | 10,422 | 3 | 3 | 79 | 2 | 5,151 | 15,004 | 9 | 6 |
| Shimla | Theog | 1 | | | | | | | | | | | | | 0 | | | | | |
| Solan | Nalagarh | 5 | 4 | 1 | | 14,250 | | | | | | | | | 4 | 1 | | 14,250 | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | 0 | | | | | |
| Solan | Baddi | 2 | 2 | 1 | 4,000 | 20,000 | | | 1 | | | 5,000 | | | 3 | 1 | 4,000 | 15,000 | | |
| Total of Graziers/ Grassland | | 59 | 99 | 2 | 7,398 | 75,774 | 11 | 6 | 74 | 1 | 2,129 | 20,291 | 6 | 3 | 173 | 2 | 5,110 | 52,041 | 17 | 9 |
| Grand Total | | 400 | 342 | 2 | 3,506 | 41,259 | 29 | 18 | 238 | 1 | 1,552 | 13,062 | 8 | 7 | 853 | 1 | 2,422 | 25,435 | 56 | 37 |

Source: Livelihood Survey, JICA Study Team (2017)

16.7 Reasons for Not Using Bank Accounts So Frequently (1)

| District | Division | No of Respondents Interviewed | Male | | | | | | | Female | | | | | | | Other Family Members | | | | | | | | |
|-----------------------------------|-------------|-------------------------------|-----------------------------|-------------|----------------------------|-------------------------------|------------|-----------|---------------------|------------|-----------------------------|-------------|----------------------------|-------------------------------|------------|-----------|----------------------|-----------|-----------------------------|-------------|----------------------------|-------------------------------|------------|-----------|---------------------|
| | | | No necessity of transaction | Bank is far | Service by bank is limited | No information about services | Low income | Migration | No Women go to bank | Total | No necessity of transaction | Bank is far | Service by bank is limited | No information about services | Low income | Migration | No Women go to bank | Total | No necessity of transaction | Bank is far | Service by bank is limited | No information about services | Low income | Migration | No Women go to bank |
| Bilaspur | Bilaspur | 60 | 23 | 3 | | | 6 | | 32 | 31 | 2 | | | 4 | | 1 | 38 | 3 | | | | 2 | | | 5 |
| Bilaspur | Bharmour | 20 | 6 | 2 | | | | | 8 | 7 | 1 | | | | | | 8 | | | | | | | | 0 |
| Chamba | Chamba WL | 20 | 8 | 1 | | | | | 9 | 6 | 1 | | | | | | 7 | 2 | | | | | | 2 | |
| Chamba | Pangi | 20 | 11 | | | | 1 | | 12 | 10 | | | | 2 | | | 12 | | | | | | | 0 | |
| Kinnaur | Kinnaur | 40 | 14 | | | | 1 | | 15 | 7 | 1 | | | 1 | | | 9 | | | | | | | 0 | |
| Kinnaur | Sarahan WL | 20 | 8 | 1 | | | | | 9 | 8 | 2 | | | | | | 10 | 2 | 1 | | | | | 3 | |
| Kullu | Kullu | 20 | 6 | | | | 1 | | 7 | 7 | 1 | | | | | | 9 | 3 | | | | 1 | | 4 | |
| Kullu | Kullu WL | 20 | 5 | | | | 1 | | 6 | 4 | 1 | | | 1 | | | 5 | 1 | | | | 1 | | 2 | |
| Lahaul & Spiti | Spiti (W/L) | 20 | 7 | | | | | | 7 | 4 | | | | 1 | | | 5 | 1 | | | | | | 1 | |
| Mandi | Karsog | 20 | 9 | | | | 3 | | 12 | 10 | | | | 2 | | | 12 | 1 | | | | | | 1 | |
| Mandi | Mandi | 20 | 3 | 1 | | | 1 | | 5 | 6 | 2 | | | 1 | | | 9 | 1 | | | | | | 1 | |
| Mandi | Kotgarh | 20 | 7 | | | | 1 | | 8 | 7 | | | | | | | 7 | 1 | | | | | | 1 | |
| Shimla | Bharmour | 21 | 6 | 2 | | | | | 8 | 5 | 1 | | | | | | 6 | | | | | | | 0 | |
| Shimla | Theog | 20 | 10 | 3 | | | 3 | | 16 | 9 | 3 | | | 2 | | | 14 | 1 | | | | 1 | | 2 | |
| Total of Territorial | | 341 | 123 | 13 | 0 | 0 | 18 | 0 | 154 | 121 | 14 | 0 | 0 | 15 | 0 | 1 | 151 | 16 | 1 | 0 | 0 | 5 | 0 | 0 | 22 |
| Kangra | Bajjnath | 3 | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| Kullu | Kullu | 11 | 3 | 2 | | | | | | 1 | 1 | 1 | | | | | 3 | | | | | | | | 0 |
| Mandi | Mandi | 3 | 1 | 1 | | | | 7 | | 1 | | | | | | | 1 | | | | | | | | 0 |
| Kangra | Palampur | 1 | 1 | 1 | | | | | | | | | | | | | 4 | | | | | | | | 0 |
| Kullu | Parvati | 10 | 2 | 4 | 1 | | 1 | | | 1 | 3 | | | | | | 4 | | | | 1 | | | 1 | |
| Kinnaur | Kinnaur | 21 | 3 | | | | | | | 2 | | | | | | | 2 | 1 | | | | | | | 1 |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| Solan | Nalagarh | 5 | | | | 2 | | | | | | | | | | | 0 | | | | 1 | | | | 1 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | 0 | | | | | | | | 0 |
| Total of Graziers/Grasland | | 59 | 10 | 8 | 1 | 2 | 1 | 7 | 0 | 5 | 4 | 1 | 0 | 0 | 0 | 0 | 10 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 3 |
| Grand Total | | 400 | 133 | 21 | 1 | 2 | 19 | 7 | 0 | 154 | 126 | 18 | 1 | 0 | 15 | 0 | 161 | 17 | 1 | 0 | 1 | 6 | 0 | 0 | 25 |

Source: Livelihood Survey, JICA Study Team (2017)

16.8 Reasons for Not Using Bank Accounts So Frequently (2)

| District | Division | No of Respondents Interviewed | Total | | | | | | | % to Total | | | | | | | | |
|-----------------------------------|-------------|-------------------------------|-----------------------------|-------------|----------------------------|-------------------------------|------------|-----------|---------------------|------------|-----------------------------|-------------|----------------------------|-------------------------------|-------------|-------------|---------------------|--------------|
| | | | No necessity of transaction | Bank is far | Service by bank is limited | No information about services | Low income | Migration | No Women go to bank | Total | No necessity of transaction | Bank is far | Service by bank is limited | No information about services | Low income | Migration | No Women go to bank | Total |
| Bilaspur | Bilaspur | 60 | 57 | 5 | 0 | 0 | 12 | 0 | 1 | 75 | 76.0 | 6.7 | 0.0 | 0.0 | 16.0 | 0.0 | 1.3 | 100.0 |
| Bilaspur | Bharmour | 20 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 16 | 81.3 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Chamba WL | 20 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 18 | 88.9 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Pangi | 20 | 21 | 0 | 0 | 0 | 3 | 0 | 0 | 24 | 87.5 | 0.0 | 0.0 | 0.0 | 12.5 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 21 | 1 | 0 | 0 | 2 | 0 | 0 | 24 | 87.5 | 4.2 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Sarahan WL | 20 | 18 | 4 | 0 | 0 | 0 | 0 | 0 | 22 | 81.8 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | 16 | 1 | 0 | 0 | 3 | 0 | 0 | 20 | 80.0 | 5.0 | 0.0 | 0.0 | 15.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu WL | 20 | 10 | 0 | 0 | 0 | 3 | 0 | 0 | 13 | 76.9 | 0.0 | 0.0 | 0.0 | 23.1 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti (W/L) | 20 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 13 | 92.3 | 0.0 | 0.0 | 0.0 | 7.7 | 0.0 | 0.0 | 100.0 |
| Mandi | Karsog | 20 | 20 | 0 | 0 | 0 | 5 | 0 | 0 | 25 | 80.0 | 0.0 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | 10 | 3 | 0 | 0 | 2 | 0 | 0 | 15 | 66.7 | 20.0 | 0.0 | 0.0 | 13.3 | 0.0 | 0.0 | 100.0 |
| Mandi | Kotgarh | 20 | 15 | 0 | 0 | 0 | 1 | 0 | 0 | 16 | 93.8 | 0.0 | 0.0 | 0.0 | 6.3 | 0.0 | 0.0 | 100.0 |
| Shimla | Bharmour | 21 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 14 | 78.6 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 20 | 20 | 6 | 0 | 0 | 6 | 0 | 0 | 32 | 62.5 | 18.8 | 0.0 | 0.0 | 18.8 | 0.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 260 | 28 | 0 | 0 | 38 | 0 | 1 | 327 | 79.5 | 8.6 | 0.0 | 0.0 | 11.6 | 0.0 | 0.3 | 100.0 |
| Kangra | Bajjnath | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 8 | 50.0 | 37.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | 2 | 1 | 0 | 0 | 0 | 7 | 0 | 10 | 20.0 | 10.0 | 0.0 | 0.0 | 70.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | 3 | 7 | 1 | 0 | 2 | 0 | 0 | 13 | 25.1 | 53.8 | 7.7 | 0.0 | 15.4 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0.0 |
| Total of Graziers/Grasland | | 59 | 16 | 12 | 2 | 3 | 2 | 7 | 0 | 42 | 38.1 | 28.6 | 4.8 | 7.1 | 4.8 | 16.7 | 0.0 | 100.0 |
| Grand Total | | 400 | 276 | 40 | 2 | 3 | 40 | 7 | 1 | 369 | 74.8 | 10.8 | 0.5 | 0.8 | 10.8 | 1.9 | 0.3 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

16.9 Average Distance to Bank and No of Persons took Loan

| District | Division | No of Respondents Interviewed | Average Distance in Km | | | No of Persons Took Loan between April | | |
|-------------------------------------|------------|-------------------------------|------------------------|-------------|-------------|---------------------------------------|-----------|-----------|
| | | | JFM | Non JFM | Total | JFM | Non JFM | Total |
| Bilaspur | Bilaspur | 60 | 5.7 | 6.9 | 6.1 | | 2 | 2 |
| | Bharmour | 20 | 13.2 | 2.3 | 8.6 | | | 0 |
| Chamba | Chamba WL | 20 | | 19.4 | 19.4 | | | 0 |
| | Pangi | 20 | 17.9 | 25.6 | 22.4 | | | 0 |
| Kinnaur | Kinnaur | 40 | 1.5 | 12.4 | 6.2 | | | 0 |
| | Sarahan WL | 20 | | 35.3 | 35.3 | | | 0 |
| Kullu | Kullu | 20 | 6.6 | 3.1 | 5.5 | | 4 | 4 |
| | Kullu WL | 20 | | 0.6 | 0.6 | | 3 | 3 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | 11.8 | 11.8 | | | 0 |
| Mandi | Karsog | 20 | 1.3 | 3.2 | 2.2 | 5 | 2 | 7 |
| | Mandi | 20 | 8.3 | 14.3 | 11.7 | 3 | 1 | 4 |
| | Kotgarh | 20 | 7.8 | 0.7 | 4.7 | 3 | 1 | 4 |
| Shimla | Rampur | 21 | 15.5 | 26.3 | 20.6 | | | 0 |
| | Theog | 20 | 10.8 | 18.3 | 13.9 | | | 0 |
| Total of Territorial | | 341 | 8.1 | 13.5 | 11.3 | 11 | 13 | 24 |
| Kangra | Bajinath | 3 | | 2.5 | 2.5 | | | 0 |
| Kullu | Kullu | 11 | | 6.5 | 6.5 | | 1 | 1 |
| Mandi | Mandi | 3 | | 5.5 | 5.5 | | | 0 |
| Kangra | Palampur | 1 | | 1.0 | 1.0 | | | 0 |
| Kullu | Parvati | 10 | | 27.5 | 27.5 | | | 0 |
| Kinnaur | Kinnaur | 21 | | 2.7 | 2.7 | | 7 | 7 |
| Shimla | Theog | 1 | | 4.0 | 4.0 | | | 0 |
| Solan | Nalagarh | 5 | | | | | | 0 |
| Shimla | Kotgarh | 2 | | 5.0 | 5.0 | | | 0 |
| Solan | Baddi | 2 | | 4.0 | 4.0 | | | 0 |
| Total of Graziers/ Grassland | | 59 | | 9.2 | 9.2 | 0 | 8 | 8 |
| Grand Total | | 400 | 8.1 | 12.8 | 11.1 | 11 | 21 | 32 |

Source: Livelihood Survey, JICA Study Team (2017)

16.10 No of Persons Took Loan from Various Financial Institutions and Average Amount

| District | Division | No of Respondents Interviewed | JFM | | | | | | Non JFM | | | | | | Total | | | | | | |
|-------------------------------------|------------|-------------------------------|-----------------|----------------|--------------|----------------|--------------|----------------|-----------------|----------------|--------------|----------------|--------------|----------------|-----------------|----------------|--------------|----------------|--------------|----------------|--|
| | | | Government Bank | | Private bank | | Cooperatives | | Government Bank | | Private bank | | Cooperatives | | Government Bank | | Private bank | | Cooperatives | | |
| | | | Counts | Average Amount | Counts | Average Amount | Counts | Average Amount | Counts | Average Amount | Counts | Average Amount | Counts | Average Amount | Counts | Average Amount | Counts | Average Amount | Counts | Average Amount | |
| Bilaspur | Bilaspur | 60 | | | | | | | | 2 | 170,000 | | | | | 2 | - | | | | |
| | Bharmour | 20 | 1 | 25,000 | | | | | | | | | | | 1 | 25,000 | | | | | |
| Chamba | Chamba WL | 20 | | | | | | | | | | | 1 | 45,000 | | | | | 1 | 45,000 | |
| | Pangi | 20 | 1 | 25,000 | | | 2 | 100,000 | | | | | | | 1 | 25,000 | | | 2 | 100,000 | |
| Kinnaur | Kinnaur | 40 | 2 | 300,000 | | | | | 6 | 303,333 | | | 2 | 195,000 | 8 | 302,500 | | | 4 | 222,500 | |
| | Sarahan WL | 20 | | | | | | | 2 | 175,000 | 1 | 750,000 | | | 2 | 175,000 | 1 | 750,000 | | | |
| Kullu | Kullu | 20 | | | | | | | 4 | 360,000 | | | | | 4 | 360,000 | | | | | |
| | Kullu WL | 20 | | | | | | | 2 | 200,000 | 1 | 200,000 | | | 2 | 200,000 | 1 | 200,000 | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 2 | 400,000 | | | | | 2 | 400,000 | | | | | |
| Mandi | Karsog | 20 | 4 | 83,750 | | | 1 | 75,000 | 2 | 225,000 | | | | | 6 | 130,833 | | | 1 | 75,000 | |
| | Mandi | 20 | 3 | 60,000 | | | | | 1 | 400,000 | | | | | 4 | 145,000 | | | | | |
| | Kotgarh | 20 | 1 | 10,000 | 1 | 100,000 | | | 3 | 423,333 | | | 2 | 55,000 | 4 | 320,000 | 1 | 100,000 | 2 | 55,000 | |
| Shimla | Rampur | 21 | | | | | | | 1 | 450,000 | | | | | 1 | 450,000 | | | | | |
| | Theog | 20 | 1 | 200,000 | | | | | 1 | 85,000 | | | | | 2 | 142,500 | | | | | |
| Total of Territorial | | 341 | 13 | 105,769 | 1 | 100,000 | 5 | 168,750 | 26 | 300,192 | 2 | 475,000 | 5 | 109,000 | 39 | 235,385 | 3 | 350,000 | 10 | 135,556 | |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | 5 | 200,000 | | | | | 5 | 200,000 | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | | | | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | | | | | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | 6 | 175,000 | | | 2 | 525,000 | 6 | 175,000 | | | 2 | 525,000 | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | | | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassland | | 59 | | | | | | | 11 | 186,364 | | | 2 | 525,000 | 11 | 186,364 | | | 2 | 525,000 | |
| Grand Total | | 400 | 13 | 105,769 | 1 | 100,000 | 5 | 168,750 | 37 | 266,351 | 2 | 475,000 | 7 | 227,857 | 50 | 224,600 | 3 | 350,000 | 12 | 206,364 | |

Source: Livelihood Survey, JICA Study Team (2017)

16.11 Who Took Loan
All Responses Indicated Male Head of Household/ Male Spouse took loan

| District | Division | No of Respondents Interviewed | Government | Private | Cooperative | Total | No of Households Mortgages Land |
|-------------------------------------|------------|-------------------------------|------------|----------|-------------|-----------|---------------------------------|
| Bilaspur | Bilaspur | 60 | | | | 0 | |
| | Bharmour | 20 | | | | 0 | |
| Chamba | Chamba WL | 20 | | | | 0 | |
| | Pangi | 20 | | | | 0 | |
| Kinnaur | Kinnaur | 40 | 6 | | | 6 | 3 |
| | Sarahan WL | 20 | 2 | | | 2 | 2 |
| Kullu | Kullu | 20 | 3 | | | 3 | 1 |
| | Kullu WL | 20 | 1 | | | 1 | 1 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 1 | | | 1 | 1 |
| Mandi | Karsog | 20 | 5 | | | 5 | 5 |
| | Mandi | 20 | 2 | | | 2 | 1 |
| Shimla | Kotgarh | 20 | 1 | | | 1 | |
| | Rampur | 21 | | | | 0 | |
| | Theog | 20 | 1 | | | 1 | 1 |
| Total of Territorial | | 341 | 22 | 0 | 0 | 22 | 15 |
| Kangra | Bajinath | 3 | | | | 0 | |
| Kullu | Kullu | 11 | 5 | | | 5 | 5 |
| Mandi | Mandi | 3 | | | | 0 | |
| Kangra | Palampur | 1 | | | | 0 | |
| Kullu | Parvati | 10 | | | | 0 | |
| Kinnaur | Kinnaur | 21 | 6 | | | 6 | 6 |
| Shimla | Theog | 1 | | | | 0 | |
| Solan | Nalagarh | 5 | | | | 0 | |
| Shimla | Kotgarh | 2 | | | | 0 | |
| Solan | Baddi | 2 | | | | 0 | |
| Total of Graziers/ Grassland | | 59 | 11 | 0 | 0 | 11 | 11 |
| Grand Total | | 400 | 33 | 0 | 0 | 33 | 26 |

Source: Livelihood Survey, JICA Study Team (2017)

16.12 Purposes of Taking Loan
Government Bank

| District | Division | No of Respondents Interviewed | Purposes of Loan | | | | | % to Total | | | | | | |
|-------------------------------------|------------|-------------------------------|------------------|---|-------------------|----------------|-----------------------|------------|-------------|---|-------------------|----------------|-----------------------|--------------|
| | | | Agriculture | Consumption (School fees, medical fees, ceremonies, festivals and etc.) | Starting Business | Loan Repayment | Bying household items | Total | Agriculture | Consumption (School fees, medical fees, ceremonies, festivals and etc.) | Starting Business | Loan Repayment | Bying household items | Total |
| Bilaspur | Bilaspur | 60 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Bharmour | 20 | 1 | | | | | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Chamba | Chamba WL | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Pangi | 20 | 1 | | | | | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 5 | | | | 1 | 6 | 83.3 | 0.0 | 0.0 | 0.0 | 0.0 | 16.7 |
| | Sarahan WL | 20 | 1 | 1 | | | | 2 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | 2 | 1 | | | 1 | 4 | 50.0 | 25.0 | 0.0 | 25.0 | 0.0 | 100.0 |
| | Kullu WL | 20 | 2 | | | | | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | 1 | | | | | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Karsog | 20 | 3 | 1 | 1 | | | 5 | 60.0 | 20.0 | 20.0 | 0.0 | 0.0 | 100.0 |
| | Mandi | 20 | 3 | | | | | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Kotgarh | 20 | 2 | | 2 | | | 4 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Rampur | 21 | | | 1 | | | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Theog | 20 | 1 | | | | 1 | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 |
| Total of Territorial | | 341 | 22 | 3 | 4 | 1 | 2 | 32 | 68.8 | 9.4 | 12.5 | 3.1 | 6.3 | 100.0 |
| Kangra | Bajinath | 3 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | 5 | | | | | 5 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | 1 | 1 | 1 | | | 3 | 33.3 | 33.3 | 33.3 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 6 | 1 | 1 | 0 | 0 | 8 | 75.0 | 12.5 | 12.5 | 0.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 28 | 4 | 5 | 1 | 2 | 40 | 70.0 | 10.0 | 12.5 | 2.5 | 5.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

16.12 Purposes of Taking Loan
Private Bank

| District | Division | No of Respondents Interviewed | Purposes of Loan | | | | | % to Total | | | | | | |
|-------------------------------------|------------|-------------------------------|------------------|---|-------------------|----------------|-----------------------|------------|-------------|---|-------------------|----------------|-----------------------|--------------|
| | | | Agriculture | Consumption (School fees, medical fees, ceremonies, festivals and etc.) | Starting Business | Loan Repayment | Bying household items | Total | Agriculture | Consumption (School fees, medical fees, ceremonies, festivals and etc.) | Starting Business | Loan Repayment | Bying household items | Total |
| Bilaspur | Bilaspur | 60 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Bharmour | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Chamba | Chamba WL | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Pangi | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Kinnaur | 40 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Sarahan WL | 20 | | | 1 | | | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Kullu WL | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Mandi | Karsog | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Mandi | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Kotgarh | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Shimla | Rampur | 21 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Theog | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Total of Territorial | | 341 | 0 | 0 | 1 | 0 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Bajnath | 3 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 3 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Shimla | Theog | 1 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Grand Total | | 400 | 0 | 0 | 1 | 0 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

16.12 Purposes of Taking Loan
Cooperative Bank

| District | Division | No of Respondents Interviewed | Purposes of Loan | | | | | % to Total | | | | | | |
|-------------------------------------|------------|-------------------------------|------------------|---|-------------------|----------------|-----------------------|------------|-------------|---|-------------------|----------------|-----------------------|--------------|
| | | | Agriculture | Consumption (School fees, medical fees, ceremonies, festivals and etc.) | Starting Business | Loan Repayment | Bying household items | Total | Agriculture | Consumption (School fees, medical fees, ceremonies, festivals and etc.) | Starting Business | Loan Repayment | Bying household items | Total |
| Bilaspur | Bilaspur | 60 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Bharmour | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Chamba | Chamba WL | 20 | | | 1 | | | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Pangi | 20 | 2 | | | | | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 3 | | | | 1 | 4 | 75.0 | 0.0 | 0.0 | 0.0 | 25.0 | 100.0 |
| | Sarahan WL | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Kullu | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kullu | Kullu WL | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Mandi | Karsog | 20 | 1 | | | | | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Mandi | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Kotgarh | 20 | 2 | | | | | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Rampur | 21 | | | | | | 0 | - | - | - | - | - | 0.0 |
| | Theog | 20 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Total of Territorial | | 341 | 8 | 0 | 1 | 0 | 1 | 10 | 80.0 | 0.0 | 10.0 | 0.0 | 10.0 | 100.0 |
| Kangra | Bajnath | 3 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 3 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | 1 | | | | 1 | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 |
| Shimla | Theog | 1 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | | | | | | 0 | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 1 | 0 | 0 | 0 | 1 | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 |
| Grand Total | | 400 | 9 | 0 | 1 | 0 | 2 | 12 | 75.0 | 0.0 | 8.3 | 0.0 | 16.7 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

16.13 Preferred Banking Services

| District | Division | No of Respondents Interviewed | Male | | | | | Female | | | | | Total | | | | | % to Total | | | | |
|-------------------------------------|------------|-------------------------------|-----------|-----------|------------------------|----------|------------|-----------|-----------|------------------------|----------|------------|------------|------------|------------------------|----------|------------|-------------|-------------|------------------------|-------------|--------------|
| | | | Insurance | Pension | Transaction/Remittance | Payment | Total | Insurance | Pension | Transaction/Remittance | Payment | Total | Insurance | Pension | Transaction/Remittance | Payment | Total | Insurance | Pension | Transaction/Remittance | Payment | Total |
| Bilaspur | Bilaspur | 60 | 14 | 13 | 5 | | 32 | 14 | 13 | 5 | | 32 | 28 | 26 | 10 | 0 | 64 | 43.8 | 40.6 | 15.6 | 0.0 | 100.0 |
| Chamba | Bharmour | 20 | 9 | 7 | | | 16 | 8 | 6 | | | 14 | 17 | 13 | 0 | 0 | 30 | 56.7 | 43.3 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | 7 | 5 | | | 12 | 5 | 4 | | | 9 | 12 | 9 | 0 | 0 | 21 | 57.1 | 42.9 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Pangi | 20 | 5 | 4 | | | 9 | 5 | 5 | | | 10 | 10 | 9 | 0 | 0 | 19 | 52.6 | 47.4 | 0.0 | 0.0 | 100.0 |
| | Kinnaur | 40 | 4 | 9 | | | 13 | 4 | 5 | | | 9 | 8 | 14 | 0 | 0 | 22 | 36.4 | 63.6 | 0.0 | 0.0 | 100.0 |
| Kullu | Sarahan WL | 20 | 5 | 3 | 1 | | 9 | 5 | 2 | 1 | | 8 | 10 | 5 | 2 | 0 | 17 | 58.8 | 29.4 | 11.8 | 0.0 | 100.0 |
| | Kullu | 20 | 9 | 6 | | | 15 | 9 | 4 | | | 13 | 18 | 10 | 0 | 0 | 28 | 64.3 | 35.7 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Kullu WL | 20 | 3 | 3 | | | 6 | 3 | 3 | | | 6 | 6 | 6 | 0 | 0 | 12 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 |
| | Spiti(W/L) | 20 | 3 | 5 | | | 8 | 3 | 5 | | | 8 | 6 | 10 | 0 | 0 | 16 | 37.5 | 62.5 | 0.0 | 0.0 | 100.0 |
| Mandi | Karsog | 20 | 6 | 6 | 1 | | 13 | 6 | 4 | 1 | | 11 | 12 | 10 | 2 | 0 | 24 | 50.0 | 41.7 | 8.3 | 0.0 | 100.0 |
| | Mandi | 20 | 3 | 2 | 1 | | 6 | 2 | 1 | | | 4 | 5 | 3 | 2 | 0 | 10 | 50.0 | 30.0 | 20.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 20 | 7 | 4 | | 1 | 12 | 7 | 5 | | 1 | 13 | 14 | 9 | 0 | 2 | 25 | 56.0 | 36.0 | 0.0 | 8.0 | 100.0 |
| | Rampur | 21 | 3 | 1 | | | 4 | 3 | 1 | | | 4 | 6 | 2 | 0 | 0 | 8 | 75.0 | 25.0 | 0.0 | 0.0 | 100.0 |
| | Theog | 20 | 5 | 6 | 1 | 1 | 13 | 5 | 3 | 1 | | 9 | 10 | 9 | 2 | 1 | 22 | 45.5 | 40.9 | 9.1 | 4.5 | 100.0 |
| Total of Territorial | | 341 | 83 | 74 | 9 | 2 | 168 | 79 | 61 | 9 | 1 | 150 | 162 | 135 | 18 | 3 | 318 | 50.9 | 42.5 | 5.7 | 0.9 | 100.0 |
| Kangra | Bajnath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Kullu | Kullu | 11 | 3 | | 1 | 2 | 6 | 2 | | 1 | 2 | 5 | 5 | 0 | 2 | 4 | 11 | 45.5 | 0.0 | 18.2 | 36.4 | 100.0 |
| Mandi | Mandi | 3 | 1 | | | | 1 | 1 | | | | 1 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | 1 | | 1 | | 2 | | | | | 0 | 1 | 0 | 1 | 0 | 2 | 50.0 | 0.0 | 50.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | 4 | | | 4 | 1 | | | | 2 | 1 | 0 | 5 | 0 | 6 | 16.7 | 0.0 | 83.3 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 3 | 2 | 1 | 1 | 7 | 3 | | | | 4 | 6 | 2 | 2 | 1 | 11 | 54.5 | 18.2 | 18.2 | 9.1 | 100.0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | 2 | 2 | | | 4 | 2 | 2 | | | 4 | 4 | 4 | 0 | 0 | 8 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 10 | 4 | 7 | 3 | 24 | 9 | 2 | 3 | 2 | 16 | 19 | 6 | 10 | 5 | 40 | 47.5 | 15.0 | 25.0 | 12.5 | 100.0 |
| Grand Total | | 400 | 93 | 78 | 16 | 5 | 192 | 88 | 63 | 12 | 3 | 166 | 181 | 141 | 28 | 8 | 358 | 50.6 | 39.4 | 7.8 | 2.2 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

16.14 Who Received Training on Micro Finance?

| District | Division | No of Respondents Interviewed | Male Head of Household | Female Spouse | Other Male Members of the Family | Other Female Members of the Family | Total |
|-------------------------------------|------------|-------------------------------|------------------------|---------------|----------------------------------|------------------------------------|-----------|
| Bilaspur | Bilaspur | 60 | | | | | 0 |
| Chamba | Bharmour | 20 | | | | | 0 |
| | Chamba WL | 20 | | | | | 0 |
| Kinnaur | Pangi | 20 | | | | | 0 |
| | Kinnaur | 40 | | | | | 0 |
| Kullu | Sarahan WL | 20 | | | | | 0 |
| | Kullu | 20 | | | | | 0 |
| Lahaul & Spiti | Kullu WL | 20 | | | | | 0 |
| | Spiti(W/L) | 20 | | 1 | | | 1 |
| Mandi | Karsog | 20 | | 3 | | | 3 |
| | Mandi | 20 | | 4 | | | 4 |
| Shimla | Kotgarh | 20 | | 1 | | | 1 |
| | Rampur | 21 | | | | | 0 |
| | Theog | 20 | | | | | 0 |
| Total of Territorial | | 341 | 0 | 9 | 0 | 0 | 9 |
| Kangra | Bajnath | 3 | | | | | 0 |
| Kullu | Kullu | 11 | | 2 | | | 2 |
| Mandi | Mandi | 3 | | 2 | | | 2 |
| Kangra | Palampur | 1 | | 1 | | | 1 |
| Kullu | Parvati | 10 | | 3 | | | 3 |
| Kinnaur | Kinnaur | 21 | | | | | 0 |
| Shimla | Theog | 1 | | | | | 0 |
| Solan | Nalagarh | 5 | | | | | 0 |
| Shimla | Kotgarh | 2 | | | | | 0 |
| Solan | Baddi | 2 | | | | | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 8 | 0 | 0 | 8 |
| Grand Total | | 400 | 0 | 17 | 0 | 0 | 17 |

Source: Livelihood Survey, JICA Study Team (2017)

Only one response on Tpic: 1 SHG formation and management, savings and credit

17. Food Shortage

17.1 No of Households Experienced Food Shortage (April 2016-March 2017)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | | Non JFM | | | | | | | | | Total | | | % to Total | | |
|-----------------------------------|------------|-------------------------------|-----------|-----------|----------|-----------|-----------|------------|------------|-----------|------------|----------|-----------|-----------|------------|------------|-----------|------------|------------|-------------|-------------|--------------|-------|------------|----|-------|
| | | | MHH | | | FHH | | | Total | | | MHH | | | FHH | | | Total | | | Yes | No | Total | Yes | No | Total |
| | | | Yes | No | Total | Yes | No | Total | Yes | No | Total | Yes | No | Total | Yes | No | Total | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 4 | 25 | 1 | 5 | 5 | 30 | 35 | 1 | 15 | 2 | 3 | 15 | 18 | 8 | 45 | 53 | 15.1 | 84.9 | 100.0 | | | | | |
| Chamba | Bharmour | 20 | | 11 | | | 0 | 11 | 11 | | 8 | | 1 | 0 | 9 | 0 | 20 | 20 | 0.0 | 100.0 | 100.0 | | | | | |
| | Chamba WL | 20 | | | | | 0 | 0 | 0 | | 15 | | 1 | 0 | 16 | 0 | 16 | 16 | 0.0 | 100.0 | 100.0 | | | | | |
| | Pangi | 20 | | 6 | | 4 | 0 | 10 | 10 | | 7 | | 3 | 0 | 10 | 0 | 20 | 20 | 0.0 | 100.0 | 100.0 | | | | | |
| Kinnaur | Kinnaur | 40 | 3 | 11 | | 1 | 3 | 12 | 15 | 3 | 16 | | 3 | 3 | 19 | 22 | 6 | 31 | 37 | 16.2 | 83.8 | 100.0 | | | | |
| | Sarahan WL | 20 | | | | | 0 | 0 | 0 | 1 | 15 | 1 | 2 | 15 | 17 | 2 | 15 | 17 | 11.8 | 88.2 | 100.0 | | | | | |
| Kullu | Kullu | 20 | | 10 | | | 0 | 10 | 10 | | 7 | | 3 | 0 | 10 | 0 | 20 | 20 | 0.0 | 100.0 | 100.0 | | | | | |
| | Kullu WL | 20 | | | | | 0 | 0 | 0 | | 17 | | 3 | 0 | 20 | 0 | 20 | 20 | 0.0 | 100.0 | 100.0 | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | 0 | 0 | | 16 | | 2 | 0 | 18 | 0 | 18 | 18 | 0.0 | 100.0 | 100.0 | | | | | |
| Mandi | Karsog | 20 | 2 | 8 | | | 2 | 8 | 10 | 1 | 9 | | 1 | 9 | 10 | 3 | 17 | 20 | 15.0 | 85.0 | 100.0 | | | | | |
| | Mandi | 20 | 1 | 9 | | | 1 | 9 | 10 | | 7 | | 1 | 0 | 8 | 1 | 17 | 18 | 5.6 | 94.4 | 100.0 | | | | | |
| Shimla | Kotgarh | 20 | 2 | 6 | | 2 | 2 | 8 | 10 | | 7 | | 1 | 0 | 8 | 2 | 16 | 18 | 11.1 | 88.9 | 100.0 | | | | | |
| | Rampur | 21 | 1 | 6 | | 3 | 1 | 9 | 10 | 1 | 7 | | 3 | 1 | 10 | 2 | 19 | 21 | 9.5 | 90.5 | 100.0 | | | | | |
| | Theog | 20 | 1 | 6 | | 4 | 1 | 10 | 11 | | 5 | 1 | 3 | 1 | 8 | 2 | 18 | 20 | 10.0 | 90.0 | 100.0 | | | | | |
| Total of Territorial | | 341 | 14 | 98 | 1 | 19 | 15 | 117 | 132 | 7 | 151 | 4 | 24 | 11 | 175 | 186 | 26 | 292 | 318 | 8.2 | 91.8 | 100.0 | | | | |
| Kangra | Bajnath | 3 | | | | | | | | | 1 | | 0 | 1 | 1 | 0 | 1 | 1 | 0.0 | 100.0 | 100.0 | | | | | |
| Kullu | Kullu | 11 | | | | | | | | 1 | 6 | | 1 | 6 | 7 | 1 | 6 | 7 | 14.3 | 85.7 | 100.0 | | | | | |
| Mandi | Mandi | 3 | | | | | | | | 1 | 2 | | 1 | 2 | 3 | 1 | 2 | 3 | 33.3 | 66.7 | 100.0 | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | 1 | | 0 | 1 | 1 | 0 | 1 | 1 | 0.0 | 100.0 | 100.0 | | | | | |
| Kullu | Parvati | 10 | | | | | | | | 4 | 6 | | 4 | 6 | 10 | 4 | 6 | 10 | 40.0 | 60.0 | 100.0 | | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | 5 | 14 | | 1 | 5 | 15 | 5 | 15 | 20 | 25.0 | 75.0 | 100.0 | | | | | |
| Shimla | Theog | 1 | | | | | | | | 1 | | | 1 | 0 | 1 | 1 | 0 | 1 | 100.0 | 0.0 | 100.0 | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | 2 | 3 | | 2 | 3 | 5 | 2 | 3 | 5 | 40.0 | 60.0 | 100.0 | | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | 2 | | | 2 | 0 | 2 | 0 | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 | | | | |
| Solan | Baddi | 2 | | | | | | | | 0 | 2 | | 0 | 2 | 2 | 0 | 2 | 2 | 0.0 | 100.0 | 100.0 | | | | | |
| Total of Graziers/ Grassla | | 59 | | | | | | | | 16 | 35 | 0 | 1 | 16 | 36 | 52 | 16 | 36 | 52 | 30.8 | 69.2 | 100.0 | | | | |
| Grand Total | | 400 | | 98 | 1 | 19 | 15 | 117 | 132 | 23 | 186 | 4 | 25 | 27 | 211 | 238 | 42 | 328 | 370 | 11.4 | 88.6 | 100.0 | | | | |

Source: Livelihood Survey, JICA Study Team (2017)

17.2 Average Number of Days Experienced Food Shortage

| District | Division | No of Respondents Interviewed | JFM | | | Non JFM | | | Total Average |
|-----------------------------------|------------|-------------------------------|------------|-----|------------|------------|-----------|------------|---------------|
| | | | MHH | FHH | Total | MHH | FHH | Total | |
| Bilaspur | Bilaspur | 60 | 150 | | 150 | 90 | 90 | 90 | 130 |
| Chamba | Bharmour | 20 | | | | | | | |
| | Chamba WL | 20 | | | | | | | |
| | Pangi | 20 | | | | | | | |
| Kinnaur | Kinnaur | 40 | 75 | | 75 | 75 | | 75 | 75 |
| | Sarahan WL | 20 | | | | | | | |
| Kullu | Kullu | 20 | | | | | | | |
| | Kullu WL | 20 | | | | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | |
| Mandi | Karsog | 20 | 90 | | 90 | 60 | | 60 | 80 |
| | Mandi | 20 | 90 | | 90 | 90 | | 90 | 90 |
| Shimla | Kotgarh | 20 | 255 | | 255 | | | | 255 |
| | Rampur | 21 | | | | | | 30 | 30 |
| | Theog | 20 | | | | | | 30 | 30 |
| Total of Territorial | | 341 | 139 | | 139 | 78 | 60 | 73 | 113 |
| Kangra | Bajnath | 3 | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | |
| Mandi | Mandi | 3 | | | | 120 | | 120 | 120 |
| Kangra | Palampur | 1 | | | | | | | |
| Kullu | Parvati | 10 | | | | 71 | | 71 | 71 |
| Kinnaur | Kinnaur | 21 | | | | 150 | | 150 | 150 |
| Shimla | Theog | 1 | | | | 180 | | 180 | 180 |
| Solan | Nalagarh | 5 | | | | 180 | | 180 | 180 |
| Shimla | Kotgarh | 2 | | | | 75 | | 75 | 75 |
| Solan | Baddi | 2 | | | | | | | |
| Total of Graziers/ Grassla | | 59 | | | | 117 | | 117 | 117 |
| Grand Total | | 400 | 139 | | 139 | 106 | 60 | 101 | 115 |

Source: Livelihood Survey, JICA Study Team (2017)

17.3 Coping Strategy in the Case of Food Shortage (1)

| District | Division | No of Respondents Interviewed | JFM | | | | | | | | Non JFM | | | | | | | | |
|-----------------------------------|------------|-------------------------------|----------|--------------------------------|----------|-------------------------|----------|--------------------------------|----------|-------------------------|----------|--------------------------------|-----------|-------------------------|----------|--------------------------------|-----------|-------------------------|----------|
| | | | MHH | | | | FHH | | | | MHH | | | | FHH | | | | |
| | | | Purchase | Borrow from Neighbour/Relative | Eat less | Other Unspecified Means | Purchase | Borrow from Neighbour/Relative | Eat less | Other Unspecified Means | Purchase | Borrow from Neighbour/Relative | East Less | Other Unspecified Means | Purchase | Borrow from Neighbour/Relative | East Less | Other Unspecified Means | |
| Bilaspur | Bilaspur | 60 | 4 | 1 | | | | | | | | | 1 | | | | | | |
| Chamba | Bharmour | 20 | | | | | | | | | | | | | | | | | |
| | Chamba WL | 20 | | | | | | | | | | | | | | | | | |
| Kinnaur | Panga | 20 | | | | | | | | | | | | | | | | | |
| | Kinnaur | 40 | | | | | | | | | | | | | | | | | |
| Kullu | Sarahan WL | 20 | | | | | | | | | | | 2 | | | 1 | | | |
| | Kullu | 20 | | | | | | | | | | | 4 | | | | 1 | | |
| Lahaul & Spiti | Kullu WL | 20 | | | | | | | | | | | | | | | | | |
| | Spiti(W/L) | 20 | | | | | | | | | | | | | | | 1 | | |
| Mandi | Karsog | 20 | 1 | 1 | | | | | | | | | 1 | | | | | | |
| | Mandi | 20 | 1 | | | | | | | | | | | | | | 2 | | |
| | Kotgarh | 20 | 2 | | | | | | | | | | | | | | | | |
| Shimla | Rampur | 21 | | 1 | | | | | | | | | 1 | | | 1 | | | |
| | Theog | 20 | | | | | | | | | | | | | | | 1 | | |
| Total of Territorial | | 341 | 8 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 7 | 0 | 4 | 2 | 3 | 0 | 0 |
| Kangra | Bajinath | 3 | | | | | | | | | | | | | | | | | |
| Kullu | Kullu | 11 | | | | | | | | | | | 1 | | | | | | |
| Mandi | Mandi | 3 | | | | | | | | | | | 1 | | | | | | |
| Kangra | Palampur | 1 | | | | | | | | | | | | | | | | | |
| Kullu | Parvati | 10 | | | | | | | | | | | 3 | | 1 | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | 2 | 1 | | | | | |
| Shimla | Theog | 1 | | | | | | | | | | | | | | | | | |
| Solan | Nalagarh | 5 | | | | | | | | | | | | | 1 | | | | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | | | | | | |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 8 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 12 | 1 | 4 | 2 | 3 | 0 | 0 |

Source: Livelihood Survey, JICA Study Team (2017)

17.3 Coping Strategy in the Case of Food Shortage (2)

| District | Division | No of Respondents Interviewed | Total | | | | | % to Total | | | | |
|-----------------------------------|------------|-------------------------------|-----------|--------------------------------|----------|-------------------------|-----------|-------------|--------------------------------|------------|-------------------------|--------------|
| | | | Purchase | Borrow from Neighbour/Relative | Eat less | Other Unspecified Means | Total | Purchase | Borrow from Neighbour/Relative | Eat less | Other Unspecified Means | Total |
| | | | Bilaspur | Bilaspur | 60 | 7 | 2 | 0 | 0 | 9 | 77.8 | 22.2 |
| Chamba | Bharmour | 20 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Chamba WL | 20 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kinnaur | Panga | 20 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Kinnaur | 40 | 0 | 2 | 0 | 1 | 3 | 0.0 | 66.7 | 0.0 | 33.3 | 100.0 |
| Kullu | Sarahan WL | 20 | 0 | 5 | 0 | 0 | 5 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kullu | 20 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Lahaul & Spiti | Kullu WL | 20 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Spiti(W/L) | 20 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Karsog | 20 | 2 | 1 | 0 | 0 | 3 | 66.7 | 33.3 | 0.0 | 0.0 | 100.0 |
| | Mandi | 20 | 1 | 0 | 0 | 2 | 3 | 33.3 | 0.0 | 0.0 | 66.7 | 100.0 |
| | Kotgarh | 20 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Rampur | 21 | 0 | 2 | 0 | 1 | 3 | 0.0 | 66.7 | 0.0 | 33.3 | 100.0 |
| | Theog | 20 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 12 | 14 | 0 | 4 | 30 | 40.0 | 46.7 | 0.0 | 15.3 | 100.0 |
| Kangra | Bajinath | 3 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | 3 | 0 | 1 | 0 | 4 | 75.0 | 0.0 | 25.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | 2 | 1 | 0 | 0 | 3 | 66.7 | 33.3 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 5 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | 0 | 2 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Solan | Baddi | 2 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Total of Graziers/ Grassla | | 59 | 7 | 5 | 1 | 0 | 13 | 53.8 | 38.5 | 7.7 | 0.0 | 100.0 |
| Grand Total | | 400 | 19 | 19 | 1 | 4 | 43 | 44.2 | 44.2 | 2.3 | 9.3 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

18. Health

18.1 No of Households Experienced Food Shortage (April 2016-March 2017)

| District | Division | No of Respondent s Interviewed | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Total | | | | | | |
|------------------------------------|------------|--------------------------------|-----------|-----------|-----------|-----------|---------------------------|------------|------------|-----------|------------|------------|---------------------------|------------|------------|------------|------------|------------|---------------------------|------------|-------------|-------------|-------------|---------------------------|-------------|--------------|
| | | | Headache | Diarrhoea | Fever | Cough | Other unspecified Illness | | Headache | Diarrhoea | Fever | Cough | Other unspecified Illness | | Headache | Diarrhoea | Fever | Cough | Other unspecified Illness | Headache | Diarrhoea | Fever | Cough | Other unspecified Illness | Total | |
| Bilaspur | Bilaspur | 60 | 7 | 2 | 7 | 6 | 17 | 39 | 6 | 5 | 11 | 8 | 4 | 34 | 13 | 7 | 18 | 14 | 21 | 73 | 17.8 | 9.6 | 24.7 | 19.2 | 28.8 | 100.0 |
| | Bharmour | 20 | 8 | 5 | 9 | 8 | 3 | 33 | 8 | 4 | 8 | 6 | 3 | 29 | 16 | 9 | 17 | 14 | 6 | 62 | 25.8 | 14.5 | 27.4 | 22.6 | 9.7 | 100.0 |
| Chamba | Chamba WL | 20 | | | | | | 0 | 15 | 11 | 18 | 17 | 3 | 64 | 15 | 11 | 18 | 17 | 3 | 64 | 23.4 | 17.2 | 28.1 | 26.6 | 4.7 | 100.0 |
| | Pangi | 20 | 6 | 2 | 6 | 5 | 2 | 21 | 9 | 5 | 9 | 5 | 1 | 29 | 15 | 7 | 15 | 10 | 3 | 50 | 30.0 | 14.0 | 30.0 | 20.0 | 6.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 10 | 7 | 16 | 9 | 4 | 46 | 17 | 10 | 20 | 16 | 5 | 68 | 27 | 17 | 36 | 25 | 9 | 114 | 25.7 | 14.9 | 31.6 | 21.9 | 7.9 | 100.0 |
| | Sarahan WL | 20 | | | | | | 0 | 11 | 3 | 13 | 8 | 4 | 39 | 11 | 3 | 13 | 8 | 4 | 39 | 28.2 | 7.7 | 33.3 | 20.5 | 10.3 | 100.0 |
| Kullu | Kullu | 20 | 5 | 6 | 9 | 6 | 3 | 29 | 6 | 5 | 9 | 6 | 1 | 27 | 11 | 11 | 18 | 12 | 4 | 56 | 19.6 | 19.6 | 32.1 | 21.4 | 7.1 | 100.0 |
| | Kullu WL | 20 | | | | | | 0 | 15 | 11 | 17 | 13 | 2 | 58 | 15 | 11 | 17 | 13 | 2 | 58 | 25.9 | 19.0 | 29.3 | 22.4 | 3.4 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | 13 | 7 | 16 | 11 | 1 | 48 | 13 | 7 | 16 | 11 | 1 | 48 | 27.1 | 14.6 | 33.3 | 22.9 | 2.1 | 100.0 |
| | Karsog | 20 | 2 | | 4 | 4 | 3 | 13 | 2 | 2 | 5 | 2 | 2 | 13 | 4 | 2 | 9 | 6 | 5 | 26 | 15.4 | 7.7 | 34.6 | 23.1 | 19.2 | 100.0 |
| Mandi | Mandi | 20 | | 1 | 3 | 5 | 3 | 12 | 4 | 3 | 7 | 7 | 2 | 23 | 4 | 4 | 10 | 12 | 5 | 35 | 11.4 | 11.4 | 28.6 | 34.3 | 14.3 | 100.0 |
| | Kotgarh | 20 | 4 | 3 | 4 | 5 | 4 | 20 | 4 | 4 | 5 | 5 | 5 | 23 | 8 | 7 | 9 | 10 | 9 | 43 | 18.6 | 16.3 | 20.9 | 23.3 | 20.9 | 100.0 |
| Shimla | Rampur | 21 | 6 | 4 | 7 | 4 | 1 | 22 | 10 | 7 | 11 | 7 | | 35 | 16 | 11 | 18 | 11 | 1 | 57 | 28.1 | 19.3 | 31.6 | 19.3 | 1.8 | 100.0 |
| | Theog | 20 | 3 | 1 | 3 | 2 | 5 | 14 | 3 | 2 | 5 | 2 | 4 | 16 | 6 | 3 | 8 | 4 | 9 | 30 | 20.0 | 10.0 | 26.7 | 13.3 | 30.0 | 100.0 |
| Total of Territorial | | 341 | 51 | 31 | 68 | 54 | 45 | 249 | 123 | 79 | 154 | 113 | 37 | 506 | 174 | 110 | 222 | 167 | 82 | 755 | 23.0 | 14.6 | 29.4 | 22.1 | 10.9 | 100.0 |
| Kangra | Baijnath | 3 | | | | | | 0 | 3 | 2 | 3 | 2 | | 8 | 3 | 0 | 3 | 2 | 0 | 8 | 37.5 | 0.0 | 37.5 | 25.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | | | | 0 | 10 | 1 | 8 | 7 | 2 | 28 | 10 | 1 | 8 | 7 | 2 | 28 | 35.7 | 3.6 | 28.6 | 25.0 | 7.1 | 100.0 |
| Mandi | Mandi | 3 | | | | | | 0 | 1 | 1 | 1 | 1 | | 3 | 1 | 0 | 1 | 1 | 0 | 3 | 33.3 | 0.0 | 33.3 | 33.3 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | | | | | | 0 | 1 | 1 | 1 | 1 | | 3 | 1 | 0 | 1 | 1 | 0 | 3 | 33.3 | 0.0 | 33.3 | 33.3 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | | | | | 0 | 9 | 3 | 9 | 5 | 2 | 25 | 9 | 0 | 9 | 5 | 2 | 25 | 36.0 | 0.0 | 36.0 | 20.0 | 8.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | | | | 0 | 9 | 1 | 8 | 6 | 4 | 28 | 9 | 1 | 8 | 6 | 4 | 28 | 32.1 | 3.6 | 28.6 | 21.4 | 14.3 | 100.0 |
| Shimla | Theog | 1 | | | | | | 0 | 1 | 1 | 1 | 1 | | 5 | 1 | 1 | 1 | 1 | 1 | 5 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 100.0 |
| Solan | Nalagrh | 5 | | | | | | 0 | 2 | 1 | 4 | 3 | 1 | 11 | 2 | 1 | 4 | 3 | 1 | 11 | 18.2 | 9.1 | 36.4 | 27.3 | 9.1 | 100.0 |
| Shimla | Kotgarh | 2 | | | | | | 0 | 2 | 2 | 2 | 2 | | 9 | 2 | 2 | 2 | 1 | 9 | 22.2 | 22.2 | 22.2 | 22.2 | 11.1 | 100.0 | |
| Solan | Baddi | 2 | | | | | | 0 | 1 | 1 | 2 | 2 | | 3 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Total of Graziers Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 6 | 37 | 28 | 13 | 122 | 38 | 6 | 37 | 28 | 13 | 122 | 31.1 | 4.9 | 30.3 | 23.0 | 10.7 | 100.0 |
| Grand Total | | 400 | 51 | 31 | 68 | 54 | 45 | 249 | 161 | 85 | 191 | 141 | 50 | 628 | 212 | 116 | 259 | 195 | 95 | 877 | 24.2 | 13.2 | 29.5 | 22.2 | 10.8 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

18.2 Distance to the nearest Health centre/ medical facilities in Km

| District | Division | No of Respondent s Interviewed | JFM | | | Non JFM | | | Total | | |
|------------------------------------|------------|--------------------------------|-------------|------------|------------|-------------|------------|------------|-------------|------------|------------|
| | | | Max | Min | Ave | Max | Min | Ave | Max | Min | Ave |
| Bilaspur | Bilaspur | 60 | 25 | 0.5 | 4.7 | 10.0 | 0.1 | 4.0 | 25.0 | 0.1 | 4.5 |
| | Bharmour | 20 | 3.0 | 1.0 | 1.6 | 3.0 | 1.0 | 2.1 | 3.0 | 1.0 | 1.8 |
| Chamba | Chamba WL | 20 | | | | 1.5 | 0.1 | 0.4 | 1.5 | 0.1 | 0.4 |
| | Pangi | 20 | 3.0 | 0.3 | 1.3 | 6.0 | 2.0 | 3.2 | 6.0 | 0.3 | 2.2 |
| Kinnaur | Kinnaur | 40 | 10.0 | 0.1 | 1.4 | 10.0 | 0.1 | 3.0 | 10.0 | 0.1 | 2.2 |
| | Sarahan WL | 20 | | | | 20.0 | 0.1 | 1.4 | 20.0 | 0.1 | 1.4 |
| Kullu | Kullu | 20 | 8.0 | 5.0 | 5.7 | 6.0 | 5.0 | 5.3 | 8.0 | 5.0 | 5.5 |
| | Kullu WL | 20 | | | | 5.0 | 0.1 | 1.6 | 5.0 | 0.1 | 1.6 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 1.0 | 0.1 | 0.3 | 1.0 | 0.1 | 0.3 |
| | Karsog | 20 | 3.0 | 1.0 | 1.8 | 4.0 | 1.5 | 3.1 | 4.0 | 1.0 | 2.4 |
| Mandi | Mandi | 20 | 10.0 | 5.0 | 7.8 | 12.0 | 1.0 | 6.8 | 12.0 | 1.0 | 7.3 |
| | Kotgarh | 20 | 20.0 | 5.0 | 8.6 | 10.0 | 3.0 | 5.9 | 20.0 | 3.0 | 7.4 |
| Shimla | Rampur | 21 | 1.0 | 0.4 | 0.8 | 25.0 | 5.0 | 9.2 | 25.0 | 0.4 | 5.2 |
| | Theog | 20 | 36.0 | 0.2 | 6.0 | 1.0 | 0.0 | 0.5 | 36.0 | 0.0 | 3.5 |
| Total of Territorial | | 341 | 36.0 | 0.0 | 4.0 | 25.0 | 0.0 | 2.9 | 36.0 | 0.0 | 3.4 |
| Kangra | Baijnath | 3 | | | | 6.0 | 1.0 | 2.7 | 6.0 | 1.0 | 2.7 |
| Kullu | Kullu | 11 | | | | 1.0 | 5.2 | 20.0 | 1.0 | 5.2 | 5.2 |
| Mandi | Mandi | 3 | | | | 9.0 | 2.0 | 4.3 | 9.0 | 2.0 | 4.3 |
| Kangra | Palampur | 1 | | | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Kullu | Parvati | 10 | | | | 35.0 | 0.1 | 13.4 | 35.0 | 0.1 | 13.4 |
| Kinnaur | Kinnaur | 21 | | | | 1.5 | 0.1 | 0.8 | 1.5 | 0.1 | 0.8 |
| Shimla | Theog | 1 | | | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Solan | Nalagrh | 5 | | | | 6.0 | 2.0 | 2.8 | 6.0 | 2.0 | 2.8 |
| Shimla | Kotgarh | 2 | | | | 2.0 | 1.0 | 1.5 | 2.0 | 1.0 | 1.5 |
| Solan | Baddi | 2 | | | | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Total of Graziers Grassland | | 59 | 0 | 0 | 0 | 35.0 | 0.1 | 4.5 | 35.0 | 0.1 | 4.5 |
| Grand Total | | 400 | 36.0 | 0.0 | 4.0 | 25.0 | 0.0 | 3.3 | 36.0 | 0.0 | 3.8 |

Source: Livelihood Survey, JICA Study Team (2017)

18.3 Means to reach the Health Centre/ Medical Facilities

| District | Division | No of Respondents Interviewed | JFM | | | | | Non JFM | | | | | Total | | | | | % to Total | | | | |
|-------------------------------------|------------|-------------------------------|------------|------------|----------------|--|------------|------------|------------|----------------|--|------------|------------|------------|----------------|--|------------|-------------|------------|----------------|--|--------------|
| | | | On foot | Motorcycle | Family Vehicle | Public transportation or other means of transportain | Total | On foot | Motorcycle | Family Vehicle | Public transportation or other means of transportain | Total | On foot | Motorcycle | Family Vehicle | Public transportation or other means of transportain | Total | On foot | Motorcycle | Family Vehicle | Public transportation or other means of transportain | Total |
| | | | | | | | | | | | | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 16 | | 4 | 19 | 39 | 14 | | | 4 | 20 | 30 | 2 | 4 | 23 | 59 | 50.8 | 3.4 | 6.8 | 39.0 | 100.0 |
| | Bharmour | 20 | 11 | | | 11 | 9 | | | | 9 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Chamba WL | 20 | | | | 0 | 20 | | | | 20 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Pang | 20 | 10 | | | 1 | 11 | 10 | | | 10 | 20 | 0 | 0 | 1 | 21 | 95.2 | 0.0 | 0.0 | 4.8 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 16 | | | 16 | 17 | | 2 | 2 | 21 | 33 | 16 | 2 | 2 | 37 | 89.2 | 0.0 | 5.4 | 5.4 | 100.0 | |
| | Sarahan WL | 20 | | | | 0 | 17 | | | | 17 | 17 | 0 | 0 | 0 | 17 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | 10 | | | 10 | 4 | | 1 | 5 | 10 | 14 | 10 | 1 | 5 | 20 | 70.0 | 0.0 | 5.0 | 25.0 | 100.0 | |
| | Kullu WL | 20 | | | | 0 | 18 | | 1 | 1 | 20 | 18 | 0 | 1 | 1 | 20 | 90.0 | 0.0 | 5.0 | 5.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | 20 | | | | 20 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Mandi | Karsog | 20 | 9 | | | 9 | 5 | | 1 | 4 | 10 | 14 | 0 | 1 | 4 | 19 | 73.7 | 0.0 | 5.3 | 21.1 | 100.0 | |
| | Mandi | 20 | 6 | | 4 | 10 | 10 | | | | 10 | 16 | 0 | 0 | 4 | 20 | 80.0 | 0.0 | 0.0 | 20.0 | 100.0 | |
| | Kotgarh | 20 | 5 | | 5 | 10 | 2 | | 1 | 7 | 10 | 7 | 1 | 0 | 12 | 20 | 35.0 | 5.0 | 0.0 | 60.0 | 100.0 | |
| Shimla | Rampur | 21 | 10 | | | 10 | 11 | | | | 11 | 21 | 0 | 0 | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Theog | 20 | 7 | 1 | 3 | 11 | 9 | | | | 9 | 16 | 1 | 0 | 3 | 20 | 80.0 | 5.0 | 0.0 | 15.0 | 100.0 | |
| Total of Territorial | | 341 | 100 | 1 | 4 | 32 | 137 | 166 | 3 | 5 | 23 | 197 | 266 | 4 | 9 | 55 | 334 | 79.6 | 1.2 | 2.7 | 16.5 | 100.0 |
| Kangra | Bainath | 3 | | | | 0 | 2 | | | 1 | 3 | 2 | 0 | 0 | 1 | 3 | 66.7 | 0.0 | 0.0 | 33.3 | 100.0 | |
| Kullu | Kullu | 11 | | | | 0 | 7 | | 1 | 3 | 11 | 7 | 0 | 1 | 3 | 11 | 63.6 | 0.0 | 9.1 | 27.3 | 100.0 | |
| Mandi | Mandi | 3 | | | | 0 | 2 | | | 1 | 3 | 2 | 0 | 0 | 1 | 3 | 66.7 | 0.0 | 0.0 | 33.3 | 100.0 | |
| Kangra | Palampur | 1 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Parvati | 10 | | | | 0 | 6 | | | 4 | 10 | 6 | 0 | 0 | 4 | 10 | 60.0 | 0.0 | 0.0 | 40.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 20 | | | 1 | 21 | 20 | 0 | 0 | 1 | 21 | 95.2 | 0.0 | 0.0 | 4.8 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | 1 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | 0 | 5 | | | | 5 | 5 | 0 | 0 | 0 | 5 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | 1 | | | 1 | 2 | 1 | 0 | 0 | 1 | 2 | 50.0 | 0.0 | 0.0 | 50.0 | 100.0 | |
| Solan | Baddi | 2 | | | | 0 | 0 | | | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 1 | 13 | 59 | 45 | 0 | 1 | 13 | 59 | 76.3 | 0.0 | 1.7 | 22.0 | 100.0 |
| Grand Total | | 400 | 100 | 1 | 4 | 32 | 137 | 211 | 3 | 6 | 36 | 256 | 311 | 4 | 10 | 68 | 393 | 79.1 | 1.0 | 2.5 | 17.3 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

18.4 Who will accompany the female family members to the Health Centre/ Medical Facilities

| District | Division | No of Respondents Interviewed | JFM | | | | | Non JFM | | | | | Total | | | | | % to Total | | | | |
|-------------------------------------|------------|-------------------------------|--------------------------|----------------------------|----------------|----------------------|------------|--------------------------|----------------------------|----------------|----------------------|------------|--------------------------|----------------------------|----------------|----------------------|-------------|--------------------------|----------------------------|----------------|----------------------|--------------|
| | | | Male Adult of the Family | Female Adult of the Family | Go by her self | Others - Unspecified | Total | Male Adult of the Family | Female Adult of the Family | Go by her self | Others - Unspecified | Total | Male Adult of the Family | Female Adult of the Family | Go by her self | Others - Unspecified | Total | Male Adult of the Family | Female Adult of the Family | Go by her self | Others - Unspecified | Total |
| | | | | | | | | | | | | | | | | | | | | | | |
| Bilaspur | Bilaspur | 60 | 30 | | | | 30 | 19 | | | | 19 | 49 | 0 | 0 | 49 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Bharmour | 20 | 10 | | 1 | 11 | 9 | | | | 9 | 19 | 0 | 1 | 0 | 20 | 95.0 | 0.0 | 5.0 | 0.0 | 100.0 | |
| | Chamba WL | 20 | | | | 0 | 19 | | | | 19 | 19 | 0 | 0 | 0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Pang | 20 | 8 | | | 8 | 9 | | | | 9 | 17 | 0 | 0 | 0 | 17 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 17 | 1 | | 18 | 21 | | | | 21 | 38 | 1 | 0 | 39 | 97.4 | 2.6 | 0.0 | 0.0 | 100.0 | | |
| | Sarahan WL | 20 | | | | 0 | 15 | | | | 15 | 15 | 0 | 0 | 0 | 15 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | 9 | | | 9 | 9 | | | | 9 | 18 | 0 | 0 | 0 | 18 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | 0 | 19 | | | | 19 | 19 | 0 | 0 | 0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | 14 | | | | 14 | 14 | 0 | 0 | 0 | 14 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Mandi | Karsog | 20 | 9 | | 1 | 10 | 9 | | | | 9 | 18 | 0 | 1 | 0 | 19 | 94.7 | 0.0 | 5.3 | 0.0 | 100.0 | |
| | Mandi | 20 | 10 | | | 10 | 10 | | | | 10 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | 20 | 8 | 1 | | 9 | 10 | | | | 10 | 18 | 1 | 0 | 0 | 19 | 94.7 | 5.3 | 0.0 | 0.0 | 100.0 | |
| Shimla | Rampur | 21 | 10 | | | 10 | 11 | | | | 11 | 21 | 0 | 0 | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Theog | 20 | 10 | 1 | | 11 | 7 | 2 | | | 16 | 17 | 8 | 2 | 0 | 27 | 63.0 | 29.6 | 7.4 | 0.0 | 100.0 | |
| Total of Territorial | | 341 | 121 | 3 | 2 | 0 | 126 | 181 | 7 | 2 | 0 | 190 | 302 | 10 | 4 | 0 | 316 | 95.6 | 3.2 | 1.3 | 0.0 | 100.0 |
| Kangra | Bainath | 3 | | | | 0 | 2 | | 1 | | 3 | 2 | 1 | 0 | 0 | 3 | 66.7 | 33.3 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | 0 | 10 | | 1 | | 11 | 10 | 1 | 0 | 0 | 11 | 90.9 | 9.1 | 0.0 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | 0 | 2 | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | 0 | 1 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | 0 | 10 | | | | 10 | 10 | 0 | 0 | 0 | 10 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 15 | 1 | 5 | | 21 | 15 | 5 | 0 | 21 | 71.4 | 4.8 | 23.8 | 0.0 | 100.0 | | |
| Shimla | Theog | 1 | | | | 0 | 1 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | 0 | 5 | | | | 5 | 5 | 0 | 0 | 0 | 5 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | 2 | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | 0 | 1 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 49 | 3 | 5 | 0 | 57 | 49 | 3 | 5 | 0 | 57 | 86.0 | 5.3 | 8.8 | 0.0 | 100.0 | |
| Grand Total | | 400 | 121 | 3 | 2 | 0 | 126 | 230 | 10 | 7 | 0 | 247 | 351 | 13 | 9 | 0 | 373 | 94.1 | 3.5 | 2.4 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

19. Sanitation
19.1 Availability of Bathing Space at Home

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Total | | | % to Total | | |
|-----------------------------------|------------|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|--------------|
| | | | Have | Don't Have | Total | Have | Don't Have | Total | Have | Don't Have | Total | Have | Don't Have | Total |
| Bilaspur | Bilaspur | 60 | 34 | 3 | 37 | 18 | 2 | 20 | 52 | 5 | 57 | 91.2 | 8.8 | 100.0 |
| | Bharmour | 20 | 6 | 5 | 11 | 6 | 3 | 9 | 12 | 8 | 20 | 60.0 | 40.0 | 100.0 |
| Chamba | Chamba WL | 20 | | | 0 | 16 | 4 | 20 | 16 | 4 | 20 | 80.0 | 20.0 | 100.0 |
| | Panga | 20 | 8 | 2 | 10 | 9 | 1 | 10 | 17 | 3 | 20 | 85.0 | 15.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 17 | 2 | 19 | 21 | | 21 | 38 | 2 | 40 | 95.0 | 5.0 | 100.0 |
| | Sarahan WL | 20 | | | 0 | 20 | | 20 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | 7 | 2 | 9 | 10 | | 10 | 17 | 2 | 19 | 89.5 | 10.5 | 100.0 |
| | Kullu WL | 20 | | | 0 | 17 | 3 | 20 | 17 | 3 | 20 | 85.0 | 15.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | 14 | 6 | 20 | 14 | 6 | 20 | 70.0 | 30.0 | 100.0 |
| Mandi | Karsog | 20 | 9 | 1 | 10 | 8 | 2 | 10 | 17 | 3 | 20 | 85.0 | 15.0 | 100.0 |
| | Mandi | 20 | 10 | | 10 | 8 | 1 | 9 | 18 | 1 | 19 | 94.7 | 5.3 | 100.0 |
| | Kotgarh | 20 | 6 | 4 | 10 | 9 | 1 | 10 | 15 | 5 | 20 | 75.0 | 25.0 | 100.0 |
| Shimla | Rampur | 21 | 7 | 2 | 9 | 9 | 2 | 11 | 16 | 4 | 20 | 80.0 | 20.0 | 100.0 |
| | Theog | 20 | 11 | | 11 | 9 | | 9 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 115 | 21 | 136 | 174 | 25 | 199 | 289 | 46 | 335 | 86.3 | 13.7 | 100.0 |
| Kangra | Bajinath | 3 | | | 0 | 3 | | 3 | 3 | 0 | 3 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | 0 | 11 | | 11 | 11 | 0 | 11 | 100.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | 0 | 2 | 1 | 3 | 2 | 1 | 3 | 66.7 | 33.3 | 100.0 |
| Kangra | Palampur | 1 | | | 0 | 1 | | 1 | 1 | 0 | 1 | 100.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | | 0 | 7 | 3 | 10 | 7 | 3 | 10 | 70.0 | 30.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | 0 | 19 | 2 | 21 | 19 | 2 | 21 | 90.5 | 9.5 | 100.0 |
| Shimla | Theog | 1 | | | 0 | 1 | | 1 | 0 | 1 | 1 | 0.0 | 100.0 | 100.0 |
| Solan | Nagarh | 5 | | | 0 | | 5 | 5 | 5 | 0 | 5 | 0.0 | 100.0 | 100.0 |
| Shimla | Kotgarh | 2 | | | 0 | | 2 | 2 | 0 | 2 | 2 | 0.0 | 100.0 | 100.0 |
| Solan | Baddi | 2 | | | 0 | 2 | | 2 | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 45 | 14 | 59 | 45 | 14 | 59 | 76.3 | 23.7 | 100.0 |
| Grand Total | | 400 | 115 | 21 | 136 | 219 | 39 | 258 | 334 | 60 | 394 | 84.8 | 15.2 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

19.2 Do all members of your family use the bathing space at home?

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Total | | | % to Total | | |
|-----------------------------------|------------|-----------------------------------|------------|----------|------------|------------|-----------|------------|------------|-----------|------------|-------------|-------------|--------------|
| | | | Yes | No | Total | Yes | No | Total | Yes | No | Total | Yes | No | Total |
| Bilaspur | Bilaspur | 60 | 36 | 1 | 37 | 18 | | 18 | 54 | 1 | 55 | 98.2 | 1.8 | 100.0 |
| | Bharmour | 20 | 7 | 2 | 9 | 6 | 1 | 7 | 13 | 3 | 16 | 81.3 | 18.8 | 100.0 |
| Chamba | Chamba WL | 20 | | | 0 | 16 | 1 | 17 | 16 | 1 | 17 | 94.1 | 5.9 | 100.0 |
| | Panga | 20 | 8 | | 8 | 9 | | 9 | 17 | 0 | 17 | 100.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 16 | | 16 | 21 | | 21 | 37 | 0 | 37 | 100.0 | 0.0 | 100.0 |
| | Sarahan WL | 20 | | | 0 | 19 | | 19 | 19 | 0 | 19 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | 7 | 2 | 9 | 10 | | 10 | 17 | 2 | 19 | 89.5 | 10.5 | 100.0 |
| | Kullu WL | 20 | | | 0 | 18 | 1 | 19 | 18 | 1 | 19 | 94.7 | 5.3 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | 14 | 3 | 17 | 14 | 3 | 17 | 82.4 | 17.6 | 100.0 |
| Mandi | Karsog | 20 | 10 | | 10 | 8 | 1 | 9 | 18 | 1 | 19 | 94.7 | 5.3 | 100.0 |
| | Mandi | 20 | 10 | | 10 | 9 | 1 | 10 | 19 | 1 | 20 | 95.0 | 5.0 | 100.0 |
| | Kotgarh | 20 | 6 | 2 | 8 | 9 | 1 | 10 | 15 | 3 | 18 | 83.3 | 16.7 | 100.0 |
| Shimla | Rampur | 21 | 9 | 1 | 10 | 10 | | 10 | 19 | 1 | 20 | 95.0 | 5.0 | 100.0 |
| | Theog | 20 | 11 | | 11 | 9 | | 9 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 120 | 8 | 128 | 176 | 9 | 185 | 296 | 17 | 313 | 94.6 | 5.4 | 100.0 |
| Kangra | Bajinath | 3 | | | 0 | 3 | | 3 | 3 | 0 | 3 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | 0 | 11 | | 11 | 11 | 0 | 11 | 100.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | 0 | 2 | | 2 | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | | | 0 | 1 | | 1 | 1 | 0 | 1 | 100.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | | 0 | 8 | 2 | 10 | 8 | 2 | 10 | 80.0 | 20.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | 0 | 20 | 1 | 21 | 20 | 1 | 21 | 95.2 | 4.8 | 100.0 |
| Shimla | Theog | 1 | | | 0 | 1 | | 1 | 0 | 1 | 1 | 0.0 | 100.0 | 100.0 |
| Solan | Nagarh | 5 | | | 0 | | 2 | 2 | 0 | 2 | 2 | 0.0 | 100.0 | 100.0 |
| Shimla | Kotgarh | 2 | | | 0 | | 1 | 1 | 0 | 1 | 1 | 0.0 | 100.0 | 100.0 |
| Solan | Baddi | 2 | | | 0 | 2 | | 2 | 2 | 0 | 2 | 100.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 47 | 7 | 54 | 47 | 7 | 54 | 87.0 | 13.0 | 100.0 |
| Grand Total | | 400 | 120 | 8 | 128 | 223 | 16 | 239 | 343 | 24 | 367 | 93.5 | 6.5 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

19.3 Where do your family members go to bathe?

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | % to Total | | | | | |
|-----------------------------------|------------|-----------------------------------|----------|-------------|----------|-------------|-----------|----------|-------------|----------|-------------|-----------|----------|-------------|-----------|-------------|-------------|------------|-------------|-------------|--------------|--------------|-------|
| | | | River | Common Well | Spring | Unspecified | Total | River | Common Well | Spring | Unspecified | Total | River | Common Well | Spring | Unspecified | Total | River | Common Well | Spring | Unspecified | Total | |
| Bilaspur | Bilaspur | 60 | | | | 6 | 6 | | | | 4 | 4 | | | | 10 | 10 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| | Bharmour | 20 | | | | | 0 | | | 7 | 7 | | | | 0 | 7 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Chamba | Chamba WL | 20 | | | | 1 | 1 | | | | | | | | 6 | 6 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Pangi | 20 | | | | 2 | 2 | | | 1 | 1 | | | | 3 | 3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kinnaur | Kinnaur | 40 | | | | 4 | 4 | | | 6 | 6 | | | | 10 | 10 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Sarahan WL | 20 | | | | | 0 | | | 1 | 1 | | | | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kullu | Kullu | 20 | | | | 4 | 4 | | | | | | | | 6 | 6 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Kullu WL | 20 | | | | | 0 | | | 4 | 4 | | | | 4 | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | | 6 | 6 | | | | 6 | 6 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Mandi | Karsog | 20 | | | | | 0 | | | 1 | 1 | | | | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Mandi | 20 | | | | | 0 | | | | | | | | 0 | 0 | - | - | - | - | - | 0.0 | |
| Shimla | Kotgarh | 20 | | | | 4 | 4 | | | 1 | 1 | | | | 5 | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Rampur | 21 | | | | 2 | 2 | | | 4 | 4 | | | | 6 | 6 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Theog | 20 | | | | 1 | 1 | | | 1 | 1 | | | | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Total of Territorial | | 341 | 0 | 0 | 0 | 24 | 24 | 0 | 0 | 0 | 43 | 43 | 0 | 0 | 67 | 67 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kangra | Bajinath | 3 | | | | 0 | 0 | | | | | | | | 0 | 0 | - | - | - | - | - | 0.0 | |
| Kullu | Kullu | 11 | | | | 0 | 0 | | | | | | | | 0 | 0 | - | - | - | - | - | 0.0 | |
| Mandi | Mandi | 3 | | | | 0 | 0 | | | | | | | | 0 | 0 | - | - | - | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | 0 | 0 | | | | | | | | 0 | 0 | - | - | - | - | - | 0.0 | |
| Kullu | Parvati | 10 | | | | 0 | 0 | | | 2 | 1 | | | | 3 | 0 | 0.0 | 0.0 | 66.7 | 33.3 | - | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 0 | | | 2 | 2 | | | | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | 0 | | | | | | | | 0 | 0 | - | - | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | 0 | 1 | | | 4 | 5 | | | | 4 | 5 | 20.0 | 0.0 | 0.0 | 0.0 | 80.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | 1 | | | 1 | 2 | | | | 1 | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 | |
| Solan | Baddi | 2 | | | | 0 | 0 | | | | | | | | 0 | 0 | - | - | - | - | - | 0.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 8 | 12 | 2 | 0 | 8 | 12 | 16.7 | 0.0 | 16.7 | 66.7 | 100.0 | 100.0 | |
| Grand Total | | 400 | 0 | 0 | 0 | 24 | 24 | 2 | 0 | 2 | 51 | 55 | 2 | 0 | 75 | 79 | 2.5 | 0.0 | 2.5 | 94.9 | 100.0 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

19.4 Availability of Toilet at Home

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Total | | | % to Total | | |
|-----------------------------------|------------|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|--------------|
| | | | Have | Don't Have | Total | Have | Don't Have | Total | Have | Don't Have | Total | Have | Don't Have | Total |
| Bilaspur | Bilaspur | 60 | 33 | 2 | 35 | 18 | 2 | 20 | 51 | 4 | 55 | 92.7 | 7.3 | 100.0 |
| | Bharmour | 20 | 11 | | 11 | 9 | | 9 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Chamba | Chamba WL | 20 | | | 0 | 20 | | 20 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| | Pangi | 20 | 10 | | 10 | 10 | | 10 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 18 | 1 | 19 | 20 | 1 | 21 | 38 | 2 | 40 | 95.0 | 5.0 | 100.0 |
| | Sarahan WL | 20 | | | 0 | 20 | 6 | 26 | 20 | 6 | 26 | 76.9 | 23.1 | 100.0 |
| Kullu | Kullu | 20 | 7 | 3 | 10 | 10 | | 10 | 17 | 3 | 20 | 85.0 | 15.0 | 100.0 |
| | Kullu WL | 20 | | | 0 | 19 | 1 | 20 | 19 | 1 | 20 | 95.0 | 5.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | 20 | | 20 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Mandi | Karsog | 20 | 10 | | 10 | 8 | 2 | 10 | 18 | 2 | 20 | 90.0 | 10.0 | 100.0 |
| | Mandi | 20 | 10 | | 10 | 9 | 1 | 10 | 19 | 1 | 20 | 95.0 | 5.0 | 100.0 |
| Shimla | Kotgarh | 20 | 7 | 3 | 10 | 9 | 1 | 10 | 16 | 4 | 20 | 80.0 | 20.0 | 100.0 |
| | Rampur | 21 | 10 | | 10 | 10 | 1 | 11 | 20 | 1 | 21 | 95.2 | 4.8 | 100.0 |
| | Theog | 20 | 11 | | 11 | 9 | | 9 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 127 | 9 | 136 | 191 | 15 | 206 | 318 | 24 | 342 | 93.0 | 7.0 | 100.0 |
| Kangra | Bajinath | 3 | | | 0 | 3 | | 3 | 3 | 0 | 3 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | 0 | 11 | | 11 | 11 | 0 | 11 | 100.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | 0 | 3 | | 3 | 3 | 0 | 3 | 100.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | | | 0 | 1 | | 1 | 1 | 0 | 1 | 100.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | | 0 | 7 | 3 | 10 | 7 | 3 | 10 | 70.0 | 30.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | 0 | 16 | 4 | 20 | 16 | 4 | 20 | 80.0 | 20.0 | 100.0 |
| Shimla | Theog | 1 | | | 0 | 1 | | 1 | 0 | 1 | 0.0 | 100.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | 0 | 5 | | 5 | 5 | | 5 | 0.0 | 100.0 | 100.0 |
| Shimla | Kotgarh | 2 | | | 0 | 2 | | 2 | 0 | 2 | 0.0 | 100.0 | 100.0 | |
| Solan | Baddi | 2 | | | 0 | 2 | | 2 | 0 | 2 | 0.0 | 100.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 41 | 17 | 58 | 41 | 17 | 58 | 70.7 | 29.3 | 100.0 |
| Grand Total | | 400 | 127 | 9 | 136 | 232 | 32 | 264 | 359 | 41 | 400 | 89.8 | 10.3 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

19.5 Do all members of your family use toilet at home?

| District | Division | No of Respondents Interviewed (a) | JFM | | | Non JFM | | | Total | | | % to Total | | |
|-----------------------------------|------------|-----------------------------------|------------|----------|------------|------------|-----------|------------|------------|-----------|------------|-------------|-------------|--------------|
| | | | Yes | No | Total | Yes | No | Total | Yes | No | Total | Yes | No | Total |
| Bilaspur | Bilaspur | 60 | 33 | | 33 | 18 | 1 | 19 | 51 | 1 | 52 | 98.1 | 1.9 | 100.0 |
| | Bharmour | 20 | 10 | | 10 | 9 | | 9 | 19 | 0 | 19 | 100.0 | 0.0 | 100.0 |
| Chamba | Chamba WL | 20 | | | 0 | 20 | | 20 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| | Pangi | 20 | 8 | | 8 | 10 | | 10 | 18 | 0 | 18 | 100.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | 15 | | 15 | 18 | 1 | 19 | 33 | 1 | 34 | 97.1 | 2.9 | 100.0 |
| | Sarahan WL | 20 | | | 0 | 20 | | 20 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | 6 | | 6 | 9 | | 9 | 15 | 0 | 15 | 100.0 | 0.0 | 100.0 |
| | Kullu WL | 20 | | | 0 | 19 | | 19 | 19 | 0 | 19 | 100.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | 0 | 20 | | 20 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Mandi | Karsog | 20 | 10 | | 10 | 8 | 1 | 9 | 18 | 1 | 19 | 94.7 | 5.3 | 100.0 |
| | Mandi | 20 | 10 | | 10 | 9 | 1 | 10 | 19 | 1 | 20 | 95.0 | 5.0 | 100.0 |
| Shimla | Kotgarh | 20 | 7 | 3 | 10 | 9 | 1 | 10 | 16 | 4 | 20 | 80.0 | 20.0 | 100.0 |
| | Rampur | 21 | 10 | | 10 | 11 | | 11 | 21 | 0 | 21 | 100.0 | 0.0 | 100.0 |
| | Theog | 20 | 11 | | 11 | 9 | | 9 | 20 | 0 | 20 | 100.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 120 | 3 | 123 | 189 | 5 | 194 | 309 | 8 | 317 | 97.5 | 2.5 | 100.0 |
| Kangra | Bainath | 3 | | | 0 | 3 | | 3 | 3 | 0 | 3 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | 0 | 10 | | 10 | 10 | 0 | 10 | 100.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | 0 | 3 | | 3 | 3 | 0 | 3 | 100.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | | | 0 | 1 | | 1 | 1 | 0 | 1 | 100.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | | 0 | 7 | 3 | 10 | 7 | 3 | 10 | 70.0 | 30.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | 0 | 17 | 4 | 21 | 17 | 4 | 21 | 81.0 | 19.0 | 100.0 |
| Shimla | Theog | 1 | | | 0 | 1 | | 1 | 0 | 1 | 1 | 0.0 | 100.0 | 100.0 |
| Solan | Nalagarh | 5 | | | 0 | | 3 | 3 | 0 | 3 | 0.0 | 100.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | 0 | | 2 | 2 | 0 | 2 | 0.0 | 100.0 | 100.0 | |
| Solan | Baddi | 2 | | | 0 | | 2 | 2 | 0 | 2 | 0.0 | 100.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 41 | 15 | 56 | 41 | 15 | 56 | 73.2 | 26.8 | 100.0 |
| Grand Total | | 400 | 120 | 3 | 123 | 230 | 20 | 250 | 350 | 23 | 373 | 93.8 | 6.2 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

19.6 Reasons for Not Using Toilet

| District | Division | No of Respondents Interviewed | JFM | | | | Non JFM | | | | Total | | | | Total % | | | | |
|-----------------------------------|------------|-------------------------------|------------------------|---------------------|--------------------|----------|------------------------|---------------------|--------------------|-----------|------------------------|---------------------|--------------------|-----------|------------------------|---------------------|--------------------|--------------|-------|
| | | | Do not know how to use | Do not see the need | Under construction | Total | Do not know how to use | Do not see the need | Under construction | Total | Do not know how to use | Do not see the need | Under construction | Total | Do not know how to use | Do not see the need | Under construction | Total | |
| Bilaspur | Bilaspur | 60 | | | 1 | 1 | | | 1 | 2 | 3 | 0 | 1 | 3 | 4 | 0.0 | 25.0 | 75.0 | 100.0 |
| | Bharmour | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Chamba | Chamba WL | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Pangi | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kinnaur | Kinnaur | 40 | | | | 0 | | | 1 | 1 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Sarahan WL | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Kullu | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Kullu WL | 20 | | | | 0 | | | 1 | 1 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | | | 1 | 1 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Mandi | Karsog | 20 | | | | 0 | | | 2 | 2 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Mandi | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Shimla | Kotgarh | 20 | | | 3 | 3 | | | 0 | 0 | 0 | 0 | 3 | 3 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Rampur | 21 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Theog | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Total of Territorial | | 341 | 0 | 0 | 4 | 4 | 0 | 1 | 7 | 8 | 0 | 1 | 11 | 12 | 0.0 | 8.3 | 91.7 | 100.0 | |
| Kangra | Bainath | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Kullu | 11 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Mandi | Mandi | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Parvati | 10 | | | | 0 | 1 | | 2 | 3 | 1 | 0 | 2 | 3 | 33.3 | 0.0 | 66.7 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | | 1 | 2 | 3 | 0 | 1 | 2 | 3 | 0.0 | 33.3 | 66.7 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | | | 1 | 1 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | 0 | | | 4 | 4 | 0 | 0 | 4 | 4 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | | | 2 | 2 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Solan | Baddi | 2 | | | | 0 | | | 2 | 2 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 1 | 1 | 13 | 15 | 1 | 1 | 13 | 15 | 6.7 | 6.7 | 86.7 | 100.0 | |
| Grand Total | | 400 | 0 | 0 | 4 | 4 | 1 | 2 | 20 | 23 | 1 | 2 | 24 | 27 | 27.0 | 7.4 | 88.9 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

19.7 Where do your family members for toilet?

| District | Division | No of Respondents Interviewed (a) | JEM | | | | | Non-JEM | | | | | Total | | | | | % to Total | | | | | | | | |
|-----------------------------------|------------|-----------------------------------|----------|-----------|-------------------|------------------|---------------------------|-----------|-----------|-----------|-------------------|------------------|---------------------------|-----------|-----------|-----------|-------------------|------------------|---------------------------|-------------|-------------|------------|-------------|------------|--------------|--------------|
| | | | Forest | Riverside | Agriculture field | Community Toilet | Other place (Unspecified) | Total | Forest | Riverside | Agriculture field | Community Toilet | Other place (Unspecified) | Total | Forest | Riverside | Agriculture field | Community Toilet | Other place (Unspecified) | Total | | | | | | |
| Bilaspur | Bilaspur | 60 | 1 | | | | 4 | 5 | 1 | | | | 3 | 2 | 0 | | 2 | 0 | 4 | 8 | 25.0 | 0.0 | 25.0 | 0.0 | 50.0 | 100.0 |
| | Bharmour | 20 | | | | | | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Chamba | Chamba WL | 20 | | | | | | | | | | | 4 | 4 | 0 | 0 | 0 | 0 | 4 | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| | Pangi | 20 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 40 | 1 | | | | 3 | 4 | 1 | | | | 6 | 7 | 2 | 0 | 0 | 0 | 9 | 11 | 18.2 | 0.0 | 0.0 | 0.0 | 81.8 | 100.0 |
| | Sarahan WL | 20 | | | | | | 0 | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Kullu | Kullu | 20 | 2 | | 2 | | 2 | 6 | | | | | 2 | 2 | 2 | 0 | 2 | 0 | 4 | 8 | 25.0 | 0.0 | 25.0 | 0.0 | 50.0 | 100.0 |
| | Kullu WL | 20 | | | | | | 0 | | | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0.0 | 0.0 | 0.0 | 25.0 | 75.0 | 100.0 |
| Lahaul & Spiti | Spiri(WL) | 20 | | | | | | 0 | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Mandi | Kanog | 20 | | | | | 1 | 1 | 2 | | | | 2 | 2 | 0 | 0 | 0 | 1 | 3 | 66.7 | 0.0 | 0.0 | 0.0 | 33.3 | 100.0 | |
| | Mandi | 20 | | | | | | 0 | | | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0.0 | 0.0 | 50.0 | 0.0 | 50.0 | 100.0 | |
| | Kotgarh | 20 | | | 1 | | 3 | 4 | | | | | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 4 | 0.0 | 0.0 | 25.0 | 0.0 | 75.0 | 100.0 |
| Shimla | Rampur | 21 | | | | | 1 | 1 | | | | | 5 | 5 | 0 | 0 | 0 | 0 | 6 | 6 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| | Theog | 20 | | | | | | 0 | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Total of Territorial | | 341 | 4 | 0 | 3 | 0 | 14 | 21 | 4 | 0 | 3 | 1 | 26 | 34 | 8 | 0 | 6 | 1 | 40 | 55 | 14.5 | 0.0 | 10.9 | 1.8 | 72.7 | 100.0 |
| Kangra | Bajinath | 3 | | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Mandi | Mandi | 3 | | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | | | | | | 0 | 2 | | | 1 | 3 | 2 | 0 | 0 | 0 | 1 | 3 | 66.7 | 0.0 | 0.0 | 0.0 | 33.3 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | 0 | 2 | 1 | | | 3 | 2 | 1 | 0 | 0 | 0 | 3 | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | | | 0 | 1 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagrh | 5 | | | | | | 0 | 1 | 4 | | | 5 | 5 | 1 | 4 | 0 | 0 | 5 | 20.0 | 80.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | 0 | 2 | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | 0.0 |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 0 | 0 | 1 | 14 | 8 | 5 | 0 | 0 | 1 | 14 | 57.1 | 35.7 | 0.0 | 0.0 | 7.1 | 100.0 | |
| Grand Total | | 400 | 4 | 0 | 3 | 0 | 14 | 21 | 12 | 5 | 3 | 1 | 27 | 48 | 16 | 5 | 6 | 1 | 41 | 69 | 23.2 | 7.2 | 8.7 | 1.4 | 59.4 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

20. Access to Various Offices and Schools

20.1 Average Distance to Various Offices, Schools, Health Related Facilities in Km

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | | | | | | Non JFM | | | | | | | | | | |
|-----------------------------------|-------------|-----------------------------------|--------------|----------------|-----------------|---------------------|----------------|----------------|------------------|-------------|------------|----------------|-----------------------|--------------|----------------|-----------------|---------------------|----------------|----------------|------------------|-------------|------------|----------------|-----------------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | | Block Office | Gram Panchayat | District Office | Forest Range Office | Police Station | Primary School | Secondary School | College | Anganwadi | Sr. Sec School | Primary Health Center | Block Office | Gram Panchayat | District Office | Forest Range Office | Police Station | Primary School | Secondary School | College | Anganwadi | Sr. Sec School | Primary Health Center |
| Bilaspur | Bilaspur | 60 | 18.3 | 2.5 | 25.4 | 14.5 | 19.6 | 0.7 | 0.7 | 19.5 | 0.7 | 1.1 | 2.4 | 13.9 | 6.3 | 42.9 | 14.3 | 16.8 | 0.7 | 0.8 | 21.9 | 2.1 | 6.5 | 4.1 |
| Bilaspur | Bharmour | 20 | 27.9 | 0.3 | 52.3 | 19.0 | 27.2 | 0.2 | 0.5 | 45.2 | 0.2 | 0.3 | 2.0 | 20.0 | 1.1 | 52.9 | 2.7 | 20.0 | 0.2 | 0.3 | 20.0 | 0.1 | 2.4 | 1.5 |
| Chamba | Chamba WL | 20 | | | | | | | | | | | | 19.5 | 0.4 | 81.1 | 17.9 | 19.5 | 0.2 | 0.8 | 25.6 | 0.2 | 15.2 | 5.2 |
| Chamba | Pang | 20 | 27.8 | 0.3 | 196.2 | 1.4 | 2.4 | 0.2 | 1.8 | 28.0 | 0.1 | 1.4 | 1.4 | 32.6 | 6.2 | 188.9 | 6.6 | 7.0 | 0.2 | 2.4 | 32.6 | 0.2 | 6.4 | 4.4 |
| Kinnaur | Kinnaur | 40 | 14.3 | 0.3 | 46.4 | 5.3 | 4.9 | 0.2 | 0.2 | 46.4 | 0.1 | 0.5 | 0.2 | 13.0 | 0.2 | 28.0 | 20.2 | 12.0 | 0.4 | 0.5 | 28.9 | 0.3 | 1.8 | 0.7 |
| Kinnaur | Sarahan WL | 20 | | | | | | | | | | | | 32.4 | 0.2 | 91.1 | 28.7 | 32.5 | 0.3 | 1.9 | 61.9 | 0.2 | 0.2 | 0.7 |
| Kullu | Kullu | 20 | 16.0 | 5.0 | 15.0 | 15.0 | 16.0 | 0.3 | 6.8 | 16.3 | 0.2 | 9.2 | 4.8 | 23.7 | 0.3 | 5.1 | 5.5 | 5.1 | 0.2 | 0.4 | 5.4 | 0.2 | 5.3 | 5.0 |
| Kullu | Kullu WL | 20 | | | | | | | | | | | | 14.8 | 18.4 | 2.2 | 40.8 | 2.3 | 2.5 | 0.2 | 0.3 | 12.6 | 0.1 | 1.8 |
| Lahaul & Spiti | Spirit(W/L) | 20 | | | | | | | | | | | | 52.7 | 2.5 | 138.5 | 34.2 | 41.1 | 0.2 | 0.2 | 191.4 | 0.2 | 0.2 | 0.2 |
| Mandi | Karsog | 20 | 2.5 | 1.0 | 85.6 | 1.3 | 2.6 | 0.6 | 0.4 | 0.6 | 0.3 | | 1.1 | 4.1 | 2.9 | 125.0 | 2.2 | 4.0 | 0.3 | 2.0 | 4.7 | 0.4 | 2.8 | 2.8 |
| Mandi | Mandi | 20 | 29.2 | 7.4 | 29.2 | 7.4 | 11.6 | 0.5 | 5.5 | 29.2 | 0.8 | 5.5 | 7.4 | 18.7 | 9.3 | 17.7 | 23.2 | 15.6 | 0.9 | 0.9 | 17.7 | 0.6 | 1.8 | 6.4 |
| Shimla | Kotgarh | 20 | 42.4 | 8.7 | 111.0 | 24.6 | 12.0 | 0.6 | 7.0 | 21.5 | 0.5 | 3.0 | 7.6 | 30.0 | 3.3 | 99.0 | 8.5 | 26.9 | 0.4 | 2.9 | 38.9 | 0.3 | 3.0 | 5.0 |
| Shimla | Rampur | 21 | 45.5 | 0.7 | 171.0 | 31.5 | 25.0 | 0.7 | 0.7 | 45.5 | 0.3 | 9.1 | 4.6 | 60.0 | 5.7 | 200.0 | 34.6 | 31.9 | 0.2 | 5.7 | 55.6 | 0.2 | | 10.8 |
| Shimla | Theog | 20 | 28.9 | 2.6 | 50.9 | 27.1 | 28.4 | 1.5 | 2.7 | 27.1 | 2.1 | 2.0 | 7.9 | 22.4 | 0.6 | 53.0 | 22.1 | 24.7 | 0.7 | 0.6 | 22.4 | 0.5 | 0.5 | 6.4 |
| Total of Territorial | | 341 | 23.1 | 2.6 | 64.6 | 14.2 | 15.5 | 0.6 | 2.2 | 27.7 | 0.6 | 2.4 | 3.3 | 25.6 | 2.7 | 79.5 | 17.0 | 19.2 | 0.3 | 1.3 | 43.5 | 0.4 | 4.0 | 3.4 |
| Kangra | Bajinath | 3 | | | | | | | | | | | | 6.7 | 1.0 | 34.0 | 2.5 | 6.0 | 1.0 | 2.5 | 19.7 | 1.0 | | 1.0 |
| Kullu | Kullu | 11 | | | | | | | | | | | | 15.6 | 2.1 | 21.1 | 8.0 | 9.9 | 1.9 | 1.4 | 21.1 | 1.2 | | 3.2 |
| Mandi | Mandi | 3 | | | | | | | | | | | | 20.0 | 2.0 | 30.0 | 11.5 | 11.5 | 1.5 | 2.5 | 18.5 | 1.5 | | 1.5 |
| Kangra | Palampur | 1 | | | | | | | | | | | | 7.0 | 1.0 | 50.0 | 7.0 | 7.0 | 1.0 | 1.0 | 7.0 | 1.0 | | 1.0 |
| Kullu | Parvati | 10 | | | | | | | | | | | | 59.0 | 1.3 | 47.6 | 29.5 | 34.0 | 1.0 | 18.4 | 50.0 | 1.3 | | 1.3 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | | 33.3 | 0.9 | 64.4 | 12.3 | 10.5 | 0.4 | 5.6 | 63.2 | 0.4 | 1.5 | 0.8 |
| Shimla | Theog | 1 | | | | | | | | | | | | 60.0 | 9.0 | 75.0 | 40.0 | 20.0 | 6.0 | 8.0 | 60.0 | 5.0 | | 5.0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | | 5.4 | 2.0 | 32.2 | 7.4 | 7.4 | 1.0 | 3.2 | 6.8 | 0.7 | | 1.7 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | | 9.5 | 3.8 | 85.0 | 11.0 | 6.0 | 1.0 | 6.5 | 11.0 | 1.0 | 6.0 | 8.0 |
| Solan | Baddi | 2 | | | | | | | | | | | | 6.0 | 2.0 | 50.0 | 6.0 | 3.0 | 2.0 | 15.0 | 2.0 | | 3.0 | 3.0 |
| Total of Graziers/ Grassla | | 59 | | | | | | | | | | | | 29.3 | 1.6 | 49.9 | 14.2 | 14.1 | 1.1 | 6.8 | 41.2 | 0.9 | 3.8 | 1.8 |
| Grand Total | | 400 | 23.1 | 2.6 | 64.6 | 14.2 | 15.5 | 0.6 | 2.2 | 27.7 | 0.6 | 2.4 | 3.3 | 26.4 | 2.5 | 73.1 | 16.4 | 18.1 | 0.5 | 2.7 | 43.0 | 0.5 | 4.0 | 3.1 |

Source: Livelihood Survey, JICA Study Team (2017)

20.1 Average Distance to Various Offices, Schools, Health Related Facilities in Km (2)

| District | Division | No of Respondents Interviewed (a) | Total | | | | | | | | | | |
|-----------------------------------|-------------|-----------------------------------|--------------|----------------|-----------------|---------------------|----------------|----------------|------------------|-------------|------------|----------------|-----------------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | | Block Office | Gram Panchayat | District Office | Forest Range Office | Police Station | Primary School | Secondary School | College | Anganwadi | Sr. Sec School | Primary Health Center |
| Bilaspur | Bilaspur | 60 | 16.9 | 3.8 | 31.2 | 14.4 | 18.7 | 0.7 | 0.7 | 20.3 | 1.2 | 3.2 | 3.0 |
| Bilaspur | Bharmour | 20 | 24.4 | 0.7 | 52.6 | 11.7 | 24.0 | 0.2 | 0.4 | 33.9 | 0.2 | 1.3 | 1.7 |
| Chamba | Chamba WL | 20 | 19.5 | 0.4 | 81.1 | 17.9 | 19.5 | 0.2 | 0.8 | 25.6 | 0.2 | 15.2 | 5.2 |
| Chamba | Pang | 20 | 30.2 | 3.3 | 192.6 | 4.0 | 4.7 | 0.2 | 2.2 | 30.3 | 0.1 | 3.9 | 2.9 |
| Kinnaur | Kinnaur | 40 | 13.6 | 0.2 | 36.9 | 13.0 | 8.5 | 0.3 | 0.4 | 37.4 | 0.2 | 0.8 | 0.5 |
| Kinnaur | Sarahan WL | 20 | 36.2 | 6.0 | 105.0 | 16.5 | 19.5 | 0.5 | 5.1 | 30.2 | 0.4 | 3.0 | 6.2 |
| Kullu | Kullu | 20 | 19.9 | 2.7 | 10.1 | 10.3 | 10.6 | 0.2 | 3.6 | 10.9 | 0.2 | 6.9 | 4.9 |
| Kullu | Kullu WL | 20 | 18.4 | 2.2 | 40.8 | 2.3 | 2.5 | 0.2 | 0.3 | 12.6 | 0.1 | 1.8 | 0.7 |
| Lahaul & Spiti | Spirit(W/L) | 20 | 52.7 | 2.5 | 138.5 | 34.2 | 41.1 | 0.2 | 0.2 | 191.4 | 0.2 | 0.2 | 0.2 |
| Mandi | Karsog | 20 | 30.2 | 3.3 | 192.6 | 4.0 | 4.7 | 0.2 | 2.2 | 30.3 | 0.1 | 3.9 | 2.9 |
| Mandi | Mandi | 20 | 52.8 | 3.3 | 185.5 | 33.1 | 28.6 | 0.4 | 3.6 | 50.8 | 0.3 | 9.1 | 8.4 |
| Shimla | Kotgarh | 20 | 32.4 | 0.2 | 91.1 | 28.7 | 32.5 | 0.3 | 1.9 | 61.9 | 0.2 | 0.2 | 0.7 |
| Shimla | Rampur | 21 | 52.7 | 2.5 | 138.5 | 34.2 | 41.1 | 0.2 | 0.2 | 191.4 | 0.2 | 0.2 | 0.2 |
| Shimla | Theog | 20 | 26.0 | 1.7 | 51.9 | 24.9 | 26.7 | 1.2 | 2.0 | 25.0 | 1.4 | 1.2 | 7.2 |
| Total of Territorial | | 341 | 24.6 | 2.7 | 73.3 | 15.8 | 17.6 | 0.4 | 1.7 | 37.0 | 0.5 | 3.4 | 3.4 |
| Kangra | Bajinath | 3 | 6.7 | 1.0 | 34.0 | 2.5 | 6.0 | 1.0 | 2.5 | 19.7 | 1.0 | | 1.0 |
| Kullu | Kullu | 11 | 15.6 | 2.1 | 21.1 | 8.0 | 9.9 | 1.9 | 1.4 | 21.1 | 1.2 | | 3.2 |
| Mandi | Mandi | 3 | 20.0 | 2.0 | 30.0 | 11.5 | 11.5 | 1.5 | 2.5 | 18.5 | 1.5 | | 1.5 |
| Kangra | Palampur | 1 | 7.0 | 1.0 | 50.0 | 7.0 | 7.0 | 1.0 | 1.0 | 7.0 | 1.0 | | 1.0 |
| Kullu | Parvati | 10 | 59.0 | 1.3 | 47.6 | 29.5 | 34.0 | 1.0 | 18.4 | 50.0 | 1.3 | | 1.3 |
| Kinnaur | Kinnaur | 21 | 33.3 | 0.9 | 64.4 | 12.3 | 10.5 | 0.4 | 5.6 | 63.2 | 0.4 | 1.5 | 0.8 |
| Shimla | Theog | 1 | 60.0 | 9.0 | 75.0 | 40.0 | 20.0 | 6.0 | 8.0 | 60.0 | 5.0 | | 5.0 |
| Solan | Nalagarh | 5 | 5.4 | 2.0 | 32.2 | 7.4 | 7.4 | 1.0 | 3.2 | 6.8 | 0.7 | | 1.7 |
| Shimla | Kotgarh | 2 | 9.5 | 3.8 | 85.0 | 11.0 | 6.0 | 1.0 | 6.5 | 11.0 | 1.0 | 6.0 | 8.0 |
| Solan | Baddi | 2 | 6.0 | 2.0 | 50.0 | 6.0 | 3.0 | 2.0 | 15.0 | 2.0 | | | 3.0 |
| Total of Graziers/ Grassla | | 59 | 29.3 | 1.6 | 49.9 | 14.2 | 14.1 | 1.1 | 6.8 | 41.2 | 0.9 | 3.8 | 1.8 |
| Grand Total | | 400 | 25.2 | 2.5 | 70.1 | 15.6 | 17.2 | 0.5 | 2.5 | 37.6 | 0.5 | 3.4 | 3.2 |

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

1) Block Office

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Division Total | | | | | | | |
|-----------------------------------|------------|-----------------------------------|-----------|------------|----------|-------------|------------|------------|-----------|------------|----------|-------------|------------|------------|------------|------------|----------|-------------|------------|---------------------|-------------|------------|-------------|------------|-------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | | | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | | |
| Bilaspur | Bilaspur | 60 | 1 | | | | 40 | 41 | 1 | | | | 19 | 20 | 2 | 0 | 0 | 0 | 0 | 59 | 61 | 3.3 | 0.0 | 0.0 | 0.0 | 96.7 | 100.0 |
| | Bharmour | 20 | 2 | | | | 11 | 13 | 3 | | | | 9 | 12 | 5 | 0 | 0 | 0 | 0 | 20 | 25 | 20.0 | 0.0 | 0.0 | 0.0 | 80.0 | 100.0 |
| Chamba | Chamba WL | 20 | | | | | 0 | 9 | | | | | 20 | 29 | 9 | 0 | 0 | 0 | 0 | 20 | 29 | 31.0 | 0.0 | 0.0 | 0.0 | 69.0 | 100.0 |
| | Pangi | 20 | 2 | | | | 10 | 12 | 2 | | | | 10 | 12 | 4 | 0 | 0 | 0 | 0 | 20 | 24 | 16.7 | 0.0 | 0.0 | 0.0 | 83.3 | 100.0 |
| Kinnaur | Kinnaur | 40 | | | | | 19 | 19 | 10 | | | | 20 | 30 | 10 | 0 | 0 | 0 | 0 | 39 | 49 | 20.4 | 0.0 | 0.0 | 0.0 | 79.6 | 100.0 |
| | Sarahan WL | 20 | | | | | 0 | 10 | | | | | 19 | 29 | 10 | 0 | 0 | 0 | 0 | 19 | 29 | 34.5 | 0.0 | 0.0 | 0.0 | 65.5 | 100.0 |
| Kullu | Kullu | 20 | 10 | | | | 10 | 20 | 8 | | | | 10 | 18 | 18 | 0 | 0 | 0 | 0 | 20 | 38 | 47.4 | 0.0 | 0.0 | 0.0 | 52.6 | 100.0 |
| | Kullu WL | 20 | | | | | 0 | 4 | | | | | 20 | 24 | 4 | 0 | 0 | 0 | 0 | 20 | 24 | 16.7 | 0.0 | 0.0 | 0.0 | 83.3 | 100.0 |
| Lahaul & Spiti | Spiri(WL) | 20 | | | | | 0 | 2 | | | | 2 | 17 | 21 | 2 | 0 | 0 | 2 | 17 | 21 | 21 | 9.5 | 0.0 | 0.0 | 9.5 | 81.0 | 100.0 |
| Mandi | Karsog | 20 | 9 | | | | 9 | 18 | 7 | | | 1 | 9 | 17 | 16 | 0 | 0 | 1 | 18 | 35 | 45.7 | 0.0 | 0.0 | 0.0 | 2.9 | 51.4 | 100.0 |
| | Mandi | 20 | 4 | | | | 10 | 14 | 7 | | | | 10 | 17 | 11 | 0 | 0 | 0 | 20 | 31 | 35.5 | 0.0 | 0.0 | 0.0 | 64.5 | 100.0 | |
| | Kotgarh | 20 | 2 | | | | 10 | 12 | 1 | | | | 10 | 11 | 3 | 0 | 0 | 0 | 20 | 23 | 13.0 | 0.0 | 0.0 | 0.0 | 87.0 | 100.0 | |
| Shimla | Rampur | 21 | 1 | | | | 10 | 11 | 6 | | | | 10 | 16 | 7 | 0 | 0 | 0 | 20 | 27 | 25.9 | 0.0 | 0.0 | 0.0 | 74.1 | 100.0 | |
| | Theog | 20 | | | | 1 | 11 | 12 | 3 | | | | 9 | 12 | 3 | 0 | 0 | 1 | 20 | 24 | 12.5 | 0.0 | 0.0 | 4.2 | 83.3 | 100.0 | |
| Total of Territorial | | 341 | 31 | 0 | 0 | 1 | 140 | 172 | 73 | 0 | 0 | 3 | 192 | 268 | 104 | 0 | 0 | 4 | 332 | 440 | 23.6 | 0.0 | 0.0 | 0.9 | 75.5 | 100.0 | |
| Kangra | Bujinath | 3 | | | | | 3 | 3 | | | | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 3 | 3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | | | | 1 | 6 | 7 | 0 | 0 | 0 | 1 | 8 | 9 | 0.0 | 0.0 | 0.0 | 11.1 | 88.9 | 100.0 | | |
| Mandi | Mandi | 3 | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Kangra | Palampur | 1 | | | | | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Kullu | Parvati | 10 | | | | | | | | | | 10 | 10 | 0 | 0 | 0 | 0 | 10 | 10 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | 2 | 20 | 22 | 0 | 0 | 0 | 2 | 24 | 26 | 0.0 | 0.0 | 0.0 | 7.7 | 92.3 | 100.0 | |
| Shimla | Theog | 1 | | | | | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Solan | Nalagrh | 5 | | | | | | | | 3 | | | 2 | 5 | 3 | 0 | 0 | 0 | 0 | 8 | 11 | 0.0 | 0.0 | 0.0 | 27.3 | 72.7 | 100.0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 49 | 55 | 3 | 0 | 0 | 3 | 61 | 67 | 4.5 | 0.0 | 0.0 | 4.5 | 91.0 | 100.0 | |
| Grand Total | | 400 | 31 | 0 | 0 | 1 | 140 | 172 | 76 | 0 | 0 | 6 | 241 | 323 | 107 | 0 | 0 | 7 | 393 | 507 | 21.1 | 0.0 | 0.0 | 1.4 | 77.5 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

2) Gram panchayat

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Division Total | | | | | | |
|-----------------------------------|------------|-----------------------------------|------------|------------|----------|-------------|-----------|------------|------------|------------|----------|-------------|-----------|------------|------------|------------|----------|-------------|-----------|---------------------|-------------|------------|-------------|------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | |
| Bilaspur | Bilaspur | 60 | 18 | | | 1 | 25 | 44 | 12 | | | | 20 | 30 | 0 | 0 | 0 | 1 | 33 | 64 | 46.9 | 0.0 | 0.0 | 1.6 | 51.6 | 100.0 |
| | Bharmour | 20 | 11 | | | | 11 | 9 | | | | 9 | 20 | 0 | 0 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Chamba WL | 20 | | | | | 0 | 20 | | | | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Pangi | 20 | 10 | | | | 10 | 10 | | | | 6 | 16 | 20 | 0 | 0 | 0 | 6 | 26 | 76.9 | 0.0 | 0.0 | 0.0 | 23.1 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 19 | | | | 19 | 18 | | | | 18 | 37 | 0 | 0 | 0 | 0 | 0 | 37 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | | | | | 0 | 20 | | | | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | 10 | | | | 10 | 10 | | | | 10 | 20 | 0 | 0 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | | 0 | 20 | | | | 20 | 20 | 0 | 0 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiri(WL) | 20 | | | | | 0 | 17 | | | | 3 | 20 | 17 | 0 | 0 | 0 | 3 | 20 | 85.0 | 0.0 | 0.0 | 0.0 | 15.0 | 100.0 | |
| Mandi | Karsog | 20 | 10 | | | | 10 | 7 | | | 1 | 8 | 16 | 17 | 0 | 0 | 1 | 8 | 26 | 65.4 | 0.0 | 0.0 | 3.8 | 30.8 | 100.0 | |
| | Mandi | 20 | 6 | | | 4 | 10 | 8 | | | | 2 | 10 | 14 | 0 | 0 | 0 | 6 | 20 | 70.0 | 0.0 | 0.0 | 0.0 | 30.0 | 100.0 | |
| | Kotgarh | 20 | 4 | | | | 6 | 10 | 9 | | | 1 | 10 | 13 | 0 | 0 | 0 | 7 | 20 | 65.0 | 0.0 | 0.0 | 0.0 | 35.0 | 100.0 | |
| Shimla | Rampur | 21 | 10 | | | | 10 | 11 | | | | 11 | 21 | 0 | 0 | 0 | 0 | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Theog | 20 | 9 | | | | 2 | 11 | 9 | | | 9 | 18 | 0 | 0 | 0 | 2 | 20 | 90.0 | 0.0 | 0.0 | 0.0 | 10.0 | 100.0 | | |
| Total of Territorial | | 341 | 107 | 0 | 0 | 1 | 37 | 145 | 180 | 0 | 0 | 1 | 28 | 209 | 287 | 0 | 0 | 2 | 65 | 354 | 81.1 | 0.0 | 0.0 | 0.6 | 18.4 | 100.0 |
| Kangra | Bujinath | 3 | | | | | | | 1 | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | | 3 | | | 1 | 1 | 5 | 3 | 0 | 0 | 1 | 5 | 60.0 | 0.0 | 0.0 | 20.0 | 20.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | | | | 2 | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | | 1 | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | | | 4 | | | | 4 | 4 | 0 | 0 | 0 | 4 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kinnaur | Kinnaur | 21 | | | | | | | 21 | | | | 21 | 21 | 0 | 0 | 0 | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | | | | 1 | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagrh | 5 | | | | | | | 5 | | | | 5 | 5 | 0 | 0 | 0 | 0 | 5 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | | 1 | | 1 | | 2 | 1 | 0 | 0 | 1 | 0 | 2 | 50.0 | 0.0 | 50.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | | 2 | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 1 | 1 | 1 | 44 | 41 | 0 | 1 | 1 | 1 | 44 | 93.2 | 0.0 | 2.3 | 2.3 | 2.3 | 100.0 | |
| Grand Total | | 400 | 107 | 0 | 0 | 1 | 37 | 145 | 221 | 0 | 1 | 2 | 29 | 253 | 328 | 0 | 1 | 3 | 66 | 398 | 82.4 | 0.0 | 0.3 | 0.8 | 16.6 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

3) District Office

| District | Division | No of Respondents Interviewed (n) | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Division Total | | | | | | |
|-----------------------------------|----------------|-----------------------------------|-----------|------------|----------|-------------|------------|------------|-----------|------------|----------|-------------|-----------|------------|------------|------------|----------|-------------|-----------|---------------------|------------|-------------|-------------|------------|------------|-------------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Total | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Total | |
| Bilaspur | Bilaspur | 60 | | | | 1 | 40 | 41 | | | | | 20 | 20 | 0 | 0 | 0 | 1 | 60 | 61 | 0.0 | 0.0 | 0.0 | 1.6 | 98.4 | 100.0 |
| | Bharmour | 20 | 2 | | | | 11 | 13 | 3 | | | | 9 | 12 | 5 | 0 | 0 | 0 | 20 | 25 | 20.0 | 0.0 | 0.0 | 80.0 | 100.0 | |
| | Chamba WL | 20 | | | | | | 0 | 7 | | | | 18 | 25 | 7 | 0 | 0 | 0 | 18 | 25 | 28.0 | 0.0 | 0.0 | 72.0 | 100.0 | |
| | Pangi | 20 | 10 | | | | 10 | 16 | 10 | | | | 6 | 16 | 20 | 0 | 0 | 0 | 6 | 26 | 76.9 | 0.0 | 0.0 | 23.1 | 100.0 | |
| | Kinnaur | 40 | 2 | | | | 10 | 12 | 2 | | | | 10 | 12 | 4 | 0 | 0 | 0 | 20 | 24 | 16.7 | 0.0 | 0.0 | 83.3 | 100.0 | |
| | Kinnaur | 40 | | | | | 19 | 19 | 9 | | | | 20 | 29 | 9 | 0 | 0 | 0 | 39 | 48 | 18.8 | 0.0 | 0.0 | 81.3 | 100.0 | |
| | Sarahan WL | 20 | | | | | | 0 | 10 | | | | 1 | 18 | 29 | 10 | 0 | 0 | 1 | 18 | 29 | 34.5 | 0.0 | 0.0 | 62.1 | 100.0 |
| | Kullu | 20 | 10 | | | | 10 | 20 | 10 | | | | 10 | 20 | 20 | 0 | 0 | 0 | 20 | 40 | 50.0 | 0.0 | 0.0 | 50.0 | 100.0 | |
| | Kullu WL | 20 | | | | | | 0 | 2 | | | | 3 | 20 | 25 | 2 | 0 | 0 | 3 | 20 | 25 | 8.0 | 0.0 | 0.0 | 12.0 | 80.0 |
| | Lahaul & Spiti | 20 | | | | | | 0 | 2 | | | | 4 | 14 | 20 | 2 | 0 | 0 | 4 | 14 | 20 | 10.0 | 0.0 | 0.0 | 20.0 | 70.0 |
| | Mandi | 20 | 3 | | | | 10 | 13 | | | | | 1 | 10 | 11 | 3 | 0 | 0 | 1 | 20 | 24 | 12.5 | 0.0 | 0.0 | 4.2 | 83.3 |
| | Mandi | 20 | 4 | | | | 10 | 14 | 7 | | | | 10 | 17 | 11 | 0 | 0 | 0 | 20 | 31 | 35.5 | 0.0 | 0.0 | 0.0 | 64.5 | |
| | Shimla | 20 | 1 | | | | 10 | 11 | | | | | 10 | 10 | 1 | 0 | 0 | 0 | 20 | 21 | 4.8 | 0.0 | 0.0 | 0.0 | 95.2 | |
| | Shimla | 21 | | | | | 10 | 10 | 6 | | | | 10 | 16 | 6 | 0 | 0 | 0 | 20 | 26 | 23.1 | 0.0 | 0.0 | 0.0 | 76.9 | |
| | Theog | 20 | | | | | 1 | 11 | 12 | | | | 9 | 9 | 0 | 0 | 0 | 0 | 11 | 20 | 21 | 0.0 | 0.0 | 0.0 | 4.8 | 95.2 |
| Total of Territorial | | 341 | 22 | 0 | 0 | 2 | 141 | 165 | 60 | 0 | 0 | 0 | 9 | 190 | 259 | 82 | 0 | 0 | 11 | 331 | 424 | 19.3 | 0.0 | 0.0 | 2.6 | 78.1 |
| Kangra | Bainath | 3 | | | | | 3 | 3 | | | | | 3 | 3 | 0 | 0 | 0 | 0 | 3 | 3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | | | | | | 1 | 6 | 7 | 0 | 0 | 0 | 1 | 6 | 7 | 0.0 | 0.0 | 0.0 | 14.3 | 85.7 |
| Mandi | Mandi | 3 | | | | | | | | | | | 2 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | | | | | | | | | | | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | | | | | | | | | | 10 | 10 | 0 | 0 | 0 | 0 | 10 | 10 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | 1 | 20 | 21 | 0 | 0 | 0 | 1 | 20 | 21 | 0.0 | 0.0 | 0.0 | 4.8 | 95.2 |
| Shimla | Theog | 1 | | | | | | | | | | | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | 5 | 5 | 0 | 0 | 0 | 0 | 5 | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 52 | 54 | 0 | 0 | 0 | 2 | 52 | 54 | 0.0 | 0.0 | 0.0 | 3.7 | 96.3 |
| Grand Total | | 400 | 22 | 0 | 0 | 2 | 141 | 165 | 60 | 0 | 0 | 0 | 11 | 242 | 313 | 82 | 0 | 0 | 13 | 383 | 478 | 17.2 | 0.0 | 0.0 | 2.7 | 80.1 |

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

4) Forest Range Office

| District | Division | No of Respondents Interviewed (n) | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Division Total | | | | | | |
|-----------------------------------|----------------|-----------------------------------|-----------|------------|----------|-------------|------------|------------|------------|------------|----------|-------------|----------|------------|------------|------------|----------|-------------|----------|---------------------|------------|-------------|-------------|------------|------------|-------------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Total | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Total | |
| Bilaspur | Bilaspur | 60 | | | | 1 | 40 | 41 | | | | | 20 | 20 | 0 | 0 | 0 | 1 | 60 | 61 | 0.0 | 0.0 | 0.0 | 1.6 | 98.4 | 100.0 |
| | Bharmour | 20 | 3 | | | | 10 | 13 | 9 | | | | 18 | 25 | 7 | 0 | 0 | 0 | 18 | 25 | 54.5 | 0.0 | 0.0 | 0.0 | 45.5 | |
| | Chamba WL | 20 | | | | | | 0 | 7 | | | | 6 | 16 | 20 | 0 | 0 | 0 | 6 | 26 | 28.0 | 0.0 | 0.0 | 0.0 | 72.0 | |
| | Pangi | 20 | 10 | | | | 10 | 16 | 10 | | | | 6 | 16 | 20 | 0 | 0 | 0 | 6 | 26 | 76.9 | 0.0 | 0.0 | 0.0 | 23.1 | |
| | Kinnaur | 40 | 10 | | | | 9 | 19 | 11 | | | | 16 | 27 | 21 | 0 | 0 | 0 | 25 | 46 | 45.7 | 0.0 | 0.0 | 0.0 | 54.3 | |
| | Kinnaur | 40 | | | | | 19 | 19 | 10 | | | | 19 | 29 | 10 | 0 | 0 | 0 | 19 | 29 | 34.5 | 0.0 | 0.0 | 0.0 | 65.5 | |
| | Sarahan WL | 20 | | | | | | 0 | 10 | | | | 1 | 18 | 29 | 10 | 0 | 0 | 1 | 18 | 29 | 34.5 | 0.0 | 0.0 | 0.0 | 65.5 |
| | Kullu | 20 | 10 | | | | 10 | 20 | 10 | | | | 10 | 20 | 20 | 0 | 0 | 0 | 20 | 40 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | |
| | Kullu WL | 20 | | | | | | 0 | 13 | | | | 1 | 18 | 32 | 13 | 0 | 0 | 1 | 18 | 32 | 40.6 | 0.0 | 0.0 | 3.1 | 56.3 |
| | Lahaul & Spiti | 20 | | | | | | 0 | 11 | | | | 8 | 19 | 11 | 0 | 0 | 0 | 8 | 19 | 57.9 | 0.0 | 0.0 | 0.0 | 42.1 | |
| | Mandi | 20 | 10 | | | | 6 | 16 | 7 | | | | 1 | 9 | 17 | 17 | 0 | 0 | 1 | 15 | 33 | 51.5 | 0.0 | 0.0 | 3.0 | 45.5 |
| | Mandi | 20 | 6 | | | | 6 | 12 | 7 | | | | 10 | 17 | 13 | 0 | 0 | 0 | 16 | 29 | 44.8 | 0.0 | 0.0 | 0.0 | 55.2 | |
| | Shimla | 20 | 4 | | | | 9 | 13 | | 1 | | | 10 | 11 | 4 | 1 | 0 | 0 | 19 | 24 | 16.7 | 4.2 | 0.0 | 0.0 | 79.2 | |
| | Shimla | 21 | | | | | 10 | 10 | 6 | | | | 7 | 13 | 6 | 0 | 0 | 0 | 17 | 23 | 26.1 | 0.0 | 0.0 | 0.0 | 73.9 | |
| | Theog | 20 | | | | | 1 | 11 | 12 | 3 | | | 9 | 12 | 3 | 0 | 0 | 0 | 11 | 20 | 24 | 12.5 | 0.0 | 0.0 | 4.2 | 83.3 |
| Total of Territorial | | 341 | 53 | 0 | 0 | 2 | 111 | 166 | 104 | 1 | 0 | 0 | 2 | 160 | 267 | 157 | 0 | 0 | 4 | 271 | 433 | 36.3 | 0.2 | 0.0 | 0.9 | 62.6 |
| Kangra | Bainath | 3 | | | | | | | | | | | 1 | 3 | 2 | 0 | 0 | 0 | 1 | 3 | 66.7 | 0.0 | 0.0 | 0.0 | 33.3 | |
| Kullu | Kullu | 11 | | | | | | | | | | | 1 | 6 | 2 | 0 | 0 | 0 | 1 | 6 | 33.3 | 0.0 | 0.0 | 0.0 | 16.7 | |
| Mandi | Mandi | 3 | | | | | | | | | | | 2 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | | | | | | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | | | | | | | 10 | 10 | 0 | 0 | 0 | 0 | 10 | 10 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | 1 | 12 | 21 | 8 | 0 | 0 | 1 | 12 | 21 | 38.1 | 0.0 | 0.0 | 4.8 | 57.1 |
| Shimla | Theog | 1 | | | | | | | | | | | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | | 5 | 5 | 0 | 0 | 0 | 0 | 5 | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 2 | 39 | | | | | | | | | | | | |

20.2 Mode of Transportation for Government Offices and etc.

5) Police Station

| District | Division | No of Respondents Interviewed (n) | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Division Total | | | | | | | | | |
|-----------------------------------|----------------|-----------------------------------|-----------|------------|----------|-------------|----------|------------|------------|------------|----------|-------------|-----------|------------|------------|------------|----------|-------------|-----------|---------------------|-------------|-------------|-------------|------------|-------------|--------------|--------------|-------|------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | | | | | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | | | | |
| Bilaspur | Bilaspur | 60 | | | | | 38 | | | | | | 20 | | | | | | 58 | | | | | 59 | 0.0 | 0.0 | 0.0 | 1.7 | 98.3 |
| | Bharmour | 20 | 2 | | | | 9 | | | | | 8 | | | | | | 17 | 22.7 | 0.0 | 0.0 | 0.0 | 22.7 | 0.0 | 0.0 | 0.0 | 0.0 | 77.3 | |
| | Chamba WL | 20 | | | | | | | | | | | 14 | 23 | 9 | | | 14 | 23 | 39.1 | 0.0 | 0.0 | 0.0 | 23 | 39.1 | 0.0 | 0.0 | 60.9 | |
| | Pangi | 20 | 10 | | | | 10 | | | | | 6 | 16 | 20 | 0 | | | 6 | 26 | 76.9 | 0.0 | 0.0 | 0.0 | 26 | 76.9 | 0.0 | 0.0 | 23.1 | |
| | Kinnaur | 40 | 10 | | | | 9 | 19 | 13 | | | 9 | 22 | 23 | 0 | | | 18 | 41 | 56.1 | 0.0 | 0.0 | 0.0 | 41 | 56.1 | 0.0 | 0.0 | 43.9 | |
| | Sarahan WL | 20 | | | | | 0 | 10 | | | | 13 | 23 | 10 | 0 | | | 13 | 23 | 43.5 | 0.0 | 0.0 | 0.0 | 23 | 43.5 | 0.0 | 0.0 | 56.5 | |
| | Kullu | 20 | 10 | | | | 4 | 14 | | | | 10 | 20 | 0 | 0 | | | 4 | 24 | 83.3 | 0.0 | 0.0 | 0.0 | 24 | 83.3 | 0.0 | 0.0 | 16.7 | |
| | Kullu WL | 20 | | | | | 0 | 12 | | | | 1 | 14 | 27 | 12 | | | 1 | 14 | 27 | 44.4 | 0.0 | 0.0 | 27 | 44.4 | 0.0 | 0.0 | 3.7 | |
| | Lahaul & Spiti | 20 | | | | | 0 | 4 | | | | 3 | 12 | 19 | 4 | | | 3 | 12 | 19 | 21.1 | 0.0 | 0.0 | 19 | 21.1 | 0.0 | 0.0 | 51.9 | |
| | Spirit(W/L) | 20 | | | | | 0 | 4 | | | | 3 | 12 | 19 | 4 | | | 3 | 12 | 19 | 21.1 | 0.0 | 0.0 | 19 | 21.1 | 0.0 | 0.0 | 63.2 | |
| | Mandi | 20 | 6 | | | | 7 | 13 | 7 | | | 1 | 8 | 16 | 13 | 0 | | 1 | 15 | 29 | 44.8 | 0.0 | 0.0 | 29 | 44.8 | 0.0 | 0.0 | 51.7 | |
| | Mandi | 20 | 4 | | | | 7 | 10 | 7 | | | 3 | 10 | 11 | 0 | | | 9 | 20 | 55.0 | 0.0 | 0.0 | 0.0 | 20 | 55.0 | 0.0 | 0.0 | 45.0 | |
| | Kotgarh | 20 | 4 | | | | 7 | 11 | 7 | | 1 | 9 | 10 | 4 | 1 | | | 0 | 16 | 21 | 19.0 | 4.8 | 0.0 | 21 | 19.0 | 4.8 | 0.0 | 76.2 | |
| | Shimla | 21 | | | | | 10 | 10 | 6 | | | 5 | 11 | 6 | 0 | | | 0 | 15 | 21 | 28.6 | 0.0 | 0.0 | 21 | 28.6 | 0.0 | 0.0 | 71.4 | |
| | Rampur | 21 | | | | | 10 | 10 | 6 | | | 9 | 12 | 6 | 0 | | | 0 | 11 | 19 | 23 | 13.0 | 0.0 | 19 | 23 | 13.0 | 0.0 | 4.3 | |
| | Theog | 20 | | | | | 1 | 11 | 3 | | | 9 | 12 | 3 | 0 | | | 0 | 11 | 19 | 23 | 13.0 | 0.0 | 19 | 23 | 13.0 | 0.0 | 82.6 | |
| Total of Territorial | | 341 | 46 | 0 | 0 | 0 | 2 | 100 | 148 | 94 | 1 | 0 | 5 | 130 | 230 | 140 | 1 | 0 | 7 | 230 | 378 | 37.0 | 0.3 | 0.0 | 1.9 | 60.8 | 100.0 | | |
| Kangra | Bijnath | 3 | | | | | | | | | | 1 | 1 | 0 | 0 | | | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | | | | | 1 | 4 | 5 | 0 | | | 1 | 4 | 5 | 0.0 | 0.0 | 0.0 | 5 | 0.0 | 0.0 | 0.0 | 80.0 | |
| Mandi | Mandi | 3 | | | | | | | | | | 2 | 2 | 0 | 0 | | | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 2 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | | | | | 1 | 1 | 0 | 0 | | | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | | | | | | 4 | 4 | 0 | 0 | | | 4 | 4 | 4 | 0.0 | 0.0 | 0.0 | 4 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | 9 | | | | 1 | 11 | 21 | 9 | | | 1 | 11 | 21 | 42.9 | 0.0 | 0.0 | 21 | 42.9 | 0.0 | 0.0 | 52.4 | |
| Shimla | Theog | 1 | | | | | | 1 | | | | 1 | 1 | 0 | 0 | | | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | | | | | | | 5 | 5 | 0 | 0 | | | 5 | 5 | 5 | 0.0 | 0.0 | 0.0 | 5 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | | | | | 2 | 2 | 0 | 0 | | | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 2 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | | | | | 2 | 2 | 0 | 0 | | | 2 | 2 | 2 | 0.0 | 0.0 | 0.0 | 2 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 2 | 33 | 44 | 9 | 0 | 0 | 2 | 33 | 44 | 20.5 | 0.0 | 0.0 | 4.5 | 75.0 | 100.0 | | | |
| Grand Total | | 400 | 46 | 0 | 0 | 0 | 2 | 100 | 148 | 103 | 1 | 0 | 7 | 163 | 274 | 149 | 1 | 0 | 9 | 263 | 422 | 35.3 | 0.2 | 0.0 | 2.1 | 62.3 | 100.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

6) Primary School

| District | Division | No of Respondents Interviewed (n) | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Division Total | | | | | | | | | |
|-----------------------------|----------------|-----------------------------------|------------|------------|----------|-------------|----------|----------|------------|------------|----------|-------------|----------|------------|------------|------------|----------|-------------|------------|---------------------|------------|------------|-------------|------------|--------------|------------|------------|--------------|------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | | | | | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | | | | |
| Bilaspur | Bilaspur | 60 | 35 | | | | | | | | | | 20 | | | | | | 55 | | | | | 55 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Bharmour | 20 | 11 | | | | | | | | | | 9 | 20 | 0 | 0 | | | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Chamba WL | 20 | | | | | | | | | | | 0 | 20 | 20 | 0 | | | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Pangi | 20 | 10 | | | | | | | | | | 10 | 20 | 0 | 0 | | | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Kinnaur | 40 | 16 | | | | | | | | | | 17 | 33 | 0 | 0 | | | 0 | 33 | 100.0 | 0.0 | 0.0 | 0.0 | 33 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Sarahan WL | 20 | | | | | | | | | | | 13 | 13 | 0 | 0 | | | 0 | 13 | 100.0 | 0.0 | 0.0 | 0.0 | 13 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Kullu | 20 | 10 | | | | | | | | | | 9 | 19 | 0 | 0 | | | 0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Kullu WL | 20 | | | | | | | | | | | 0 | 20 | 20 | 0 | | | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Lahaul & Spiti | 20 | | | | | | | | | | | 0 | 17 | 17 | 0 | | | 0 | 17 | 100.0 | 0.0 | 0.0 | 0.0 | 17 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Spirit(W/L) | 20 | | | | | | | | | | | 0 | 17 | 17 | 0 | | | 0 | 17 | 100.0 | 0.0 | 0.0 | 0.0 | 17 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Mandi | 20 | 9 | | | | | | | | | | 10 | 19 | 0 | 0 | | | 0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Mandi | 20 | 6 | | | | | | | | | | 10 | 16 | 0 | 0 | | | 0 | 16 | 100.0 | 0.0 | 0.0 | 0.0 | 16 | 100.0 | 0.0 | 0.0 | 0.0 |
| | Kotgarh | 20 | 8 | | | | | | | | | | 2 | 9 | 15 | 0 | | | 4 | 19 | 78.9 | 0.0 | 0.0 | 0.0 | 19 | 78.9 | 0.0 | 0.0 | 21.1 |
| | Shimla | 21 | 6 | | | | | | | | | | 2 | 13 | 17 | 0 | | | 2 | 19 | 89.5 | 0.0 | 0.0 | 0.0 | 19 | 89.5 | 0.0 | 0.0 | 10.5 |
| | Rampur | 21 | 6 | | | | | | | | | | 7 | 18 | 0 | 0 | | | 3 | 21 | 85.7 | 0.0 | 0.0 | 0.0 | 21 | 85.7 | 0.0 | 0.0 | 14.3 |
| | Theog | 20 | 11 | | | | | | | | | | 3 | 14 | 7 | | | | 0 | 21 | 105.0 | 0.0 | 0.0 | 0.0 | 21 | 105.0 | 0.0 | 0.0 | 0.0 |
| Total of Territorial | | 341 | 122 | 0 | 0 | 0 | 0 | 5 | 127 | 180 | 0 | 0 | 4 | 184 | 302 | 0 | 0 | 9 | 311 | 97.1 | 0.0 | 0.0 | 0.0 | 2.9 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Bijnath | 3 | | | | | | | | | | | 3 | 3 | 0 | 0 | | | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 |
| Kullu | Kullu | 11 | | | | | | | | | | | 6 | 6 | 0 | 0 | | | 0 | 6 | 85.7 | 0.0 | 0.0 | 0.0 | 6 | 85.7 | 0.0 | 0.0 | 14.3 |
| Mandi | Mandi | 3 | | | | | | | | | | | 2 | 2 | 0 | 0 | | | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 |
| Kangra | Palampur | 1 | | | | | | | | | | | 1 | 1 | 0 | 0 | | | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 |
| Kullu | Parvati | 10 | | | | | | | | | | | 10 | 10 | 0 | 0 | | | 0 | 10 | 100.0 | 0.0 | 0.0 | 0.0 | 10 | 100.0 | 0.0 | 0.0 | 0.0 |
| Kinnaur | Kinnaur | 21 | | | | | | | | | | | 21 | 21 | 0 | 0 | | | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 |
| Shimla | Theog | 1 | | | | | | | | | | | 1 | 1 | 0 | 0 | | | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 |
| Solan | Nalagarh | 5 | | | | | | | | | | | 5 | 5 | 0 | 0 | | | 0 | 5 | 100.0 | 0.0 | 0.0 | 0.0 | 5 | 100.0 | 0.0 | 0.0 | 0.0 |
| Shimla | Kotgarh | 2 | | | | | | | | | | | 2 | 2 | 0 | 0 | | | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 |
| Solan | Baddi | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

20.2 Mode of Transportation for Government Offices and etc.
7) Secondary School

| District | Division | No of Respondents Interviewed (n) | JFM | | | | | Non JFM | | | | | Total | | | | | % to Division Total | | | | | | | | | | |
|-----------------------------------|-------------|-----------------------------------|------------|------------|----------|-------------|-----------|------------|------------|----------|-------------|----------|----------|------------|------------|-------------|----------|---------------------|------------|-----------|-------------|-------------|------------|------------|------------|-------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Total | | | | | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Total | | | | | |
| Bilaspur | Bilaspur | 60 | 32 | | | | | 32 | 20 | | | | | 20 | 52 | 0 | 0 | 0 | 0 | 0 | 52 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Bharmour | 20 | 11 | | | | | 11 | 4 | | | | | 4 | 15 | 0 | 0 | 0 | 0 | 0 | 15 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Chamba WL | 20 | | | | | | 0 | 19 | | | | | 19 | 19 | 0 | 0 | 0 | 0 | 0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Pangi | 20 | 5 | | | | | 5 | 10 | | | | | 10 | 15 | 0 | 0 | 0 | 0 | 0 | 15 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 10 | | | | | 10 | 17 | | | | | 17 | 27 | 0 | 0 | 0 | 0 | 0 | 27 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | | | | | | 0 | 13 | | | | | 13 | 13 | 0 | 0 | 0 | 0 | 0 | 13 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | 10 | | | | | 6 | 16 | | | | | 10 | 20 | 0 | 0 | 0 | 6 | 26 | 76.9 | 0.0 | 0.0 | 0.0 | 0.0 | 23.1 | 100.0 | |
| | Kullu WL | 20 | | | | | | 0 | 20 | | | | | 20 | 20 | 0 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spirit(W/L) | 20 | | | | | | 0 | 12 | | | | | 12 | 12 | 0 | 0 | 0 | 0 | 12 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Mandi | Karsog | 20 | 10 | | | | | 10 | 4 | | | | | 3 | 7 | 14 | 0 | 0 | 0 | 3 | 17 | 82.4 | 0.0 | 0.0 | 0.0 | 0.0 | 17.6 | 100.0 |
| | Mandi | 20 | 6 | | | | | 4 | 10 | | | | | 7 | 13 | 0 | 0 | 0 | 4 | 17 | 76.5 | 0.0 | 0.0 | 0.0 | 0.0 | 23.5 | 100.0 | |
| Shimla | Kotgarh | 20 | 5 | | | | | 9 | 14 | | | | | 3 | 11 | 13 | 0 | 0 | 12 | 23 | 52.0 | 0.0 | 0.0 | 0.0 | 0.0 | 48.0 | 100.0 | |
| | Rampur | 21 | 8 | | | | | 8 | 11 | | | | | 11 | 19 | 0 | 0 | 0 | 0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Theog | 20 | 7 | | | | | 2 | 9 | | | | | 4 | 11 | 0 | 0 | 0 | 2 | 13 | 84.6 | 0.0 | 0.0 | 0.0 | 0.0 | 15.4 | 100.0 | |
| Total of Territorial | | 341 | 104 | 0 | 0 | 0 | 21 | 125 | 159 | 0 | 0 | 0 | 0 | 6 | 165 | 263 | 0 | 0 | 0 | 27 | 290 | 90.7 | 0.0 | 0.0 | 0.0 | 9.3 | 100.0 | |
| Kangra | Bainmath | 3 | | | | | | 2 | 1 | | | | | 1 | 3 | 2 | 0 | 0 | 0 | 1 | 3 | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | 33.3 | 100.0 |
| Kullu | Kullu | 11 | | | | | | 6 | 6 | | | | | 6 | 6 | 0 | 0 | 0 | 0 | 6 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | 1 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | | 4 | 10 | | | | | 6 | 10 | 4 | 0 | 0 | 6 | 10 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | 21 | 21 | | | | | 21 | 21 | 0 | 0 | 0 | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | | | 1 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | | | 1 | 4 | | | | | 4 | 5 | 1 | 0 | 0 | 4 | 5 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 80.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 13 | 53 | 40 | 0 | 0 | 0 | 13 | 53 | 75.5 | 0.0 | 0.0 | 0.0 | 24.5 | 100.0 | |
| Grand Total | | 400 | 104 | 0 | 0 | 0 | 21 | 125 | 199 | 0 | 0 | 0 | 0 | 19 | 218 | 303 | 0 | 0 | 0 | 40 | 343 | 88.3 | 0.0 | 0.0 | 0.0 | 11.7 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.
8) College

| District | Division | No of Respondents Interviewed (n) | JFM | | | | | Non JFM | | | | | Total | | | | | % to Division Total | | | | | | | | | | |
|-----------------------------------|-------------|-----------------------------------|-----------|------------|----------|-------------|------------|------------|------------|----------|-------------|----------|----------|------------|------------|-------------|----------|---------------------|------------|------------|-------------|-------------|------------|------------|------------|-------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Total | | | | | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Total | | | | | |
| Bilaspur | Bilaspur | 60 | | | | | 1 | 36 | 37 | | | | | 20 | 20 | 0 | 0 | 0 | 1 | 56 | 57 | 0.0 | 0.0 | 0.0 | 1.8 | 98.2 | 100.0 | |
| | Bharmour | 20 | 2 | | | | | 11 | 13 | | | | | 9 | 12 | 5 | 0 | 0 | 0 | 20 | 23 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 80.0 | 100.0 |
| Chamba | Chamba WL | 20 | | | | | | 0 | 9 | | | | | 20 | 29 | 9 | 0 | 0 | 0 | 20 | 29 | 31.0 | 0.0 | 0.0 | 0.0 | 0.0 | 69.0 | 100.0 |
| | Pangi | 20 | 2 | | | | | 10 | 13 | | | | | 10 | 12 | 4 | 0 | 0 | 0 | 20 | 24 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | 83.3 | 100.0 |
| Kinnaur | Kinnaur | 40 | | | | | | 19 | 19 | | | | | 20 | 34 | 14 | 0 | 0 | 0 | 39 | 53 | 26.4 | 0.0 | 0.0 | 0.0 | 0.0 | 73.6 | 100.0 |
| | Sarahan WL | 20 | | | | | | 0 | 10 | | | | | 18 | 28 | 10 | 0 | 0 | 0 | 18 | 28 | 35.7 | 0.0 | 0.0 | 0.0 | 0.0 | 64.3 | 100.0 |
| Kullu | Kullu | 20 | 10 | | | | | 10 | 20 | | | | | 10 | 19 | 19 | 0 | 0 | 0 | 20 | 39 | 48.7 | 0.0 | 0.0 | 0.0 | 0.0 | 51.3 | 100.0 |
| | Kullu WL | 20 | | | | | | 0 | 2 | | | | | 1 | 20 | 23 | 2 | 0 | 1 | 20 | 23 | 8.7 | 0.0 | 0.0 | 4.3 | 87.0 | 100.0 | |
| Lahaul & Spiti | Spirit(W/L) | 20 | | | | | | 0 | 4 | | | | | 4 | 19 | 23 | 0 | 0 | 4 | 19 | 23 | 0.0 | 0.0 | 0.0 | 17.4 | 82.6 | 100.0 | |
| Mandi | Karsog | 20 | 10 | | | | | 1 | 11 | | | | | 1 | 9 | 16 | 0 | 0 | 1 | 10 | 27 | 59.3 | 0.0 | 0.0 | 3.7 | 37.0 | 100.0 | |
| | Mandi | 20 | 4 | | | | | 10 | 14 | | | | | 10 | 17 | 11 | 0 | 0 | 0 | 20 | 31 | 35.5 | 0.0 | 0.0 | 0.0 | 64.5 | 100.0 | |
| Shimla | Kotgarh | 20 | 4 | | | | | 10 | 14 | | | | | 10 | 10 | 4 | 0 | 0 | 0 | 20 | 24 | 16.7 | 0.0 | 0.0 | 0.0 | 83.3 | 100.0 | |
| | Rampur | 21 | | | | | | 10 | 10 | | | | | 10 | 16 | 6 | 0 | 0 | 0 | 20 | 26 | 23.1 | 0.0 | 0.0 | 0.0 | 76.9 | 100.0 | |
| | Theog | 20 | 7 | | | | | 11 | 11 | | | | | 9 | 12 | 3 | 0 | 0 | 0 | 20 | 23 | 13.0 | 0.0 | 0.0 | 0.0 | 87.0 | 100.0 | |
| Total of Territorial | | 341 | 32 | 0 | 0 | 1 | 128 | 161 | 71 | 0 | 0 | 0 | 0 | 194 | 271 | 103 | 0 | 0 | 5 | 322 | 432 | 23.8 | 0.0 | 0.0 | 1.6 | 94.5 | 100.0 | |
| Kangra | Bainmath | 3 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 1 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | 6 | 7 | | | | | 6 | 7 | 0 | 0 | 0 | 6 | 7 | 0.0 | 0.0 | 0.0 | 14.3 | 85.7 | 100.0 | | |
| Mandi | Mandi | 3 | | | | | | 1 | 2 | | | | | 1 | 2 | 1 | 0 | 0 | 1 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 50.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | 1 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Kullu | Parvati | 10 | | | | | | 10 | 10 | | | | | 10 | 10 | 0 | 0 | 0 | 10 | 10 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Kinnaur | Kinnaur | 21 | | | | | | 21 | 21 | | | | | 21 | 21 | 0 | 0 | 0 | 21 | 21 | 0.0 | 0.0 | 0.0 | 4.8 | 95.2 | 100.0 | | |
| Shimla | Theog | 1 | | | | | | 1 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Solan | Nalagarh | 5 | | | | | | 5 | 5 | | | | | 5 | 5 | 0 | 0 | 0 | 5 | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Shimla | Kotgarh | 2 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Solan | Baddi | 2 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | 53 | 1 | 0 | 0 | 2 | 50 | 53 | 1.9 | 0.0 | 0.0 | 3.8 | 94.3 | 100.0 | |
| Grand Total | | 400 | 32 | 0 | 0 | 1 | 128 | 161 | 72 | 0 | 0 | 0 | 0 | 8 | 244 | 324 | 0 | 0 | 9 | 372 | 485 | 21.4 | 0.0 | 0.0 | 1.9 | 76.7 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

9) Angnawadi

| District | Division | No of Respondents Interviewed (n) | JFM | | | | | | Non JFM | | | | | | Total | | | | | | % to Division Total | | | | | |
|-----------------------------------|----------------|-----------------------------------|------------|------------|----------|-------------|----------|------------|------------|------------|----------|-------------|----------|------------|------------|------------|----------|-------------|----------|------------|---------------------|------------|------------|-------------|------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | Total | 1 | 2 | 3 | 4 | 5 | Total | 1 | 2 | 3 | 4 | 5 | Total | 1 | 2 | 3 | 4 | 5 | Total |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | |
| Bilaspur | Bilaspur | 60 | 38 | | | | | 39 | 19 | | | | | 19 | 57 | 0 | 0 | 0 | 1 | 58 | 98.3 | 0.0 | 0.0 | 0.0 | 1.7 | 100.0 |
| | Bharmour | 20 | 11 | | | | | 11 | 9 | | | | | 9 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Chamba WL | 20 | | | | | | | 20 | | | | | 20 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Pangi | 20 | 10 | | | | | 10 | 10 | | | | | 10 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kinnaur | 40 | 19 | | | | | 19 | 18 | | | | | 18 | 37 | 0 | 0 | 0 | 37 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | | | | | | 0 | 18 | | | | | 18 | 18 | 0 | 0 | 0 | 18 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu | 20 | 10 | | | | | 10 | 10 | | | | | 10 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | | | 0 | 20 | | | | | 20 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Lahaul & Spiti | 20 | | | | | | 0 | 19 | | | | | 19 | 19 | 0 | 0 | 0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Mandi | 20 | 10 | | | | | 10 | 10 | | | | | 10 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Mandi | 20 | 10 | | | | | 10 | 10 | | | | | 10 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | 20 | 10 | | | | | 10 | 10 | | | | | 10 | 20 | 0 | 0 | 0 | 20 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Shimla | 21 | 10 | | | | | 10 | 11 | | | | | 11 | 21 | 0 | 0 | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Rampur | 20 | 10 | | | | | 1 | 9 | | | | | 9 | 19 | 0 | 0 | 0 | 11 | 20 | 95.0 | 0.0 | 0.0 | 0.0 | 5.0 | 100.0 |
| | Theog | 20 | 10 | | | | | 11 | 9 | | | | | 9 | 19 | 0 | 0 | 0 | 11 | 20 | 95.0 | 0.0 | 0.0 | 0.0 | 5.0 | 100.0 |
| Total of Territorial | | 341 | 138 | 0 | 0 | 0 | 2 | 140 | 193 | 0 | 0 | 0 | 0 | 193 | 331 | 0 | 0 | 0 | 2 | 333 | 99.4 | 0.0 | 0.0 | 0.0 | 0.6 | 100.0 |
| Kangra | Bijnath | 3 | | | | | | 0 | 3 | | | | | 3 | 3 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | 5 | 5 | | | 1 | | 6 | 5 | 0 | 0 | 1 | 6 | 83.3 | 0.0 | 0.0 | 16.7 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | 1 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | | 10 | 10 | | | | | 10 | 10 | 0 | 0 | 0 | 10 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | 21 | 21 | | | | | 21 | 21 | 0 | 0 | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | | | 1 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | | | 5 | 5 | | | | | 5 | 5 | 0 | 0 | 0 | 5 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Baddi | 2 | | | | | | 2 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 0 | 0 | 1 | 0 | 53 | 52 | 0 | 0 | 1 | 0 | 53 | 98.1 | 0.0 | 0.0 | 1.9 | 0.0 | 100.0 |
| Grand Total | | 400 | 138 | 0 | 0 | 0 | 2 | 140 | 245 | 0 | 0 | 1 | 0 | 246 | 383 | 0 | 0 | 1 | 2 | 386 | 99.2 | 0.0 | 0.0 | 0.3 | 0.5 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

9) PHC

| District | Division | No of Respondents Interviewed (n) | JFM | | | | | | Non JFM | | | | | | Total | | | | | | % to Division Total | | | | | | |
|-----------------------------------|----------------|-----------------------------------|-----------|------------|----------|-------------|-----------|------------|------------|------------|----------|-------------|----------|------------|------------|------------|----------|-------------|----------|------------|---------------------|-------------|------------|-------------|------------|-------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | Total | 1 | 2 | 3 | 4 | 5 | Total | 1 | 2 | 3 | 4 | 5 | Total | 1 | 2 | 3 | 4 | 5 | Total | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | |
| Bilaspur | Bilaspur | 60 | 18 | | | 6 | 21 | 45 | 13 | | | | 7 | 20 | 31 | 0 | 0 | 6 | 28 | 65 | 47.7 | 0.0 | 0.0 | 9.2 | 43.1 | 100.0 | |
| | Bharmour | 20 | 11 | | | | 2 | 13 | 9 | | | | | 9 | 20 | 0 | 0 | 0 | 2 | 23 | 90.9 | 0.0 | 0.0 | 0.0 | 9.1 | 100.0 | |
| | Chamba WL | 20 | | | | | | 0 | 18 | | | | | 5 | 23 | 18 | 0 | 0 | 5 | 23 | 78.3 | 0.0 | 0.0 | 0.0 | 21.7 | 100.0 | |
| | Pangi | 20 | 10 | | | | | 10 | 10 | | | | | 6 | 16 | 20 | 0 | 0 | 6 | 26 | 76.9 | 0.0 | 0.0 | 0.0 | 23.1 | 100.0 | |
| | Kinnaur | 40 | 17 | | | | | 17 | 15 | | | | | 11 | 16 | 32 | 0 | 0 | 1 | 33 | 97.0 | 0.0 | 0.0 | 0.0 | 3.0 | 100.0 | |
| | Sarahan WL | 20 | | | | | | 0 | 17 | | | | | 1 | 18 | 17 | 0 | 0 | 1 | 18 | 94.4 | 0.0 | 0.0 | 0.0 | 5.6 | 100.0 | |
| | Kullu | 20 | 10 | | | | | 5 | 15 | 7 | | | | 8 | 15 | 17 | 0 | 0 | 13 | 30 | 56.7 | 0.0 | 0.0 | 0.0 | 43.3 | 100.0 | |
| | Kullu WL | 20 | | | | | | 0 | 15 | | | | | 5 | 20 | 15 | 0 | 0 | 5 | 20 | 75.0 | 0.0 | 0.0 | 0.0 | 25.0 | 100.0 | |
| | Lahaul & Spiti | 20 | | | | | | 0 | 19 | | | | | 19 | 19 | 0 | 0 | 0 | 0 | 19 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Mandi | 20 | 10 | | | | | 2 | 12 | 5 | | | 1 | 9 | 15 | 15 | 0 | 0 | 1 | 11 | 27 | 55.6 | 0.0 | 0.0 | 3.7 | 40.7 | 100.0 |
| | Mandi | 20 | 6 | | | | | 4 | 10 | 7 | | | | 4 | 11 | 13 | 0 | 0 | 8 | 21 | 61.9 | 0.0 | 0.0 | 0.0 | 38.1 | 100.0 | |
| | Kotgarh | 20 | 5 | | | | | 9 | 14 | 5 | | | | 7 | 12 | 10 | 0 | 0 | 16 | 26 | 38.5 | 0.0 | 0.0 | 0.0 | 61.5 | 100.0 | |
| | Shimla | 21 | 5 | | | | | 2 | 7 | 10 | | | | 3 | 13 | 15 | 0 | 0 | 5 | 20 | 75.0 | 0.0 | 0.0 | 0.0 | 25.0 | 100.0 | |
| | Theog | 20 | 4 | | | | | 8 | 12 | 8 | | | | 3 | 11 | 12 | 0 | 0 | 11 | 23 | 52.2 | 0.0 | 0.0 | 0.0 | 47.8 | 100.0 | |
| Total of Territorial | | 341 | 96 | 0 | 0 | 6 | 53 | 155 | 158 | 0 | 0 | 1 | 0 | 159 | 218 | 254 | 0 | 0 | 7 | 112 | 378 | 68.1 | 0.0 | 0.0 | 1.9 | 30.0 | 100.0 |
| Kangra | Bijnath | 3 | | | | | | 0 | 3 | | | | | 3 | 3 | 0 | 0 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | | 0 | 4 | | | 1 | | 5 | 4 | 0 | 0 | 1 | 0 | 5 | 80.0 | 0.0 | 0.0 | 20.0 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | | | 0 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | | | 0 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | | 0 | 10 | | | | | 10 | 10 | 0 | 0 | 0 | 0 | 10 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | | 0 | 21 | | | | | 21 | 21 | 0 | 0 | 0 | 0 | 21 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | | | 0 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Solan | Nalagarh | 5 | | | | | | 0 | 5 | | | | | 5 | 5 | 0 | 0 | 0 | 0 | 5 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | | | 0 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Solan | Baddi | 2 | | | | | | 0 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 | 0 | 52 | 49 | 0 | 0 | 1 | | | | | | | | | |

20.2 Mode of Transportation for Government Offices and etc.
10) Secondary School

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Total | Non JFM | | | | | Total | Total | | | | | % to Division Total | | | | | | | | | |
|-----------------------------------|------------|-----------------------------------|-----------|------------|----------|-------------|-----------|-----------|-----------|------------|----------|-------------|-----------|------------|------------|------------|----------|-------------|-----------|---------------------|-------------|------------|-------------|------------|------------|-------------|--------------|-------|-------|
| | | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | Total | | | | |
| | | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Foot | Motorcycle | Bicycle | Own Vehical | Bus | Total | | | | |
| Bilaspur | Bilaspur | 60 | 19 | | | | | 19 | 3 | | | | | 9 | 12 | 22 | 0 | 0 | 0 | 0 | 9 | 31 | 71.0 | 0.0 | 0.0 | 0.0 | 0.0 | 29.0 | 100.0 |
| | Bharmour | 20 | 9 | | | | | 9 | 8 | | | | | 8 | 17 | 0 | 0 | 0 | 0 | 0 | 17 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Chamba WL | 20 | | | | | | 0 | 5 | | | | | 15 | 20 | 5 | 0 | 0 | 0 | 15 | 20 | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 75.0 | 100.0 | |
| | Pangi | 20 | 10 | | | | | 10 | 10 | | | | | 6 | 16 | 20 | 0 | 0 | 0 | 6 | 26 | 76.9 | 0.0 | 0.0 | 0.0 | 0.0 | 23.1 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 15 | | | | | 15 | 3 | | | | | 1 | 4 | 18 | 0 | 0 | 0 | 1 | 19 | 94.7 | 0.0 | 0.0 | 0.0 | 0.0 | 5.3 | 100.0 | |
| | Sarahan WL | 20 | | | | | | 0 | 13 | | | | | 13 | 13 | 0 | 0 | 0 | 0 | 13 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Kullu | 20 | 6 | | | | | 6 | 12 | | | | | 8 | 16 | 14 | 0 | 0 | 0 | 14 | 28 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 | |
| | Kullu WL | 20 | | | | | | 0 | 10 | | | | | 11 | 21 | 10 | 0 | 0 | 0 | 11 | 21 | 47.6 | 0.0 | 0.0 | 0.0 | 0.0 | 52.4 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | 16 | | | | | 16 | 16 | 0 | 0 | 0 | 0 | 16 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Mandi | Karsog | 20 | | | | | | 0 | 5 | | | | 1 | 8 | 14 | 5 | 0 | 0 | 1 | 8 | 14 | 35.7 | 0.0 | 0.0 | 0.0 | 7.1 | 57.1 | 100.0 | |
| | Mandi | 20 | 4 | | | | | 4 | 3 | | | | | 3 | 7 | 0 | 0 | 0 | 0 | 7 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| | Kotgarh | 20 | 1 | | | | | 1 | 2 | | | | | 2 | 3 | 0 | 0 | 0 | 1 | 4 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | 100.0 | | |
| Shimla | Rampur | 21 | 2 | | | | | 3 | 5 | | | | | 0 | 2 | 0 | 0 | 0 | 3 | 5 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 100.0 | | |
| | Theog | 20 | 4 | | | | | 4 | 5 | | | | | 5 | 9 | 0 | 0 | 0 | 0 | 9 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Total of Territorial | | 341 | 70 | 0 | 0 | 0 | 10 | 80 | 91 | 0 | 0 | 1 | 58 | 150 | 161 | 0 | 0 | 1 | 68 | 230 | 70.0 | 0.0 | 0.0 | 0.0 | 0.4 | 29.6 | 100.0 | | |
| Kangra | Bainath | 3 | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 | | |
| Kullu | Kullu | 11 | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 | | |
| Mandi | Mandi | 3 | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 | | |
| Kangra | Palampur | 1 | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 | | |
| Kullu | Parvati | 10 | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 | | |
| Kinnaur | Kinnaur | 21 | | | | | | 0 | 1 | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Theog | 1 | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 | | |
| Solan | Nalagarh | 5 | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 | | |
| Shimla | Kotgarh | 2 | | | | | | 0 | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Solan | Baddi | 2 | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0.0 | | |
| Total of Graziers/ Grassla | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 100.0 | | |
| Grand Total | | 400 | 70 | 0 | 0 | 0 | 10 | 80 | 92 | 0 | 0 | 1 | 59 | 152 | 162 | 0 | 0 | 1 | 69 | 232 | 69.8 | 0.0 | 0.0 | 0.0 | 0.4 | 29.7 | 100.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

21. Participation in Community Organisations/ Village Governance (1)

21.1 How long have you been a member of different types of village organisations/ groups?

1) Ward Sabha

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | | | |
|-------------------------------------|------------|-----------------------------------|-----------|-----------|------------|----------|-----------|-----------|-----------|------------|----------|-----------|-----------|-----------|------------|-----------|-----------|-------------|-------------|-------------|-------------|--------------|-------|-------|
| | | | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | | |
| | | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | | |
| Bilaspur | Bilaspur | 60 | 4 | 2 | 1 | 1 | 8 | 1 | | | | 1 | 2 | 5 | 2 | 2 | 1 | 10 | 50.0 | 20.0 | 20.0 | 10.0 | 100.0 | |
| Chamba | Bharmour | 20 | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | | |
| | Chamba WL | 20 | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | | |
| | Pangi | 20 | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | | |
| Kinnaur | Kinnaur | 40 | | | 3 | 1 | 4 | | | | | | 0 | 0 | 0 | 3 | 1 | 4 | 0.0 | 0.0 | 7.5 | 25.0 | 100.0 | |
| | Sarahan WL | 20 | | | | | 0 | | | 2 | 2 | 1 | 5 | 0 | 2 | 2 | 1 | 5 | 0.0 | 40.0 | 40.0 | 20.0 | 100.0 | |
| Kullu | Kullu | 20 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| | Kullu WL | 20 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| Lahaul & Spiti | Spi(W/L) | 20 | | | | | 0 | | | 1 | | | 1 | 0 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Mandi | Karsog | 20 | 1 | | 3 | 2 | 6 | | | | | | 0 | 1 | 0 | 3 | 2 | 6 | 16.7 | 0.0 | 50.0 | 33.3 | 100.0 | |
| | Mandi | 20 | | | | | 0 | 2 | | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Kotgarh | 20 | 1 | | | 1 | 2 | | | | | | 2 | 2 | 1 | 0 | 0 | 3 | 4 | 25.0 | 0.0 | 0.0 | 75.0 | 100.0 |
| | Rampur | 21 | | | | 1 | 1 | | | | | | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| | Theog | 20 | 1 | 2 | 1 | | 4 | 1 | 1 | | | | 2 | 2 | 3 | 1 | 0 | 6 | 33.3 | 50.0 | 16.7 | 0.0 | 100.0 | |
| Total of Territorial | | 341 | 7 | 4 | 8 | 6 | 25 | 4 | 3 | 4 | 3 | 14 | 11 | 7 | 12 | 9 | 39 | 28.2 | 17.9 | 30.8 | 23.1 | 100.0 | | |
| Kangra | Bainath | 3 | | | | | 0 | | 1 | | | | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | 0 | | 2 | | 1 | 3 | 0 | 2 | 0 | 1 | 3 | 0.0 | 66.7 | 0.0 | 33.3 | 100.0 | | |
| Mandi | Mandi | 3 | | | | | 0 | | 2 | | | 2 | 0 | 2 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | | |
| Kangra | Palampur | 1 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Parvati | 10 | | | | | 0 | | 1 | 4 | | 5 | 0 | 1 | 4 | 0 | 5 | 0.0 | 20.0 | 80.0 | 0.0 | 100.0 | | |
| Kinnaur | Kinnaur | 21 | | | | | 0 | 3 | 7 | | | 10 | 3 | 7 | 0 | 0 | 10 | 30.0 | 70.0 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Theog | 1 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| Solan | Nalagarh | 5 | | | | | 0 | 2 | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| Solan | Baddi | 2 | | | | | 0 | 2 | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 7 | 14 | 4 | 1 | 26 | 7 | 14 | 4 | 1 | 26 | 26.9 | 53.8 | 15.4 | 3.8 | 100.0 | | |
| Grand Total | | 400 | 7 | 4 | 8 | 6 | 25 | 11 | 17 | 8 | 4 | 40 | 18 | 21 | 16 | 10 | 65 | 27.7 | 32.3 | 24.6 | 15.4 | 100.0 | | |

Source: Livelihood Survey, JICA Study Team (2017)

21.1 How long have you been a member of different types of village organisations/ groups?

2) Gram Sabha

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | |
|-------------------------------------|------------|-----------------------------------|-----------|-----------|------------|----------|------------|-----------|------------|------------|----------|------------|-----------|------------|------------|-----------|------------|-------------|-------------|-------------|------------|--------------|
| | | | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total |
| | | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | |
| Bilaspur | Bilaspur | 60 | 6 | 17 | 6 | 4 | 33 | 1 | 16 | 1 | 1 | 19 | 7 | 33 | 7 | 5 | 52 | 13.5 | 63.5 | 13.5 | 9.6 | 100.0 |
| Chamba | Bharmour | 20 | | 10 | | 1 | 11 | 1 | 7 | 1 | | 9 | 1 | 17 | 1 | 1 | 20 | 5.0 | 85.0 | 5.0 | 5.0 | 100.0 |
| | Chamba WL | 20 | | | | | 0 | | 18 | 2 | | 20 | 0 | 18 | 2 | 0 | 20 | 0.0 | 90.0 | 10.0 | 0.0 | 100.0 |
| | Pangi | 20 | 2 | 8 | | | 10 | | 10 | | | 10 | 2 | 18 | 0 | 0 | 20 | 10.0 | 90.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | | 11 | 7 | 1 | 19 | 1 | 14 | 3 | | 18 | 1 | 25 | 10 | 1 | 37 | 2.7 | 67.6 | 27.0 | 2.7 | 100.0 |
| | Sarahan WL | 20 | | | | | 0 | 1 | 12 | 6 | 1 | 20 | 1 | 12 | 6 | 1 | 20 | 5.0 | 60.0 | 30.0 | 5.0 | 100.0 |
| Kullu | Kullu | 20 | | 9 | 1 | | 10 | 2 | 8 | | | 10 | 2 | 17 | 1 | 0 | 20 | 10.0 | 85.0 | 5.0 | 0.0 | 100.0 |
| | Kullu WL | 20 | | | | | 0 | | 15 | | | 15 | 0 | 15 | 0 | 0 | 15 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spi(W/L) | 20 | | | | | 0 | 2 | 14 | 4 | | 20 | 2 | 14 | 4 | 0 | 20 | 10.0 | 70.0 | 20.0 | 0.0 | 100.0 |
| Mandi | Karsog | 20 | 1 | 4 | 3 | 1 | 9 | 3 | 5 | 2 | | 10 | 4 | 9 | 5 | 1 | 19 | 21.1 | 47.4 | 26.3 | 5.3 | 100.0 |
| | Mandi | 20 | 3 | 7 | | | 10 | 1 | 5 | 2 | 1 | 9 | 4 | 12 | 2 | 1 | 19 | 21.1 | 63.2 | 10.5 | 5.3 | 100.0 |
| Shimla | Kotgarh | 20 | 2 | 6 | 2 | | 10 | 1 | 5 | 2 | 2 | 10 | 3 | 11 | 4 | 2 | 20 | 15.0 | 55.0 | 20.0 | 10.0 | 100.0 |
| | Rampur | 21 | 1 | 4 | 4 | 1 | 10 | 1 | 5 | 3 | | 9 | 2 | 9 | 7 | 1 | 19 | 10.5 | 47.4 | 36.8 | 5.3 | 100.0 |
| | Theog | 20 | 2 | 8 | 1 | | 11 | 3 | 4 | 2 | | 9 | 5 | 12 | 3 | 0 | 20 | 25.0 | 60.0 | 15.0 | 0.0 | 100.0 |
| Total of Territorial | | 341 | 17 | 84 | 24 | 8 | 133 | 17 | 138 | 28 | 5 | 188 | 34 | 222 | 52 | 13 | 321 | 10.6 | 69.2 | 16.2 | 4.0 | 100.0 |
| Kangra | Bainath | 3 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Kullu | 11 | | | | | 0 | | 6 | | 1 | 7 | 0 | 6 | 0 | 1 | 7 | 0.0 | 85.7 | 0.0 | 14.3 | 100.0 |
| Mandi | Mandi | 3 | | | | | 0 | | 2 | | | 2 | 0 | 2 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Palampur | 1 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kullu | Parvati | 10 | | | | | 0 | | 7 | | 1 | 8 | 0 | 7 | 0 | 1 | 8 | 0.0 | 87.5 | 0.0 | 12.5 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | | | 0 | 1 | 18 | | 2 | 21 | 1 | 18 | 0 | 2 | 21 | 4.8 | 85.7 | 0.0 | 9.5 | 100.0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - |
| Solan | Nalagarh | 5 | | | | | 0 | 2 | 1 | | | 3 | 2 | 1 | 0 | 0 | 3 | 66.7 | 33.3 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - |
| Solan | Baddi | 2 | | | | | 0 | 2 | | | | 2 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 5 | 36 | 0 | 4 | 45 | 5 | 36 | 0 | 4 | 45 | 11.1 | 80.0 | 0.0 | 8.9 | 100.0 |
| Grand Total | | 400 | 17 | 84 | 24 | 8 | 133 | 22 | 174 | 28 | 9 | 233 | 39 | 258 | 52 | 17 | 366 | 10.7 | 70.5 | 14.2 | 4.6 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

21.1 How long have you been a member of different types of village organisations/ groups?

3) JFMC

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | | | |
|----------------|------------|-----------------------------------|-----------|-----------|------------|----------|-------|-----------|-----------|------------|----------|-------|-----------|-----------|------------|----------|-------|-----------|-----------|------------|----------|-------|-------|-------|
| | | | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | | |
| | | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | | |
| Bilaspur | Bilaspur | 60 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| Chamba | Bharmour | 20 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| | Chamba WL | 20 | | | | | 0 | | | | | | 2 | 2 | 0 | 0 | 2 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| | Pangi | 20 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| Kinnaur | Kinnaur | 40 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| | Sarahan WL | 20 | | | | | 0 | | | | | 1 | 1 | 0 | 0 | 0 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | | |
| Kullu | Kullu | 20 | | | 1 | | 1 | | | | | | 0 | 0 | 0 | 1 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| Lahaul & Spiti | Spi(W/L) | 20 | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | | |
| Mandi | Karsog | 20 | | | | 6 | 1 | 7 | | | | | | 0 | 0 | 0 | 6 | 1 | 7 | 0.0 | 0.0 | 85.7 | 14.3 | 100.0 |
| | Mandi | 20 | 4 | | | | 4 | | | | | | | | | | | | | | | | | |

21.1 How long have you been a member of different types of village organisations/ groups?

4) Village Forest Development Committee (VFDC)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | |
|-------------------------------------|------------|-----------------------------------|----------------|----------------|-----------------|---------------|----------|----------------|----------------|-----------------|---------------|----------|----------------|----------------|-----------------|---------------|----------|----------------|----------------|-----------------|---------------|--------------|
| | | | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total |
| Bilaspur | Bilaspur | 60 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Chamba | Bharmour | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Chamba WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Pangi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 40 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Sarahan WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kullu | Kullu | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Kullu WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Mandi | Karsog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Mandi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Rampur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Theog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kangra | Bajinath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | | | | | 0 | 1 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Solan | Baddi | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

21.1 How long have you been a member of different types of village organisations/ groups?

5) Eco Development Committee (EDC)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | |
|-------------------------------------|------------|-----------------------------------|----------------|----------------|-----------------|---------------|----------|----------------|----------------|-----------------|---------------|----------|----------------|----------------|-----------------|---------------|----------|----------------|----------------|-----------------|---------------|------------|
| | | | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total |
| Bilaspur | Bilaspur | 60 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Chamba | Bharmour | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| | Chamba WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| | Pangi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Kinnaur | Kinnaur | 40 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| | Sarahan WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Kullu | Kullu | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| | Kullu WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Mandi | Karsog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| | Mandi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Shimla | Kotgarh | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| | Rampur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| | Theog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Kangra | Bajinath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Kullu | Kullu | 11 | | | | | 0 | 1 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100 | 0 | 0 | 0 | 100 |
| Mandi | Mandi | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Kangra | Palampur | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Kullu | Parvati | 10 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Solan | Nalagarh | 5 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Solan | Baddi | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 100 | 0 | 0 | 0 | 100 |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 100 | 0 | 0 | 0 | 100 |

Source: Livelihood Survey, JICA Study Team (2017)

21.1 How long have you been a member of different types of village organisations/ groups?

6) SHG (Saving & Credit)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | |
|-----------------------------|------------|-----------------------------------|----------------|----------------|-----------------|---------------|----------|----------------|----------------|-----------------|---------------|----------|----------------|----------------|-----------------|---------------|-----------|----------------|----------------|-----------------|---------------|--------------|
| | | | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total | 1 Not known | 2 >10 years | 3 5-10 years | 4 <5 years | Total |
| Bilaspur | Bilaspur | 60 | | | | 1 | 1 | | | | | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Chamba | Bharmour | 20 | | | | | 0 | | | 1 | | 2 | 0 | 1 | 0 | 1 | 2 | 0.0 | 50.0 | 0.0 | 50.0 | 100 |
| | Chamba WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Pangi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 40 | | | 1 | 1 | 2 | | | | | 0 | 0 | 0 | 1 | 1 | 2 | 0.0 | 0.0 | 50.0 | 50.0 | 100.0 |
| | Sarahan WL | 20 | | | | | 0 | | | 1 | | 1 | 0 | 0 | 1 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Kullu WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Mandi | Karsog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Mandi | 20 | | | | | 0 | | | 1 | | 1 | 0 | 0 | 1 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 20 | | | | | 0 | | | 1 | | 2 | 0 | 1 | 0 | 1 | 2 | 0.0 | 50.0 | 0.0 | 50.0 | 100.0 |
| | Rampur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Theog | 20 | | | | | 0 | 1 | | | 1 | 2 | 1 | 0 | 0 | 1 | 2 | 50.0 | 0.0 | 0.0 | 50.0 | 100.0 |
| Total of Territorial | | 341 | 0 | 0 | 1 | 2 | 3 | 1 | 3 | 2 | 3 | 9 | 1 | 3 | 3 | 5 | 12 | 8.3 | 25.0 | 25.0 | 41.7 | 100.0 |
| Kangra | Bajinath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kullu | Kullu | 11 | | | | | 0 | 1 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kangra | Palampur | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kullu | Parvati | 10 | | | | | 0 | | | | 3 | 3 | 0 | 0 | 0 | 3 | 3 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | | | 4 | 4 | 0 | 0 | 0 | 4 | 4 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Solan | Nalagarh | 5 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Shimla | K | | | | | | | | | | | | | | | | | | | | | |

10) Farmer Producer Organisation

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | |
|-------------------------------------|------------|-----------------------------------|-----------|-----------|------------|----------|----------|-----------|-----------|------------|----------|----------|-----------|-----------|------------|----------|------------|--------------|------------|------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total |
| | | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | |
| Bilaspur | Bilaspur | 60 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Chamba | Bharmour | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Chamba WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Pangi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kinnaur | Kinnaur | 40 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Sarahan WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kullu | Kullu | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Kullu WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Mandi | Karsog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Mandi | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Shimla | Kotgarh | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Rampur | 21 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Theog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Total of Territorial | | 341 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | |
| Kangra | Bainath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kullu | Kullu | 11 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Mandi | Mandi | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kangra | Palampur | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kullu | Parvati | 10 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | 3 | | | 3 | 0 | 3 | 0 | 0 | 3 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Solan | Nalagarh | 5 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Solan | Baddi | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 4 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Grand Total | | 400 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 4 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

21.1 How long have you been a member of different types of village organisations/ groups?

11) Mahila Mandal

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | | |
|-------------------------------------|------------|-----------------------------------|-----------|-----------|------------|----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-------------|-------------|-------------|-------------|--------------|-------|
| | | | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | |
| | | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | |
| Bilaspur | Bilaspur | 60 | 1 | | 1 | 5 | 7 | | | | | 0 | 1 | 0 | 1 | 5 | 7 | 14.3 | 0.0 | 14.3 | 71.4 | 100.0 | |
| Chamba | Bharmour | 20 | 1 | | | | 1 | | | | | 0 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Chamba WL | 20 | | | | | 0 | 1 | 2 | | 1 | 4 | 1 | 2 | 0 | 1 | 4 | 25.0 | 50.0 | 0.0 | 25.0 | 100.0 | |
| | Pangi | 20 | 2 | | 1 | | 3 | | | | | 0 | 2 | 0 | 1 | 0 | 3 | 66.7 | 0.0 | 33.3 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 40 | | 1 | 1 | 1 | 3 | 1 | 2 | 2 | | 5 | 1 | 3 | 3 | 1 | 8 | 12.5 | 37.5 | 37.5 | 12.5 | 100.0 | |
| | Sarahan WL | 20 | | | | | 0 | | 4 | | 1 | 5 | 0 | 4 | 0 | 1 | 5 | 0.0 | 80.0 | 0.0 | 20.0 | 100.0 | |
| Kullu | Kullu | 20 | | | 1 | | 1 | | 3 | 2 | | 5 | 0 | 3 | 3 | 0 | 6 | 0.0 | 50.0 | 50.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | | 0 | | 4 | 1 | | 5 | 0 | 4 | 1 | 0 | 5 | 0.0 | 80.0 | 20.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | 2 | 7 | 2 | | 11 | 2 | 7 | 2 | 0 | 11 | 18.2 | 63.6 | 18.2 | 0.0 | 100.0 | |
| Mandi | Karsog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | | |
| | Mandi | 20 | | | | | 0 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Shimla | Kotgarh | 20 | | 2 | | | 2 | 2 | 2 | 1 | | 5 | 2 | 4 | 1 | 0 | 7 | 28.6 | 57.1 | 14.3 | 0.0 | 100.0 | |
| | Rampur | 21 | | | 2 | 1 | 3 | | | | | 0 | 0 | 0 | 2 | 1 | 3 | 0.0 | 0.0 | 66.7 | 33.3 | 100.0 | |
| | Theog | 20 | | | | 1 | 1 | | | | | 0 | 0 | 0 | 0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Total of Territorial | | 341 | 4 | 3 | 6 | 8 | 21 | 6 | 24 | 8 | 3 | 41 | 10 | 27 | 14 | 11 | 62 | 16.1 | 43.5 | 22.6 | 17.7 | 100.0 | |
| Kangra | Bainath | 3 | | | | | 0 | | 1 | | | 1 | 0 | 0 | 1 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | | 0 | | 2 | | | 1 | 3 | 0 | 2 | 0 | 1 | 3 | 0.0 | 66.7 | 0.0 | 33.3 | 100.0 |
| Mandi | Mandi | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | | |
| Kangra | Palampur | 1 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | | 0 | | | | | 4 | 4 | 0 | 0 | 4 | 4 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | 3 | 1 | 7 | 11 | 0 | 3 | 1 | 7 | 11 | 0.0 | 27.3 | 9.1 | 63.6 | 100.0 | |
| Shimla | Theog | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Solan | Nalagarh | 5 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Shimla | Kotgarh | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Solan | Baddi | 2 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 12 | 20 | 0 | 6 | 2 | 12 | 20 | 0.0 | 30.0 | 10.0 | 60.0 | 100.0 | |
| Grand Total | | 400 | 4 | 3 | 6 | 8 | 21 | 6 | 30 | 10 | 15 | 61 | 10 | 33 | 16 | 23 | 82 | 12.2 | 40.2 | 19.5 | 28.0 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

12) Yuvak Mandal

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | Non JFM | | | | | Total | | | | | Total (%) | | | | |
|-----------------------------|------------|-----------------------------------|-----------|-----------|------------|----------|----------|-----------|-----------|------------|----------|-----------|-----------|-----------|------------|----------|-----------|------------|-------------|-------------|-------------|--------------|
| | | | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total | 1 | 2 | 3 | 4 | Total |
| | | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | | Not known | >10 years | 5-10 years | <5 years | |
| Bilaspur | Bilaspur | 60 | | | 2 | | 2 | | | | 1 | 1 | 0 | 0 | 2 | 1 | 3 | 0.0 | 0.0 | 66.7 | 33.3 | 100.0 |
| Chamba | Bharmour | 20 | | | | | 0 | | 1 | | | 1 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| | Chamba WL | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Pangi | 20 | | 1 | | | 1 | | | | | 0 | 0 | 1 | 0 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kinnaur | Kinnaur | 40 | | | | | 0 | | | | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| | Sarahan WL | 20 | | | | | 0 | | 3 | 1 | | 4 | 0 | 3 | 1 | 0 | 4 | 0.0 | 75.0 | 25.0 | 0.0 | 100.0 |
| Kullu | Kullu | 20 | | 1 | | 1 | 2 | | | | 2 | 2 | 0 | 1 | 0 | 3 | 4 | 0.0 | 25.0 | 0.0 | 75.0 | 100.0 |
| | Kullu WL | 20 | | | | | 0 | | | 1 | | 1 | 0 | 0 | 1 | 0 | 1 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | 0 | | 3 | 1 | 1 | 4 | 0 | 3 | 0 | 1 | 4 | 0.0 | 75.0 | 0.0 | 25.0 | 100.0 |
| Mandi | Karsog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Mandi | 20 | | 2 | | | 2 | | | | | 0 | 0 | 2 | 0 | 0 | 2 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Kotgarh | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| | Rampur | 21 | | 1 | | | 1 | 1 | | | | 1 | 2 | 0 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| | Theog | 20 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Total of Territorial | | 341 | 1 | 4 | 2 | 1 | 8 | 1 | 7 | 2 | 5 | 15 | 2 | 11 | 4 | 6 | 23 | 8.7 | 47.8 | 17.4 | 26.1 | 100.0 |
| Kangra | Bainath | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kullu | Kullu | 11 | | | | | 0 | | | | 1 | 1 | 0 | 0 | 0 | 1 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kangra | Palampur | 1 | | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | | | | | 0.0 | |
| Kullu | Parvati | 10 | | | | | 0 | | | | 3 | 3 | 0 | 0 | 0 | 3 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | | 0 | | 6 | | | 6 | 0 | 6 | 0 | 0 | 6 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 |
| Shimla | Theog | 1 | | | | | 0 | | | | | | | | | | | | | | | |

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

21. Participation in Community Organisations/ Village Governance (2)

21.2 Who has the membership'

1) Ward Sabha

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Total | Non JFM | | | | Total | Total | | | | % to Total | | | | |
|-------------------------------------|------------|-----------------------------------|-----------|-------------|----------|------------------------------|-----------|-----------|-------------|----------|------------------------------|-----------|-----------|-------------|----------|------------------------------|------------|-------------|-------------|------------------------------|------------|
| | | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | |
| Bilaspur | Bilaspur | 60 | 3 | 1 | 1 | 5 | | | | | 0 | 3 | 1 | 1 | 5 | 60.0 | 20.0 | 20.0 | 0.0 | 100.0 | |
| Chamba | Bharmour | 20 | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Chamba WL | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Pangi | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Kinnaur | Kinnaur | 40 | 3 | 1 | | 4 | | | | 0 | 3 | 1 | 0 | 4 | 75.0 | 25.0 | 0.0 | 0.0 | 100.0 | | |
| | Sarahan WL | 20 | | | | 0 | 3 | 2 | 1 | 6 | 3 | 2 | 1 | 6 | 50.0 | 33.3 | 16.7 | 0.0 | 100.0 | | |
| Kullu | Kullu | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| | Kullu WL | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | | | | 1 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | | |
| | Karsog | 20 | 3 | 1 | | 4 | | | | 0 | 3 | 1 | 0 | 4 | 75.0 | 25.0 | 0.0 | 0.0 | 100.0 | | |
| Mandi | Mandi | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| | Kotgarh | 20 | 2 | | | 2 | 1 | 1 | | 2 | 3 | 1 | 0 | 6 | 75.0 | 25.0 | 0.0 | 0.0 | 100.0 | | |
| | Rampur | 21 | 1 | | | 1 | | | | 0 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| | Theog | 20 | 3 | 1 | | 4 | 1 | | | 1 | 4 | 1 | 0 | 6 | 80.0 | 20.0 | 0.0 | 0.0 | 100.0 | | |
| Total of Territorial | | 341 | 15 | 4 | 1 | 0 | 20 | 5 | 4 | 1 | 0 | 10 | 20 | 8 | 2 | 0 | 30 | 66.7 | 26.7 | 6.7 | 0.0 |
| Kangra | Bajinath | 3 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Kullu | 11 | | | | 0 | 3 | | | 3 | 3 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Mandi | Mandi | 3 | | | | 0 | 1 | 1 | | 2 | 1 | 1 | 0 | 2 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 | | |
| Kangra | Palampur | 1 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kullu | Parvati | 10 | | | | 0 | 4 | | | 4 | 4 | 0 | 0 | 4 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 2 | | | 2 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | | |
| Shimla | Theog | 1 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| Solan | Nalagarh | 5 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| Shimla | Kotgarh | 2 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| Solan | Baddi | 2 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 0 | 0 | 0 | 13 | 12 | 1 | 0 | 13 | 92.3 | 7.7 | 0.0 | 0.0 |
| Grand Total | | 400 | 15 | 4 | 1 | 0 | 20 | 17 | 5 | 1 | 0 | 23 | 32 | 9 | 2 | 0 | 43 | 74.4 | 20.9 | 4.7 | 0.0 |

Source: Livelihood Survey, JICA Study Team (2017)

21.2 Who has the membership'

2) Gram Sabha

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Total | Non JFM | | | | Total | Total | | | | % to Total | | | | |
|-------------------------------------|-----------------------------|-----------------------------------|------------|-------------|-----------|------------------------------|------------|------------|-------------|-----------|------------------------------|------------|------------|-------------|-----------|------------------------------|------------|-------------|-------------|------------------------------|-------------|
| | | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | |
| Bilaspur | Bilaspur | 60 | 20 | 9 | 2 | 8 | 39 | 14 | 4 | 1 | 19 | 34 | 13 | 3 | 8 | 58 | 58.6 | 22.4 | 5.2 | 13.8 | 100.0 |
| Chamba | Bharmour | 20 | 8 | 1 | 1 | 2 | 12 | 7 | 1 | | 9 | 15 | 2 | 1 | 3 | 21 | 71.4 | 9.5 | 4.8 | 14.3 | 100.0 |
| | Chamba WL | 20 | | | | 0 | 10 | 4 | 3 | 2 | 19 | 10 | 4 | 3 | 2 | 19 | 52.6 | 21.1 | 15.8 | 10.5 | 100.0 |
| | Pangi | 20 | 4 | 4 | 2 | 10 | 5 | 3 | 2 | 10 | 9 | 7 | 2 | 2 | 20 | 45.0 | 35.0 | 10.0 | 10.0 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 13 | 3 | | 3 | 19 | 10 | 1 | 6 | 18 | 23 | 4 | 1 | 9 | 37 | 62.3 | 10.8 | 2.7 | 24.3 | 100.0 |
| | Sarahan WL | 20 | | | | 0 | 13 | 5 | 2 | 4 | 24 | 13 | 5 | 2 | 4 | 24 | 54.2 | 20.8 | 8.3 | 16.7 | 100.0 |
| Kullu | Kullu | 20 | 8 | 1 | 1 | 10 | 4 | 5 | 1 | 11 | 12 | 5 | 2 | 2 | 21 | 57.1 | 23.8 | 9.5 | 9.5 | 100.0 | |
| | Kullu WL | 20 | | | | 0 | 8 | 2 | 3 | 3 | 16 | 8 | 2 | 3 | 3 | 16 | 50.0 | 12.5 | 18.8 | 18.8 | 100.0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | 11 | 3 | 1 | 5 | 20 | 11 | 3 | 1 | 5 | 20 | 55.0 | 15.0 | 5.0 | 25.0 | 100.0 |
| | Karsog | 20 | 5 | | 2 | 1 | 8 | 7 | 5 | | 12 | 12 | 5 | 2 | 1 | 20 | 60.0 | 25.0 | 10.0 | 5.0 | 100.0 |
| Mandi | Mandi | 20 | 10 | 4 | | 14 | 5 | 6 | | 11 | 15 | 10 | 0 | 0 | 25 | 60.0 | 40.0 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | 20 | 9 | 2 | | 11 | 7 | 1 | 1 | 10 | 16 | 3 | 1 | 1 | 21 | 76.2 | 14.3 | 4.8 | 4.8 | 100.0 | |
| Shimla | Rampur | 21 | 7 | 6 | | 13 | 5 | 5 | 2 | 13 | 12 | 11 | 2 | 1 | 26 | 46.2 | 42.3 | 7.7 | 3.8 | 100.0 | |
| | Theog | 20 | 8 | 3 | | 11 | 5 | 4 | | 9 | 13 | 7 | 0 | 0 | 20 | 65.0 | 35.0 | 0.0 | 0.0 | 100.0 | |
| | Total of Territorial | | 341 | 92 | 32 | 8 | 15 | 147 | 111 | 49 | 15 | 26 | 201 | 203 | 81 | 23 | 41 | 348 | 58.3 | 23.3 | 6.6 |
| Kangra | Bajinath | 3 | | | | 0 | 1 | | 2 | 3 | 1 | 0 | 2 | 0 | 3 | 33.3 | 0.0 | 66.7 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | 0 | 6 | | 1 | 7 | 6 | 0 | 1 | 0 | 7 | 85.7 | 0.0 | 14.3 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | 0 | 1 | 1 | | 2 | 1 | 1 | 0 | 0 | 2 | 50.0 | 50.0 | 0.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | 0 | 5 | 1 | | 6 | 5 | 1 | 0 | 0 | 6 | 83.3 | 16.7 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 13 | 4 | | 17 | 13 | 4 | 0 | 0 | 17 | 76.5 | 23.5 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| Solan | Nalagarh | 5 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| Solan | Baddi | 2 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | | |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 28 | 6 | 3 | 0 | 37 | 28 | 6 | 3 | 0 | 37 | 75.7 | 16.2 | 8.1 | 0.0 |
| Grand Total | | 400 | 92 | 32 | 8 | 15 | 147 | 139 | 55 | 18 | 26 | 238 | 231 | 87 | 26 | 41 | 385 | 60.0 | 22.6 | 6.8 | 10.6 |

Source: Livelihood Survey, JICA Study Team (2017)

21.2 Who has the membership'

3) JFMC

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Total | Non JFM | | | | Total | Total | | | | % to Total | | | |
|----------------|------------|-----------------------------------|-----------|-------------|----------|------------------------------|-------|-----------|-------------|----------|------------------------------|-------|-----------|-------------|----------|------------------------------|------------|-------------|----------|------------------------------|
| | | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse | 1 Male HH | 2 Female HH | 3 Spouse | 4 Both Head of HH and Spouse |
| Bilaspur | Bilaspur | 60 | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Chamba | Bharmour | 20 | | | | 0 | | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Chamba WL | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| | Pangi | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 40 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Sarahan WL | 20 | | | | 0 | 1 | | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | 1 | | | 1 | | | | 0 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Karsog | 20 | 4 | 2 | 1 | 7 | | | | 0 | 4 | 2 | 1 | 0 | 7 | 57.1 | 28.6 | 14.3 | 0.0 | 100.0 |
| Mandi | Mandi | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| | Kotgarh | 20 | 2 | | | 2 | | | | 0 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| | Rampur | 21 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | - | 0.0 | |
| Shimla | Theog | 20 | | | | 0 | | | | 0 | 0 | | | | | | | | | |

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

21.4 Advantages of being a member

2) Gram Sabha

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | Total | Non JFM | | | | | | Total | Total | | | | | | Total | | | |
|-------------------------------------|------------|-----------------------------------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|------------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|------------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-----------|------------|-----------|------------|
| | | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | | | |
| Bilaspur | Bilaspur | 60 | 29 | | | | | 2 | 31 | 10 | | | | | | | 7 | 17 | 39 | 0 | 0 | 0 | 0 | 0 | 9 | 48 |
| | Bharmour | 20 | 7 | | 1 | | | 1 | 2 | 11 | 6 | | | | | | 2 | 8 | 13 | 0 | 1 | 0 | 0 | 1 | 4 | 19 |
| Chamba | Chamba WL | 20 | | | | | | | 0 | 15 | | | | | | | 4 | 19 | 15 | 0 | 0 | 0 | 0 | 0 | 4 | 19 |
| | Pangi | 20 | 9 | | | | | | 2 | 11 | 8 | | | | | | 3 | 11 | 17 | 0 | 0 | 0 | 0 | 0 | 5 | 22 |
| Kinnaur | Kinnaur | 40 | 15 | | | | | 1 | 1 | 17 | 13 | 1 | 1 | | | | 1 | 16 | 28 | 11 | 1 | 0 | 1 | 1 | 2 | 33 |
| | Sarahan WL | 20 | | | | | | | 0 | 11 | | | | | | | 3 | 14 | 11 | 0 | 0 | 0 | 0 | 0 | 3 | 14 |
| Kullu | Kullu | 20 | 5 | | | | | | 4 | 9 | 9 | | | | | | 2 | 11 | 14 | 0 | 0 | 0 | 0 | 0 | 6 | 20 |
| | Kullu WL | 20 | | | | | | | 0 | 13 | | 1 | | | | | 4 | 18 | 13 | 0 | 1 | 0 | 0 | 0 | 4 | 18 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | 16 | | | | | | | 2 | 18 | 16 | 0 | 0 | 0 | 0 | 0 | 2 | 18 |
| Mandi | Karsog | 20 | 5 | | | | | | 1 | 6 | 3 | | | | | | 3 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 |
| | Mandi | 20 | 9 | | | | | | 9 | 4 | | | | | | | 4 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 13 |
| | Kotgah | 20 | 5 | | | | | 2 | 1 | 8 | 5 | | | | | | 4 | 9 | 10 | 0 | 0 | 0 | 0 | 2 | 5 | 17 |
| Shimla | Rampur | 21 | 6 | | | | | | 1 | 7 | 6 | | | | | | 1 | 7 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 14 |
| | Theog | 20 | 9 | | | | | | 1 | 10 | 3 | | | | | | 3 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 |
| Total of Territorial | | 341 | 99 | 0 | 1 | 0 | 4 | 15 | 119 | 122 | 1 | 2 | 0 | 0 | 0 | 33 | 158 | 221 | 1 | 3 | 0 | 0 | 0 | 4 | 48 | 277 |
| Kangra | Bajinath | 3 | | | | | | | 0 | 1 | | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Kullu | Kullu | 11 | | | | | | | 0 | 4 | | | | | | | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Mandi | Mandi | 3 | | | | | | | 0 | 2 | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Kangra | Palampur | 1 | | | | | | | 0 | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | | | | | | | 0 | 1 | | 3 | | | | | 4 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| Kinnaur | Kinnaur | 21 | | | | | | | 0 | 17 | 1 | 5 | | | | | 26 | 17 | 1 | 5 | 0 | 0 | 0 | 3 | 0 | 26 |
| Shimla | Theog | 1 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Nalagarh | 5 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgah | 2 | | | | | | | 0 | | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Solan | Baddi | 2 | | | | | | | 0 | 2 | | | | | | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 1 | 8 | 0 | 3 | 0 | 3 | 39 | 27 | 1 | 8 | 0 | 0 | 3 | 0 | 3 | 39 |
| Grand Total | | 400 | 99 | 0 | 1 | 0 | 4 | 15 | 119 | 122 | 1 | 2 | 0 | 0 | 33 | 197 | 248 | 2 | 11 | 0 | 0 | 7 | 48 | 316 | | |

Source: Livelihood Survey, JICA Study Team (2017)

21.4 Advantages of being a member

3) JFMC

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | Total | Non JFM | | | | | | Total | Total | | | | | | Total | | | |
|-------------------------------------|------------|-----------------------------------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|----------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|----------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|----------|-----------|-----------|----------|
| | | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Bharmour | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chamba | Chamba WL | 20 | | | | | | | 0 | 2 | | 1 | 1 | | | | 4 | 2 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| | Pangi | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Kinnaur | 40 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sarahan WL | 20 | | | | | | | 0 | 1 | | | | | | | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Kullu | Kullu | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kullu WL | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Karsog | 20 | 3 | | | | | | 1 | 4 | | | | | | | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| | Mandi | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kotgah | 20 | 2 | | | | | | 2 | | | | | | | | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Shimla | Rampur | 21 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Theog | 20 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Territorial | | 341 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 3 | 1 | 1 | 0 | 0 | 1 | 6 | 8 | 1 | 1 | 0 | 0 | 0 | 2 | 12 | |
| Kangra | Bajinath | 3 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 3 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Theog | 1 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nalagarh | 5 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgah | 2 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Baddi | 2 | | | | | | | 0 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/ Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | | 400 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 3 | 1 | 1 | 0 | 0 | 1 | 6 | 8 | 1 | 1 | 0 | 0 | 2 | 12 | | |

Source: Livelihood Survey, JICA Study Team (2017)

21.4 Advantages of being a member

4) SHG (Savings & Credit)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | Total | Non JFM | | | | | | Total | Total | | | | | | Total | | | |
|----------|----------|-----------------------------------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-------|---|---|---|
| | | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | | | |
| Bilaspur | Bilaspur | 60 | 1 | 1 | | | | | 2 | | | | | | | | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | Bharmour | 20 | | | | | | | 0 | 1 | | 1 | | | | | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

21.4 Advantages of being a member

5) SHG (IGA)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | Total | Non JFM | | | | | | Total | Total | | | | | | Total | | | | | |
|------------------------------------|------------|-----------------------------------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|----------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|----------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|----------|----------|----------|----------|----------|----------|
| | | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | | | | | |
| Bilaspur | Bilaspur | 60 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Bharmour | 20 | 1 | | | | | 1 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Chamba | Chamba WL | 20 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pangi | 20 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Kinnaur | 40 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sarahan WL | 20 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 20 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kullu WL | 20 | | | | | | 0 | 1 | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | 1 | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Mandi | Karsog | 20 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Mandi | 20 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Kotgarh | 20 | 1 | | | | | 1 | | | | | | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Shimla | Rampur | 21 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Theog | 20 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Territorial | | 341 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Kangra | Bajnath | 3 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Kullu | 11 | | | | | | 0 | 1 | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mandi | Mandi | 3 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kangra | Palampur | 1 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kullu | Parvati | 10 | | | | | | 0 | 1 | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinnaur | Kinnaur | 21 | | | | | | 0 | | | | 2 | | | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Shimla | Theog | 1 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Nagarh | 5 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shimla | Kotgarh | 2 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Solan | Badli | 2 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total of Graziers/Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Grand Total | | 400 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 4 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |

Source: Livelihood Survey, JICA Study Team (2017)

21.4 Advantages of being a member

6) Mahila Mandal

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | Total | Non JFM | | | | | | Total | Total | | | | | | Total | | | | | |
|------------------------------------|------------|-----------------------------------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-----------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-----------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|----------|----------|-----------|--|--|--|
| | | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | | | | | |
| Bilaspur | Bilaspur | 60 | 1 | 4 | 1 | | | 3 | | | | | | | 0 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | | | |
| | Bharmour | 20 | 1 | 1 | | | | 2 | | | | | | | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | |
| Chamba | Chamba WL | 20 | | | | | | 0 | 3 | 1 | 1 | | | | 5 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | | | | |
| | Pangi | 20 | 3 | 2 | | | | 5 | | | | | | | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | | | | |
| Kinnaur | Kinnaur | 40 | 3 | 2 | 1 | | | 4 | 2 | 1 | | | | | 3 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | | | | |
| | Sarahan WL | 20 | | | | | | 0 | 3 | 2 | | | | | 5 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | | | | |
| Kullu | Kullu | 20 | 1 | | 1 | | | 2 | 5 | | 2 | | | | 7 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 9 | | | | |
| | Kullu WL | 20 | | | | | | 0 | 4 | 1 | 2 | | | | 7 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | | | | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | | | 0 | 11 | | 4 | | | | 15 | 11 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 15 | | | | |
| Mandi | Karsog | 20 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | Mandi | 20 | | | | | | 0 | 1 | | 1 | | | | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | | | | |
| | Kotgarh | 20 | 1 | 1 | | | | 2 | 2 | | | | | | 4 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 6 | | | | |
| Shimla | Rampur | 21 | 2 | 1 | | | | 3 | | | | | | | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | | | |
| | Theog | 20 | 1 | | 1 | | | 2 | | | | | | | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | | | | |
| Total of Territorial | | 341 | 13 | 9 | 4 | 0 | 0 | 3 | 29 | 31 | 3 | 12 | 2 | 0 | 48 | 44 | 12 | 16 | 2 | 0 | 0 | 0 | 0 | 3 | 77 | | | |
| Kangra | Bajnath | 3 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Kullu | Kullu | 11 | | | | | | 0 | 1 | 1 | | | | | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | |
| Mandi | Mandi | 3 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Kangra | Palampur | 1 | | | | | | 0 | | | 1 | | | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | | |
| Kullu | Parvati | 10 | | | | | | 0 | 1 | | | | | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | | |
| Kinnaur | Kinnaur | 21 | | | | | | 0 | 8 | 6 | 2 | 1 | | | 17 | 8 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 17 | | | | |
| Shimla | Theog | 1 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Solan | Nagarh | 5 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Shimla | Kotgarh | 2 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Solan | Badli | 2 | | | | | | 0 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Total of Graziers/Grassland | | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 8 | 2 | 1 | 0 | 0 | 21 | 10 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | | | |
| Grand Total | | 400 | 13 | 9 | 4 | 0 | 0 | 3 | 29 | 41 | 11 | 14 | 3 | 0 | 69 | 54 | 20 | 18 | 3 | 0 | 0 | 0 | 0 | 3 | 98 | | | |

Source: Livelihood Survey, JICA Study Team (2017)

21.4 Advantages of being a member

7) Yuvak Mandal

| District | Division | No of Respondents Interviewed (a) | JFM | | | | | | Total | Non JFM | | | | | | Total | Total | | | | | | Total | | | | | |
|----------|------------|-----------------------------------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-------|-------------------------------------|-----------------|-------------------------------|-----------------------|----------------------------|-----------------------------------|-------|--|--|--|--|---|
| | | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | 1 Learn new skills and knowledge | 2 Save money | 3 Meet friends/ neighbours | 4 Better Marketing | 5 Better access to loan | 6 Others (unspecified reasons) | | | | | | |
| Bilaspur | Bilaspur | 60 | 1 | | 1 | | | 1 | 3 | 1 | | | | | 1 | 2 | | | | | | | 0 | | | | | 5 |
| | Bharmour | 20 | | | | | | 0 | | 1 | | | | | 1 | | | | | | | | 0 | | | | | 1 |
| Chamba | Chamba WL | 20 | | | | | | 0 | | | | | | | 0 | | | | | | | | 0 | | | | | 0 |
| | Pangi | 20 | | | | | | 0 | | | | | | | 0 | | | | | | | | 0 | | | | | 0 |
| Kinnaur | Kinnaur | 40 | | | | | | 0 | | 1 | | | | | 1 | | | | | | | | 0 | | | | | 1 |
| | Sarahan WL | 20 | | | | | | 0 | 2 | | 1 | | | | 3 | | | | | | | | 0 | | | | | 3 |
| Kullu | Kullu | 20 | 2 | | 1 | | | 3 | 2 | | | | | | 2 | | | | | | | | 0 | | | | | 5 |
| | Kullu WL | 20 | | | | </ | | | | | | | | | | | | | | | | | | | | | | |

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

21. Participation in Community Organisations/ Village Governance (5)

21.5 Frequency of Attending Meetings

1) Ward Sabha

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Non JFM | | | | Total | | | | Total (%) | | | |
|------------------------------------|------------|-----------------------------------|-------------|-------------|----------|-----------|-------------|-------------|----------|-----------|-------------|-------------|----------|-----------|-------------|-------------|------------|--------------|
| | | | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total |
| Bilaspur | Bilaspur | 60 | 1 | 3 | | 4 | | 1 | | 1 | 1 | 4 | 0 | 5 | 20.0 | 80.0 | 0.0 | 100.0 |
| Chamba | Bharmour | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| | Chamba WL | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| | Pangi | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 40 | 2 | 2 | | 4 | | | 0 | 2 | 2 | 0 | 4 | 50.0 | 50.0 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | | | | 0 | 1 | 2 | 3 | 1 | 2 | 0 | 3 | 33.3 | 66.7 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Kullu WL | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Lahaul & Spiti | Spiti(WL) | 20 | | | | 0 | 1 | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Karsog | 20 | 2 | 1 | 1 | 4 | | | 0 | 2 | 1 | 1 | 4 | 50.0 | 25.0 | 25.0 | 100.0 | |
| Mandi | Mandi | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Kotgarh | 20 | | 2 | | 2 | 1 | 1 | 2 | 1 | 3 | 0 | 4 | 25.0 | 75.0 | 0.0 | 100.0 | |
| Shimla | Rampur | 21 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Theog | 20 | | 3 | | 3 | 1 | | 1 | 0 | 4 | 0 | 4 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Total of Territorial | | 341 | 5 | 11 | 1 | 17 | 3 | 5 | 0 | 8 | 8 | 16 | 1 | 25 | 32.0 | 64.0 | 4.0 | 100.0 |
| Kangra | Bajinath | 3 | | | | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | 0 | | 3 | 3 | 0 | 3 | 0 | 3 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | 0 | | 2 | 2 | 0 | 2 | 0 | 2 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | 0 | | 1 | 1 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | 0 | 2 | 3 | 5 | 2 | 3 | 0 | 5 | 40.0 | 60.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 8 | 1 | 9 | 8 | 1 | 0 | 9 | 88.9 | 11.1 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | 0 | | | 2 | 2 | 0 | 0 | 2 | 0.0 | 0.0 | 100.0 | 100.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Baddi | 2 | | | | 0 | | | 2 | 0 | 2 | 0 | 2 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grasslan | | 59 | 0 | 0 | 0 | 0 | 10 | 13 | 2 | 25 | 10 | 13 | 2 | 25 | 40.0 | 52.0 | 8.0 | 100.0 |
| Grand Total | | 400 | 5 | 11 | 1 | 17 | 13 | 18 | 2 | 33 | 18 | 29 | 3 | 50 | 36.0 | 58.0 | 6.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

21.5 Frequency of Attending Meetings

2) Gram Sabha

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Non JFM | | | | Total | | | | Total (%) | | | |
|------------------------------------|------------|-----------------------------------|-------------|-------------|----------|------------|-------------|-------------|----------|------------|-------------|-------------|----------|------------|-------------|-------------|------------|--------------|
| | | | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total |
| Bilaspur | Bilaspur | 60 | 1 | 34 | | 35 | | 17 | 2 | 19 | 1 | 51 | 2 | 54 | 1.9 | 94.4 | 3.7 | 100.0 |
| Chamba | Bharmour | 20 | 5 | 6 | | 11 | 2 | 7 | 9 | 7 | 13 | 0 | 20 | 35.0 | 65.0 | 0.0 | 100.0 | |
| | Chamba WL | 20 | | | | 0 | 6 | 14 | 20 | 6 | 14 | 0 | 20 | 30.0 | 70.0 | 0.0 | 100.0 | |
| | Pangi | 20 | 2 | 8 | | 10 | 2 | 8 | 10 | 4 | 16 | 0 | 20 | 20.0 | 80.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 12 | 7 | | 19 | 9 | 10 | 19 | 21 | 17 | 0 | 38 | 55.3 | 44.7 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | | | | 0 | 7 | 13 | 20 | 7 | 13 | 0 | 20 | 35.0 | 65.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | | 10 | | 10 | 5 | 5 | 10 | 5 | 15 | 0 | 20 | 25.0 | 75.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | 0 | 4 | 12 | 16 | 4 | 12 | 0 | 16 | 25.0 | 75.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(WL) | 20 | | | | 0 | 7 | 12 | 1 | 20 | 7 | 12 | 1 | 20 | 35.0 | 60.0 | 5.0 | 100.0 |
| | Karsog | 20 | | 8 | | 8 | 1 | 8 | 1 | 10 | 1 | 16 | 1 | 18 | 5.6 | 88.9 | 5.6 | 100.0 |
| Mandi | Mandi | 20 | | 10 | | 10 | 3 | 6 | 9 | 3 | 16 | 0 | 19 | 15.8 | 84.2 | 0.0 | 100.0 | |
| | Kotgarh | 20 | 2 | 8 | | 10 | 1 | 9 | 10 | 3 | 17 | 0 | 20 | 15.0 | 85.0 | 0.0 | 100.0 | |
| Shimla | Rampur | 21 | 4 | 6 | | 10 | 3 | 5 | 2 | 10 | 7 | 11 | 2 | 20 | 35.0 | 55.0 | 10.0 | 100.0 |
| | Theog | 20 | | 11 | | 11 | | 9 | 9 | 0 | 20 | 0 | 20 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Total of Territorial | | 341 | 26 | 108 | 0 | 134 | 50 | 135 | 6 | 191 | 76 | 243 | 6 | 325 | 23.4 | 74.8 | 1.8 | 100.0 |
| Kangra | Bajinath | 3 | | | | 0 | 1 | 2 | 3 | 1 | 2 | 0 | 3 | 33.3 | 66.7 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | 0 | 1 | 6 | 7 | 1 | 6 | 0 | 7 | 14.3 | 85.7 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | 0 | | 2 | 2 | 0 | 2 | 0 | 2 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Kangra | Palampur | 1 | | | | 0 | | 1 | 1 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | 0 | 1 | 7 | 8 | 1 | 7 | 0 | 8 | 12.5 | 87.5 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 16 | 4 | 20 | 16 | 4 | 0 | 20 | 80.0 | 20.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | 0 | | 1 | 2 | 3 | 0 | 1 | 2 | 3 | 0.0 | 33.3 | 66.7 | 100.0 |
| Shimla | Kotgarh | 2 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Baddi | 2 | | | | 0 | | 2 | 2 | 0 | 2 | 0 | 2 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Total of Graziers/ Grasslan | | 59 | 0 | 0 | 0 | 0 | 19 | 25 | 2 | 46 | 19 | 25 | 2 | 46 | 41.3 | 54.3 | 4.3 | 100.0 |
| Grand Total | | 400 | 26 | 108 | 0 | 134 | 69 | 160 | 8 | 237 | 95 | 268 | 8 | 371 | 25.6 | 72.2 | 2.2 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

21.5 Frequency of Attending Meetings

3) JFMC

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Non JFM | | | | Total | | | | Total (%) | | | |
|-----------------------------|------------|-----------------------------------|-------------|-------------|----------|-----------|-------------|-------------|----------|----------|-------------|-------------|----------|-----------|-------------|-------------|------------|--------------|
| | | | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total | 1 Regularly | 2 Sometimes | 3 Never | Total |
| Bilaspur | Bilaspur | 60 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Chamba | Bharmour | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| | Chamba WL | 20 | | | | 0 | 1 | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Pangi | 20 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| Kinnaur | Kinnaur | 40 | | | | 0 | | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 |
| | Sarahan WL | 20 | | | | 0 | | 1 | 1 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | | 1 | | 1 | | | 0 | 0 | 1 | 0 | 1 | 0.0 | 100.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Lahaul & Spiti | Spiti(WL) | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Karsog | 20 | 5 | 2 | | 7 | | | 0 | 5 | 2 | 0 | 7 | 71.4 | 28.6 | 0.0 | 100.0 | |
| Mandi | Mandi | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Kotgarh | 20 | 1 | 1 | | 2 | | | 0 | 1 | 1 | 0 | 2 | 50.0 | 50.0 | 0.0 | 100.0 | |
| Shimla | Rampur | 21 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Theog | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Total of Territorial | | 341 | 6 | 4 | 0 | 10 | 1 | 1 | 0 | 2 | 7 | 5 | 0 | 12 | 58.3 | 41.7 | 0.0 | 100.0 |
| Kangra | Bajinath | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Kullu | 11 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Mandi | Mandi | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Parvati | 10 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Shimla | Theog | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | 0 | | | | | | | | | | | | |

Preparatory Study on Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

21.5 Frequency of Attending Meetings

4) SHG (Savings & Credit)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Non JFM | | | | Total | | | | Total (%) | | | |
|------------------------------------|------------|-----------------------------------|-----------|-----------|----------|----------|-----------|-----------|----------|-----------|-----------|-----------|----------|-----------|--------------|------------|------------|--------------|
| | | | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total |
| | | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | |
| Bilaspur | Bilaspur | 60 | 1 | | | 1 | | | 0 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Bharmour | 20 | | | | 0 | | 2 | 2 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Chamba WL | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Pang | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kinnaur | Kinnaur | 40 | 2 | | | 2 | | | 0 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | | | | 0 | 1 | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | | | | 0 | 1 | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Mandi | Karsog | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Mandi | 20 | | | | 0 | 1 | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | 20 | | | | 0 | 2 | | 2 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Rampur | 21 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Theog | 20 | | | | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 2 | 50.0 | 50.0 | 0.0 | 100.0 | |
| Total of Territorial | | 341 | 3 | 0 | 0 | 3 | 8 | 1 | 0 | 9 | 11 | 1 | 0 | 12 | 91.7 | 8.3 | 0.0 | 100.0 |
| Kangra | Bajinath | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Kullu | 11 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Mandi | Mandi | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Parvati | 10 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 3 | | 3 | 3 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Baddi | 2 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Total of Graziers/ Grasslan | | 59 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 3 | 0 | 0 | 3 | 11 | 1 | 0 | 12 | 14 | 1 | 0 | 15 | 93.3 | 6.7 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

21.5 Frequency of Attending Meetings

5) SHG (IGA)

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Non JFM | | | | Total | | | | Total (%) | | | |
|------------------------------------|------------|-----------------------------------|-----------|-----------|----------|----------|-----------|-----------|----------|----------|-----------|-----------|----------|----------|--------------|------------|------------|--------------|
| | | | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total |
| | | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | |
| Bilaspur | Bilaspur | 60 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Bharmour | 20 | 1 | | | 1 | | 1 | 1 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Chamba WL | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Pang | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kinnaur | Kinnaur | 40 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Sarahan WL | 20 | | | | 0 | 1 | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Kullu WL | 20 | 1 | | | 1 | | | 0 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | 1 | | | 1 | | | 0 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Mandi | Karsog | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Mandi | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Kotgarh | 20 | 1 | | | 1 | | | 0 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Rampur | 21 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Theog | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Total of Territorial | | 341 | 4 | 0 | 0 | 4 | 2 | 0 | 0 | 2 | 6 | 0 | 0 | 6 | 100.0 | 0.0 | 0.0 | 100.0 |
| Kangra | Bajinath | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Kullu | 11 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Mandi | Mandi | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kullu | Parvati | 10 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 2 | | 2 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Baddi | 2 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Total of Graziers/ Grasslan | | 59 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 100.0 |
| Grand Total | | 400 | 4 | 0 | 0 | 4 | 4 | 0 | 0 | 4 | 8 | 0 | 0 | 8 | 100.0 | 0.0 | 0.0 | 100.0 |

Source: Livelihood Survey, JICA Study Team (2017)

21.5 Frequency of Attending Meetings

6) Mahila Mandal

| District | Division | No of Respondents Interviewed (a) | JFM | | | | Non JFM | | | | Total | | | | Total (%) | | | |
|------------------------------------|------------|-----------------------------------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|------------|--------------|-------|
| | | | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total | 1 | 2 | 3 | Total |
| | | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | | Regularly | Sometimes | Never | |
| Bilaspur | Bilaspur | 60 | 4 | 4 | | 8 | | | 0 | 4 | 4 | 0 | 8 | 50.0 | 50.0 | 0.0 | 100.0 | |
| | Bharmour | 20 | 1 | | | 1 | | | 0 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Chamba | Chamba WL | 20 | | | | 0 | 4 | | 4 | 4 | 0 | 0 | 4 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Pang | 20 | 3 | | | 3 | | | 0 | 3 | 0 | 0 | 3 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kinnaur | Kinnaur | 40 | 3 | | | 3 | 4 | 1 | 5 | 7 | 1 | 0 | 8 | 87.5 | 12.5 | 0.0 | 100.0 | |
| | Sarahan WL | 20 | | | | 0 | 3 | 2 | 5 | 3 | 2 | 0 | 5 | 60.0 | 40.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 20 | 1 | | | 1 | 5 | 2 | 5 | 6 | 0 | 0 | 6 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Kullu WL | 20 | | | | 0 | 6 | | 6 | 6 | 0 | 0 | 6 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Lahaul & Spiti | Spiti(W/L) | 20 | | | | 0 | 9 | 2 | 11 | 9 | 2 | 0 | 11 | 81.8 | 18.2 | 0.0 | 100.0 | |
| Mandi | Karsog | 20 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| | Mandi | 20 | | | | 0 | 1 | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| | Kotgarh | 20 | | 2 | | 2 | 2 | 3 | 5 | 2 | 5 | 0 | 7 | 28.6 | 71.4 | 0.0 | 100.0 | |
| Shimla | Rampur | 21 | 2 | 1 | | 3 | | | 0 | 2 | 1 | 0 | 3 | 66.7 | 33.3 | 0.0 | 100.0 | |
| | Theog | 20 | 1 | | | 1 | | | 0 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Total of Territorial | | 341 | 15 | 7 | 0 | 22 | 34 | 8 | 42 | 49 | 15 | 0 | 64 | 76.6 | 23.4 | 0.0 | 100.0 | |
| Kangra | Bajinath | 3 | | | | 0 | 2 | | 2 | 2 | 0 | 0 | 2 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Kullu | 11 | | | | 0 | 2 | 1 | 3 | 2 | 1 | 0 | 3 | 66.7 | 33.3 | 0.0 | 100.0 | |
| Mandi | Mandi | 3 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kangra | Palampur | 1 | | | | 0 | 1 | | 1 | 1 | 0 | 0 | 1 | 100.0 | 0.0 | 0.0 | 100.0 | |
| Kullu | Parvati | 10 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Kinnaur | Kinnaur | 21 | | | | 0 | 8 | 3 | 11 | 8 | 3 | 0 | 11 | 72.7 | 27.3 | 0.0 | 100.0 | |
| Shimla | Theog | 1 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Nalagarh | 5 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Shimla | Kotgarh | 2 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Solan | Baddi | 2 | | | | 0 | | | 0 | 0 | 0 | 0 | 0 | - | - | - | 0.0 | |
| Total of Graziers/ Grasslan | | 59 | 0 | 0 | 0 | 0 | 13 | 4 | 17 | 13 | 4 | 0 | 17 | 76.5 | 23.5 | 0.0 | 100.0 | |
| Grand Total | | 400 | 15 | 7 | 0 | 22 | 47 | 12 | 59 | 62 | 19 | 0 | 81 | 76.5 | 23.5 | 0.0 | 100.0 | |

Source: Livelihood Survey, JICA Study Team (2017)

Attachment II.2.7.2 Seasonal Calendars

i) Sarog Village, Bilaspur Forest Division

| | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
|----------------------------|--------------------------------|---------------|----------------------|---------------|---------------|-------------------|-------|----------------|-------|------------------|-----|---------------|
| Snow | / | | | | | | | | | | | / |
| Income | | | | Peas/ Beans | | Capsicum/ Cabbage | Beans | | Apple | | | |
| Expenditure | | | School | / | | | | | | | | |
| Orchards (spending) | ↑ Cuttings | ↑ Cuttings | | | | | | | | | | ↑ Cuttings |
| Subzi (spending) | | | ↑ Cuttings | ↑ Cuttings | ↑ Cuttings | | | | | | | |
| Work load (W) | | | White wash the house | | | | | | | Grass + Fuelwood | | |
| Work load (G) | ← Cutting, spray fertilisers → | | | | | | | ← Harvesting → | | | | |
| Nepali Labourers | / | | | | | | | / | | | | |
| MGNERGA (G) | | | | | | | | | | | / | |
| MGNERGA (W) | / | | | | | | | | | | / | |

Source: JICA Study Team (2017) Field Survey Findings.

ii) Ribba Village, Kinnaur Forest Division

| | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
|-------------------------|-------------|------------|-------|-------------------------|----------------|------------------|----------------|-----------------------------|------|----------------------------|-------------|---------|
| Orchards | Pruning | | | ← Manuring → | | | ← Irrigation → | | | Fruit Plucking | | |
| Agriculture | Snow | | | weeding and seed sowing | ← Irrigation → | | | Grass cutting | | Harvest olga, fofar, rajma | Seed Sowing | |
| Animal Husbandry | Feeding | | | | Open grazing | ← Wool cutting → | | | | | | |
| Govt. Job | / | | | | | | | | / | | / | |
| Private Job | | | | | | | | Leave by private job holder | | | | |
| Buisness / Shop | Grocery Tea | Shop stall | | | | | | | | | | |
| Wool craft | Weaving | | | | | | | | | | | Weaving |
| Wood craft | / | | | | | | | | | | | |

Source: JICA Study Team (2017) Field Survey Findings.

iii) Yournath Vilalge, Lahaul Forest Division

| | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec | |
|--------------------------|---|-----|---------------------|---|-------------------------------|-------------------------------------|---------------------------------------|---|---------------------------------------|--------------------------|------------------|---------|--|
| Vegetable | ← Snow → | | | Souring pea,potato,cabbage, rajma,reddish etc | Vegetable weeding | Vegetable weeding, irrigation | Pea Harvest, Transport and sale | Cabbage harvest, transport and sale | Potato harvest, transport, sale | No work due to snow | | | |
| Fruit | ← Pear, Khubani, Apricot, flowering → | | | Cherry Transplantation | Irrigation | Irrigation | Cherry Harvest | Apricot ready | | Apple /pear harves | Prunin g work | | |
| Agriculture | ← → | | | Barley, wheat , sowing | Weeding | ← Irrigation → | | | Harvest | No work due to snow | | | |
| Wool Industry | ← Weaving → | | Wool cuttin g | | | Wool work in wool industry | | | | ool cutti | | Weaving | |
| Fodder | ← Stallfeed in village 15 sheep + Goats → | | | | ← Sheep , goats in pastures → | | | | | | | | |
| | ← Stallfeed 03 cattle/HH → | | | | ← Stall feed → | | | | | | ← Open grazing → | | |

Source: JICA Study Team (2017) Field Survey Findings.

**Attachment II.2.7.3 Gender Roles in NTFP Harvesting and Processing – Panaul Village
(Hlet Tikkal, Bilaspur Forest Division)**

| NTFPs/medicinal plant | Production/cultivation | Who goes to harvest (From farm) | Who goes to harvest (From village) | Processing (cleaning, drying, grading etc.) | Processing | Taking to market | Selling | Spending (who decides) | If there is a SHG/producer group/cooperative etc.) |
|-----------------------|------------------------|--|------------------------------------|---|--|------------------|---------|------------------------|--|
| Mango | M/F | All the members of family except old persons | MC/FC | Whole family | Old persons use to dry and process mango to prepare amchur | Mostly M | M | M | No |
| Jamun | M/F | Whole family | MC/FC | ----- | Old person dry seeds to produce anti-sugar medicine | ----- | ----- | ----- | ----- |
| Harad | M/F | F | F | Old members and females | Old members and females | ----- | ----- | ----- | ----- |
| Baheda | M/F | F | F | Old members and females | Old members and females | ----- | ----- | ----- | ----- |
| Amla | M/F | M/F | M/F | Old members and females | Old members and females | ----- | ----- | ----- | ----- |
| Anjir | Old persons | M/F | MC/FC | ----- | ----- | ----- | ----- | ----- | ----- |
| Akhee | ----- | ----- | MC/FC | ----- | ----- | ----- | ----- | ----- | ----- |
| Gurnu | ----- | ----- | MC/FC | Children | ----- | ----- | ----- | ----- | ----- |
| Kadi-patta | ----- | M/F | F/M/ MC/FC | ----- | ----- | ----- | ----- | ----- | ----- |
| Ber | ----- | ----- | MC/FC | ----- | ----- | ----- | ----- | ----- | ----- |
| Galot | ----- | ----- | F | ----- | F | ----- | ----- | ----- | ----- |
| Drengal tardi | M/F | M/F | M | F | ----- | ----- | ----- | ----- | ----- |
| Bana | ----- | ----- | M | F | ----- | ----- | ----- | ----- | ----- |
| Basuti | M/F | M/F | M/F | Old members | ----- | ----- | ----- | ----- | ----- |
| Bariya | M/F | M/F | M/F | Old members | ----- | ----- | ----- | ----- | ----- |
| Nashpati | M/F | M/F | M/F | Old members and females | M/F | ----- | M/F | M | No |
| Grass | M/F | M/F | M/F | M/F | M/F | ----- | M/F | M | No |
| Fuel wood | ----- | M/F | M/F | M/F | ----- | ----- | ----- | ----- | ----- |

Remarks: F=Female/ M=Male/ FC=Female Children/ MC=Male Children

Source: JICA Study Team (2017) based on the field survey

Attachment II.2.8.1 Summary Table for SHGs

| Name of SHG, District | Navjot Knitting CIG, Kullu | Jogani CIG, Kullu | Maa Kali SHG, Kullu | Baggi Village SHG, Kullu |
|---|--|--|---|--|
| Main activity Group (G) Individual (I) | Knitting (I) | Handloom (I) | Collection and selling pine needles and firewood, traditional handloom (G) | 1. Only saving and inter-loaning (new group) (G) 2. Apricot oil (before) |
| Established year | 2012 and mobilized in 2015 | 2015 | 2016 | 1. March 2017 2. 2002-2003 |
| Assisted by | Mid-Himalayan Watershed Dev. Project | Mid-Himalayan Watershed Dev Project | NABARD/MKM | 1. NABARD/HPMKM 2. Jagriti NGO (the members are in 2 SHGs) |
| No. of member/ age /education | 10/ 20-30s/ Mostly 10+2 | 10/ 30-55 / from 5-10+2 | 8/ 25-49 years / 8-9 classes | 11/ 31-61 year old/ from 5 to 10+2 |
| Saving/month | INR 100/member | INR100/member | INR 100/member | 1. INR 50 /month 2. INR 100/month |
| Inter-loaning (i/r) Purpose: | 2% month Buy yarns, school fee etc. | 1%/month Agriculture, household items | No because of bank loan | 2%/month Household items |
| Bank credit Purpose: | NA | NA | 1 st INR 7,000 (12%), 2 nd 36,000(12%) | NA |
| Income/month | INR 3,000/member | INR. 3,500-5,000/member | INR 3,000 to 4,000/by group | NA |
| Market | Ordered locally | Local, Bhuttico | Hotels, Kullu market | NA |
| Strength/potential | Sufficient saving and experiences accumulated for bank credit | -High demand from local area | -Diversification of activities by seasons. -Homogeneity of group | -Experiences in SHG activities |
| Weakness/threat | -It is project-driven SHGs and no autonomous actions taken -No support in post project | -Not responding to increasing demand | -Role of pine needles for cushioning apples may soon be replaced by new form of packaging using trays. | -Taking SHG as project/donor-driven group but not "self-help". |
| Training/capacity building needs | -Credit linkage with Bank -SHG cluster and Federation | -Credit linkage with Bank -SHG cluster and Federation | -Promotion of microenterprise -Forest conservation and NTFPs | -Review and reviving the group and its activity |
| Lessons learned for the project | -Exist strategy such as linking the SHGs/CIGs to cluster/ federation is so important and the project need to incorporate in the implementation plan. | -In handloom IGA, the most of work is done individually and the members are not very keen on group activities. But providing common spaces as well as machines may promote efficiency and increase their income further. | -Group has a good strategy of ensuring constant income by diversifying activities (since some are seasonal and also they have small agri land holding). -When members are related or close with each other, it is easier to work together and share resources. | It is an example to show that the sustenance of SHG can be negatively affected by the convenience of donors. (a NGO stop buying the products from the group). It implies that the project should not have producer-buyer relationship directly |

| Name of SHG, District | Panchvir Varnagi SHG, GNHP, Kullu | Pine needle SHGs (4) GNHP, Kullu | Nav Durga SHG, Mandi | Sholi Mata SHG, Mandi |
|---|---|--|--|--|
| Main activity Group (G) Individual (I) | 1. Knitting, 2. Drying apples, 3. Kidney beans, 4. bakery (to be started) | Pine needle crafts (baskets, accessories, vases etc) (G) | 1. Basket (I) 2. Shopping Bag (I) | 1. Knitting (G) 2. Shopping bags (G) |
| Established year | 2016 (Worked as WSCG since 2003) | Jan – May 2017 | 2003 | 2012 |
| Assisted by | NABARD/BTCA | NABARD/BTCA | NABARD/MSJVS | NABARD/MSJVS |
| No. of member/ age /education | 10/ 20-60 years / 5 to 10+2 class | 47 (4 SHGs) | 8 (originally 10)/30-45 years / max 10+2 | 10/ 23 to 68 years /5 class to 10+2 |
| Saving/month | INR 50/member | INR 30/member (1 group) (linked to one under Mid Himalayan project) INR 100 /member (3 groups) | INR 100/member | INR 100/ member at present. Increasing to INR 200 (from Aug) |
| Inter-loaning (i/r) Purpose: | 2%/month Consumption purpose | 2 % month (1 group) Personal | 2%/month Consumption & emergency needs | 2%/month Buy yard each took INR 5,000/machine |
| Bank credit (i/r) Purpose: | INR 10,000 (12%) by 1 member for 2 months To buy a sowing machine | 1 group took INR 10,000 for 2 months | 4-5 times since 2004. To buy Sowing/knitting machines | INR 20,000 (2013), INR. 100,000 (2016), INR. 200,000 (2016) Construct houses and others. |
| Income/month | Not yet calculated | INR 1,000-2,000/group | Not available | INR 2,500/member but more in winter season |
| Market | GNHP souvenir shop at Sai Ropa | GNHP souvenir shop at Sai Ropa | Locally ordered (cannot make too many to be sold at market.) | Saturday market |
| Strength/potential | Trained on bakery and provided an oven by WWF linked upgrade of water flour mill | -Producing good quality products -A Master trainer in the group to train other members. | Long years of experiences. Credit with bank, Having an active woman in the group. | A good leader with a good business sense, confident on products. |
| Weakness/threat | Depending solely on the souvenir shop for marketing | Not having knowledge on pricing and marketing. | Group lacks a foresight to achieve growth | Other members are active yet rely on the capacity of leader |
| Training/capacity building needs | -IGA for eco-tourism | -Basic knowledge on pricing -IGA for ecotourism | - Skill upgradation for matured SHGs | - Skill upgradation for matured SHGs -Exposure visits to advanced SHGs |
| Lessons learned for the project | Since the WSCG time in 2003, the group was in existence for many years. But the Group is still weak in terms of their organizational management and their IGA activities. | - A group without knowledge of pricing could be vulnerable to competitions or markets outside their community. -IGA should be linked to the awareness for forest management (e.g., forest fire) | Having an “active woman” in a group makes other members to work easier with better connection with external supports such as NABARD. | Having “confidence” in products that groups make is important as it drives their motivation to produce something good and earn more. |

Source: JICA Study Team (2017)

Attachment II.2.8.2 Case Studies of SHGs and Lessons Learnt

1. A Case Study of Successful SHGs: (1) Knitting Group in Mandi District

Background: Under the Aegis of SHG-BLP intervention by NABARD and partnering NGO-MSJVS, the Sholi Mata SHG was formed in 2012 with 10 women members aged between 23 to 68 years. The group is operational in the Sadar Block of Mandi District, with close proximity to the town.



Activity: The vibrant group is engaged in two key IGAs – Knitting and Making Shopping Bags.

Prior to the project intervention, the group was

already engaged in knitting activities but at individual household level. The group has adopted an interesting approach to manufacturing that draws synergies from capabilities and capacities of individual members. Of the 10 members only 4 members own knitting machines and remaining are adept in knitting by hand. While the group was aware that hand-woven products command a higher selling price, their production was not cost effective to meet high market demand. Hence, they have divided the production process into two: members with machine made sweater's back, while others hand knit the front with intricate patterns. This approach not only took less time to manufacture but also makes their products stand out from the products solely knitted using machines, hence giving them a competitive advantage.

SHG's president, though educated up to class 5, was a highly motivated leader and driven to mobilise her group in adopting latest designs and effective production techniques to improve the quality and thus, the sell well in the Saturday local market (their only sale avenue). She holds a marked presence in the market and is effective in training other members on selling and customer pleasing qualities. The group is able to sell their produce without a backlog and each member easily earns INR 2,500 per month even in off-season. Projecting a higher demand for their products in coming winter months, the group has already entered into the third credit cycle with INR 200,000 loan. The group vehemently voiced the desire to diversify their activities through attending requisite training. Unlike most of the groups met during the field study, Sholi Mata SHG had all members as active members. Each one has a story to tell and an experience to share that has left an indelible mark in their attitude towards self, and a social standing in their homes and community.

Key Lessons Learned from the Group

- ✓ Good leadership brought effective teamwork (group dynamics).
- ✓ Member's willingness to learn or to improve encouraged them to produce quality products and attributed to confidence-building.
- ✓ Member's commitment to the activity gradually won the support of their family and society.
- ✓ Compatibility between existing skill set and proposed interventions is the key to sustainability.

Source: Field Interviews, JICA Study Team (2017)

2. A Case Study of Successful SHGs: (2) Multi-Purpose Group in Kullu District

Background: Maa Kali SHG is a year-old group of 8 women members (aged 25 to 49 years) from Saldheri Village in Dugilag GP, District Kullu. The group was formed with support from a local NGO – Mahila Kalyan Mandal and NABARD's SHG-BLP intervention. All women members come from modest background with education up to class 9 and average land holding less than 1 ha per household (family landholding are divided amongst brothers) with BPL status.

Activity: The group has adopted an enterprising survival strategy involving a combination of livelihood activities linked to their access to forest resources and market demand. SHG has identified key activities as – 1) pine needle collection to sell for apple packaging; 2) firewood collection to sell to the hotels in Kullu; 3) traditional handloom, and 4) knitting. Owing to marginal land holding, the members do not practice



even subsistence agriculture and thus, are highly depended on external livelihood sources to meet their ends. Therefore, forest resources i.e. pine needles and fuel wood provide a vital income source for the forest dependent communities like Saldheri village. Prior to group formation, members worked in individual capacity; however, SHG formation has now made their task more efficient and economically viable. Since the income from extraction and sale of (free) forest resources is seasonal in nature (Pine Needle for 3 months and Firewood 8-9 months), the group introduced traditional handloom and knitting activities as additional source of income especially during winter months. With the microcredit of INR 36,000, each member took around INR 5,000 loans to purchase raw materials for their handloom and knitting activities. Driven to augment these additional activities, the group underwent a knitting training by MKM and are willing to purchase two additional knitting machines as a group asset. With an additional income of INR 500-800 per month, all the members are able to repay INR 200 as monthly loan instalment and save INR 100 to group corpus. The sheer intelligence and dire need of the group member got them under the spotlight for NABARD support. They are willing to learn more to earn more for themselves, their children, and families.

Key Lessons Learned from the Group

- ✓ Diversified activities help the group to meet seasonal variations and market demands
 - ✓ Working together helped the group achieve higher economic viability of the activities.
 - ✓ Cohesiveness of group allowed sharing resources without troubles
 - ✓ Formation of SHG was well received by reaching to the most needed or desired sections of Society
- Source: Field Interviews, JICA Study Team (2017)

Attachment II.3.6.1. Indicative Project Work Quantity

Component 1

| | Item | Unit | Quantity |
|-------|---|--------|----------|
| 1. | Sustainable Forest Management | | |
| 1.1 | Preparatory Works for Participatory Forest Management | | |
| 1.1.1 | Identification and Selection of Interventions Areas | VFDS | 400 |
| 1.1.2 | Identification of PFM mode or Departmental mode | VFDS | 400 |
| 1.1.3 | Surveying and Mapping of Intervention Areas | VFDS | 400 |
| 1.1.4 | Identification and Selection of Target Communities | VFDS | 400 |
| 1.1.5 | Engagement of Mobilisers, Ward Level Facilitators | VFDS | 400 |
| 1.1.6 | Community Mobilisation | VFDS | 400 |
| 1.1.7 | Preparation of FEMP and CD&LIP | VFDS | 400 |
| 1.1.8 | Annual Planning/ Revisiting of Micro Plan (4th Year) | VFDS | 400 |
| 1.2 | Participatory Forest Management Mode | | |
| 1.2.1 | Site Specific Planning & Monitoring | | |
| | a) Drone and its accessories | ranges | 55 |
| | b) Site Specific Planning | 10 ha | 405 |
| | c) Site Specific Monitoring (1st time) | 10ha | 405 |
| | c) Site Specific Monitoring (2nd time) | 10ha | 405 |
| 1.2.2 | Drainage Line Treatment (ex-situ SWC work) | ha | 492 |
| 1.2.3 | Improvement/ densification of Moderately Dense Forest | | |
| | 1) ANR without planting | | |
| | a) Year 0 Fencing work | ha | 1,150 |
| | b) Year 0 Fencing work (additional work) | ha | 1,150 |
| | c) Year 0 SWC Work | ha | 1,150 |
| | d) Year 1 Maintenance | ha | 1,150 |
| | e) Year 1 Maintenance additional work | ha | 1,150 |
| | f) Year 2 Maintenance | ha | 1,150 |
| | g) Year 2 Maintenance additional work | ha | 1,150 |
| | h) Year 3 Maintenance | ha | 1,150 |
| | i) Year 3 Maintenance additional work | ha | 1,150 |
| | j) Year 3 SWC work | ha | 1,150 |
| | 2) ANR with gap planting of 200 seedlings/ha (tall plant) (Tribal) | | |
| | a) Year-1 Preparation for planting | ha | 1,150 |
| | b) Year 0 Planting year | ha | 1,150 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 1,150 |
| | d) Year 0 SWC work | ha | 1,150 |
| | e) Year 1 Maintenance (10% replanting) | ha | 1,150 |
| | f) Year 1 Maintenance additional work | ha | 1,150 |
| | g) Year 2 Maintenance | ha | 1,150 |
| | h) Year 2 Maintenance additional work | ha | 1,150 |
| | i) Year 3 Maintenance | ha | 1,150 |
| | j) Year 3 Maintenance additional work | ha | 1,150 |
| | k) Year 3 SWC work | ha | 1,150 |
| 1.2.4 | Afforestation/ improvement of Open/ Scrub Forest - Fuelwood & Fodder plantation | | |
| | 1) Fuel wood and Fodder Plantation 1,100 normal plants/ha | | |
| | a) Year-1 Preparation for planting | ha | 925 |
| | b) Year 0 Planting year | ha | 925 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 925 |

| | Item | Unit | Quantity |
|-------|--|------|----------|
| | d) Year 0 SWC Work | ha | 925 |
| | e) Year 1 Maintenance (10% replanting) | ha | 925 |
| | f) Year 1 Maintenance additional work | ha | 925 |
| | g) Year 2 Maintenance (5% replanting) | ha | 925 |
| | h) Year 2 Maintenance additional work | ha | 925 |
| | i) Year 3 Maintenance | ha | 925 |
| | j) Year 3 Maintenance additional work | ha | 925 |
| | k) Year 3 SWC Maintenance work | ha | 925 |
| | 2) Tree + Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha) | | |
| | a) Year-1 Preparation for planting | ha | 462 |
| | b) Year 0 Planting year | ha | 462 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 462 |
| | d) Year 0 SWC Work | ha | 462 |
| | e) Year 1 Maintenance (10% replanting) | ha | 462 |
| | f) Year 1 Maintenance additional work | ha | 462 |
| | g) Year 2 Maintenance (5% replanting) | ha | 462 |
| | h) Year 2 Maintenance additional work | ha | 462 |
| | i) Year 3 Maintenance | ha | 462 |
| | j) Year 3 Maintenance additional work | ha | 462 |
| | k) Year 3 SWC Maintenance work | ha | 462 |
| | 3) Tall Plant Block Plantation (500 tall plants/ha) with Wooden Fence Posts | | |
| | a) Year-1 Preparation for planting | ha | 154 |
| | b) Year 0 Planting work | ha | 154 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 154 |
| | d) Year 0 SWC Work | ha | 154 |
| | e) Year 1 Maintenance (10% replanting) | ha | 154 |
| | f) Year 1 Maintenance additional work | ha | 154 |
| | g) Year 2 Maintenance (5% replanting) | ha | 154 |
| | h) Year 2 Maintenance additional work | ha | 154 |
| | i) Year 3 Maintenance | ha | 154 |
| | j) Year 3 Maintenance additional work | ha | 154 |
| | k) Year 3 SWC Maintenance work | ha | 154 |
| 1.2.5 | Improvement of Forest quality at key concerned Forest Areas | | |
| | 1) Planting 200 tall plants/ha + Rehabilitation 100% of invasive plants areas (Wooden Fence) | | |
| | a) Year-1 Preparation for planting and rehabilitation | ha | 161 |
| | b) Year 0 Planting and rehabilitation | ha | 161 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 161 |
| | d) Year 0 SWC Work | ha | 161 |
| | e) Year 1 Maintenance (10% replanting) and rehabilitation | ha | 161 |
| | f) Year 1 Maintenance additional work | ha | 161 |
| | g) Year 2 Maintenance (5% replanting) and rehabilitation | ha | 161 |
| | h) Year 2 Maintenance additional work | ha | 161 |
| | i) Year 3 Maintenance and rehabilitation | ha | 161 |
| | j) Year 3 Maintenance additional work | ha | 161 |
| | k) Year 3 SWC Maintenance work | ha | 161 |
| 1.2.6 | Improvement of Pastures/ Grasslands (including in-situ SWC works) | | |
| | 1) Dry Alpine Pasture Models (Broadcasting Method) (Tribal) | | |
| | a) Year 0 | ha | 160 |
| | b) Year 0 Additional work | ha | 160 |
| | c) Year 0 SWC Work | ha | 160 |
| | d) Year 1 | ha | 160 |
| | e) Year 1 Maintenance additional work | ha | 160 |
| | f) Year 2 | ha | 160 |
| | g) Year 2 Maintenance additional work | ha | 160 |
| | 2) Dry Alpine Pasture Models (Patch/Strip Method) | | |

| Item | | Unit | Quantity |
|---------|---|----------------|-----------|
| | a) Year 0 | ha | 160 |
| | b) Year 0 Additional work | ha | 160 |
| | c) Year 0 SWC Work | ha | 160 |
| | d) Year 1 | ha | 160 |
| | e) Year 1 Maintenance additional work | ha | 160 |
| | f) Year 2 | ha | 160 |
| | g) Year 2 Maintenance additional work | ha | 160 |
| | 3) Establishment of Fallow Grassland / Pasture | ha | 450 |
| 1.2.7 | Forest Fire Protection | | |
| | 1) Fire Patrol | | |
| | 1st year | ha | 2,000 |
| | 2nd year | ha | 2,000 |
| | 3rd year | ha | 2,000 |
| | 4th year | ha | 2,000 |
| | 2) Pine needle Collection and Utilization Survey and Capacity Building | districts | 3 |
| | 3) Pine needle Collection and Utilization | ranges | 10 |
| 1.2.8 | Forestry Interventions at outside of Forest Areas | | |
| | 1) Tree + Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha) | | |
| | a) Year-1 Preparation for planting | ha | 310 |
| | b) Year 0 Planting year | ha | 310 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 310 |
| | d) Year 0 SWC Maintenance work | ha | 310 |
| | e) Year 1 Maintenance (10% replanting) | ha | 310 |
| | f) Year 1 Maintenance additional work | ha | 310 |
| | g) Year 2 Maintenance (5% replanting) | ha | 310 |
| | h) Year 2 Maintenance additional work | ha | 310 |
| | i) Year 3 Maintenance | ha | 310 |
| | j) Year 3 Maintenance additional work | ha | 310 |
| | k) Year 3 SWC Maintenance work | ha | 310 |
| 1.3 | Training of VFDSs | | |
| 1.3.1 | Training of VFDSs | no. (for VFDS) | 400 |
| 1.3.2 | Exposure Visits | | |
| 1.3.2.1 | Within State | no. (for VFDS) | 400 |
| 1.3.2.2 | Out of State | no. (for VFDS) | 400 |
| 1.3.3 | Joint Workshop | | |
| 1.3.3.1 | Range | VFDS | 400 |
| 1.3.3.2 | Division | VFDS | 400 |
| 1.4 | Department Mode | | |
| 1.4.1 | Site Specific Planning & Monitoring | | |
| | b) Site Specific Planning | 10ha | 748 |
| | c) Site Specific Monitoring | 10ha | 748 |
| | c) Site Specific Monitoring | 10ha | 748 |
| 1.4.2 | Improvement of Forest Boundary Management at Project Intervention Areas | | |
| | 1) Survey for Geo-referencing Forest Boundaries | km | 483 |
| | 2) Installation of boundary pillar | km | 483 |
| | 3) Maintenance of Forest Boundary Pillars | km | 483 |
| 1.4.3 | Improvement of Nurseries | | |
| | 1) Total cost of improvement of nursery at Range Level | range | 45 |
| | 2) Nursery Maintenance Cost for Range Level Nursery (5%) | range | 45 |
| | 3) Total cost of improvement of nursery at Circle Level | circle | 6 |
| | 4) Nursery Maintenance Cost for Circle Level Nursery (5%) | circle | 6 |
| 1.4.4 | Seedling Production | | |
| | 1) 1~1.5 year seedlings of normal chil/broad leaves plants | | |
| | a) Year -1 | seedlings | 2,448,000 |
| | b) Year -1 additional work | seedlings | 2,448,000 |
| | 2) 2~2.5 years seedlings of tall/chil/broad leaves plants | | |
| | a) Year -2 | seedlings | 1,299,000 |

| Item | | Unit | Quantity |
|-------|---|-----------|-----------|
| | b) Year -2 additional work | seedlings | 1,299,000 |
| | c) Year -1 | seedlings | 1,299,000 |
| | d) Year -1 additional work | seedlings | 1,299,000 |
| | 3) ~ 3.5 years seedlings of tall deodar/ban oak plants | | |
| | a) Year -3 raising of plants in polythene bags | seedlings | 745,000 |
| | b) Year -3 additional work | seedlings | 745,000 |
| | c) Year -2 shifting of plants in polythene bags | seedlings | 745,000 |
| | d) Year -2 additional work | seedlings | 745,000 |
| | e) Year -1 | seedlings | 745,000 |
| | f) Year -1 additional work | seedlings | 745,000 |
| | 4) Nursery cost of plants for shrubs (Tribal) | seedlings | 3,488,000 |
| 1.4.5 | Non-PFM Drainage Line Treatment (ex-situ SWC work: including treatable surface Erosion Control) | ha | 1,849 |
| 1.4.6 | Secondary Silvicultural Operations for Improvement of Existing Forests | | |
| | 1) Tending Operation | | |
| | a) Year 0 Fencing work | ha | 1,028 |
| | b) Year 0 Fencing work (additional work) | ha | 1,028 |
| 1.4.7 | Improvement/ densification of Moderately Dense Forest | | |
| | 1) ANR without planting | | |
| | a) Year 0 Fencing work | ha | 1,196 |
| | b) Year 0 Fencing work (additional work) | ha | 1,196 |
| | c) Year 0 SWC Work | ha | 1,196 |
| | d) Year 1 Maintenance | ha | 1,196 |
| | e) Year 1 Maintenance additional work | ha | 1,196 |
| | f) Year 2 Maintenance | ha | 1,196 |
| | g) Year 2 Maintenance additional work | ha | 1,196 |
| | h) Year 3 Maintenance | ha | 1,196 |
| | i) Year 3 Maintenance additional work | ha | 1,196 |
| | j) Year 3 SWC work | ha | 1,196 |
| | 2) ANR with gap planting of 200 seedlings/ha (tall plant) | | |
| | a) Year-1 Preparation for planting | ha | 1,196 |
| | b) Year 0 Planting year | ha | 1,196 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 1,196 |
| | d) Year 0 SWC work | ha | 1,196 |
| | e) Year 1 Maintenance (10% replanting) | ha | 1,196 |
| | f) Year 1 Maintenance additional work | ha | 1,196 |
| | g) Year 2 Maintenance | ha | 1,196 |
| | h) Year 2 Maintenance additional work | ha | 1,196 |
| | i) Year 3 Maintenance | ha | 1,196 |
| | j) Year 3 Maintenance additional work | ha | 1,196 |
| | k) Year 3 SWC work | ha | 1,196 |
| 1.4.8 | Afforestation/ improvement of Open/ Scrub Forest - Fuelwood & Fodder plantation | | |
| | 1) Fuel wood and Fodder Plantation 1,100 normal plants/ha (Tribal) | | |
| | 2) Tree + Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha) (Tribal) | | |
| | 3) Tall Plant Block Plantation (500 tall plants/ha) with CC Fence Posts (Tribal) | | |
| | a) Year-1 Preparation for planting | ha | 2,199 |
| | b) Year 0 Planting work | ha | 2,199 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 2,199 |
| | d) Year 0 SWC Work | ha | 2,199 |
| | e) Year 1 Maintenance (10% replanting) | ha | 2,199 |
| | f) Year 1 Maintenance additional work | ha | 2,199 |
| | g) Year 2 Maintenance (5% replanting) | ha | 2,199 |
| | h) Year 2 Maintenance additional work | ha | 2,199 |
| | i) Year 3 Maintenance | ha | 2,199 |
| | j) Year 3 Maintenance additional work | ha | 2,199 |
| | k) Year 3 SWC Maintenance work | ha | 2,199 |
| 1.4.9 | Improvement of Forest quality at key concerned Forest Areas | | |
| | 1) ANR with gap planting of 200 seedlings/ha (tall plant) (Tribal) | | |
| | a) Year-1 Preparation for planting and rehabilitation | ha | 242 |
| | b) Year 0 Planting year | ha | 242 |
| | c) Year 0 Plantation & Maintenance additional work | ha | 242 |
| | d) Year 0 SWC Work | ha | 242 |

| Item | | Unit | Quantity |
|--------|--|--------------------|----------|
| | e) Year 1 Maintenance (10% replanting) | ha | 242 |
| | f) Year 1 Maintenance additional work | ha | 242 |
| | g) Year 2 Maintenance | ha | 242 |
| | h) Year 2 Maintenance additional work | ha | 242 |
| | i) Year 3 Maintenance | ha | 242 |
| | j) Year 3 Maintenance additional work | ha | 242 |
| | k) Year 3 SWC Maintenance work | ha | 242 |
| 1.4.10 | Improvement of Pastures/ Grasslands (including in-situ SWC works) | | |
| | 1) Dry Alpine Pasture Models (Broadcasting Method) (Tribal) | | |
| | a) Year 0 | ha | 108 |
| | b) Year 0 Additional work | ha | 108 |
| | c) Year 0 SWC Work | ha | 108 |
| | d) Year 1 | ha | 108 |
| | e) Year 1 Maintenance additional work | ha | 108 |
| | f) Year 2 | ha | 108 |
| | g) Year 2 Maintenance additional work | ha | 108 |
| | 2) Dry Alpine Pasture Models (Patch/Strip Method) (Tribal) | | |
| | a) Year 0 | ha | 108 |
| | b) Year 0 Additional work | ha | 108 |
| | c) Year 0 SWC Work | ha | 108 |
| | d) Year 1 | ha | 108 |
| | e) Year 1 Maintenance additional work | ha | 108 |
| | f) Year 2 | ha | 108 |
| | g) Year 2 Maintenance additional work | ha | 108 |
| | 3) Establishment of Fallow Grassland / Pasture | ha | 1,300 |
| 1.4.11 | Forest Fire Management | | |
| | 1) Forest Fire Management (Tribal) | | |
| | a) Creation of Fire line | km | 483 |
| | b) Maintenance of Fire line (1 year) | km | 483 |
| | c) Maintenance of Fire line (2 year) | km | 483 |
| | d) Maintenance of Fire line (3 year) | km | 483 |
| 1.5 | Training of Project related staff of HPFD | | |
| 1.5.0 | Preparation of Livelihood Improvement Strategy and Plan | LS | 1 |
| 1.5.1a | TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation | no. (for Division) | 36 |
| 1.5.1b | TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation (Follow up) | no. (for Division) | 36 |
| 1.5.2a | Training for GP Mobilisers and Facilitators | no. (for VFDS) | 400 |
| 1.5.2b | Training for GP Mobilisers and Facilitators Follow up | no. (for VFDS) | 400 |
| 1.6 | Research | | |
| 1.6.1 | Monitoring Data Accumulation for Nursing and Planting of Tall Plants | LS | 1 |
| 1.6.2 | Monitoring Data Accumulation for Effective Pasture Management | LS | 1 |
| 1.6.3 | Study for Effective SWC and Land Slide Control Measures | LS | 1 |

Source: JICA Study Team (2017)

Component 2

| Item | | Unit | Quantity |
|--------|--|--------------------|----------|
| 2.1 | Scientific Biodiversity Management | | |
| 2.1.1 | Preparatory Works | LS | 1 |
| 2.1.2 | Protected area management improvement in core zone or buffer zone | LS | 1 |
| 2.1.3 | Human-wildlife conflict mitigation/management | | |
| | Human-wildlife conflict mitigation/management | LS | 1 |
| | Rapid Response Team | divisions | 14 |
| 2.1.4 | Wildlife habitat improvement | LS | 1 |
| | Wildlife habitat improvement Water Pond | no | 100 |
| 2.1.5 | Recovery programmes for endangered wildlife | LS | 1 |
| 2.2 | Training of Project related Staff of HPFD (ref.4.2.1) | | |
| 2.2.0 | Preparation of Livelihood Improvement Strategy and Plan | LS | 1 |
| 2.2.1a | TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation | no. (for Division) | 36 |
| 2.2.1b | TOT for DMU Subject Matter Specialist/ FTU Coordinators for | no. (for Division) | 36 |

| | Item | Unit | Quantity |
|-----------|--|--------------------|----------|
| | Field Facilitation (Follow up) | | |
| 2.2.1a | Training for GP Mobilisers and Facilitators | no. (for BMC) | 20 |
| 2.2.2b | Training for GP Mobilisers and Facilitators Follow up | no. (for BMC) | 20 |
| 2.3 | Research | | |
| 2.3.1 | Pilot Project on Biodiversity Corridor (Baseline survey for biodiversity corridor) | Set | 1 |
| 2.3.2 | Basic study for designing Biodiversity Census | Set | 1 |
| 2.4 | Community Based Biodiversity Management | | |
| 2.4.1 | Preparatory Works | | 0 |
| 2.4.1.1 | Identification of Potential Intervention Area | BMC | 20 |
| 2.4.1.2 | Identification of BMC | BMC | 20 |
| 2.4.1.3 | Survey and Mapping (ref.1.1.3) | BMC | 20 |
| 2.4.1.4 | Engagement of GP Mobilisers/ Ward Facilitators | BMC | 20 |
| 2.4.1.5a | Training of GP Mobilisers/ Ward Facilitators | BMC | 20 |
| 2.4.1.5b | Training of GP Mobilisers/ Ward Facilitators (Follow-up) | BMC | 20 |
| 2.4.1.6 | Community Mobilisation | BMC | 20 |
| 2.4.1.7 | Preparation of CBMP and CD&LIP | BMC | 20 |
| 2.4.1.8 | Annual Planning/ Revisiting of Micro Plan (4th Year) | BMC | 20 |
| 2.4.2 | Community Based Biodiversity Management | | |
| 2.4.2.1 | Satoyama Based Biodiversity Conservation Activities | | |
| 2.4.2.1 a | Promotion of Sustainable use and Management of Natural Resources (Major Cost to be represented by forestry activities) | | |
| 1 | Site Specific Planning & Monitoring | | |
| | b) Site Specific Planning | 10 ha | 70 |
| | c) Site Specific Monitoring (1st time) | 10ha | 70 |
| | c) Site Specific Monitoring (2nd time) | 10ha | 70 |
| 2 | Drainage Line Treatment (ex-situ SWC work) | ha | 73 |
| 3 | Improvement/ densification of Moderately Dense Forest | | |
| | 1) ANR without planting | ha | 173 |
| | 2) ANR with gap planting of 200 seedlings/ha (tall plant) | ha | 173 |
| 4 | Afforestation/ improvement of Open/ Scrub Forest - Fuelwood & Fodder plantation | | |
| | 1) Fuel wood and Fodder Plantation 1,100 normal plants/ha | ha | 139 |
| | 2) Tree+Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha) | ha | 69 |
| | 3) Tall Plant Block Plantation (500 tall plants/ha) with Wooden Fence Posts | ha | 23 |
| 5 | Improvement of Forest quality at key concerned Forest Areas | | |
| | 2) ANR with gap planting of 200 seedlings/ha (tall plant) | ha | 24 |
| 6 | Improvement of Pastures/ Grasslands (including in-situ SWC works) | | |
| | 1) Dry Alpine Pasture Models (Broadcasting Method) | ha | 20 |
| | 2) Dry Alpine Pasture Models (Patch/Strip Method) | ha | 20 |
| | 3) Establishment of Fallow Grassland / Pasture | ha | 90 |
| 7 | Forest Fire Protection | | 0 |
| | 1) Fire Patrol | ha | 300 |
| 8 | Forestry Interventions at outside of Forest Areas | | 0 |
| | 1) Tree+Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha) | ha | 30 |
| 2.4.2.1 b | Designation of Biodiversity Registers (Survey and planning) | BMCs | 20 |
| 2.4.2.1 c | Implementation of CBMP | BMCs | 20 |
| 2.4.2.2 | Eco Clubs | Ls | 1 |
| 2.5 | Training of BMCs | | |
| 2.5.1 | TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation | no. (for Division) | 36 |
| 2.5.2 | Training of BMCs and sub-committee | no. (for BMC) | 20 |
| 2.5.3 | Exposure Visits | | |
| 2.5.3.1 | Within State | no. (for BMC) | 20 |
| 2.5.3.2 | Out of State | no. (for BMC) | 20 |
| 2..5.4 | Joint Workshop | | |
| 2.5.4.1 | Range | no. (for BMC) | 20 |
| 2.5.4.2 | Division | no. (for BMC) | 20 |
| 2.6 | Biodiversity Monitoring System | Biennial | 5 |

Source: JICA Study Team (2017)

Component 3

| Item | | Unit | Quantity |
|-----------|---|----------------------------|----------|
| 3.1 | Community Development | | |
| 3.1.1 | Preparation of CD&LIP (ref.1.1.7 or 2.4.1.7) | | |
| 3.1.2 | Transfer of Funds | VFDS/ BMC sub committee | 460 |
| 3.1.3 | Implementation of CD activities (ref.3.1.2) | | |
| 3.1.4 | Preparation of Guidelines Manuals and Training Programmes for Community Development (ref.1.5.0) | | |
| 3.1.5 | Research: Pilot Project on Hydro Cultural Fodder Production | LS | 1 |
| 3.2 | NTPF based Livelihood Improvement | | |
| 3.2.1 | Preparatory Works | | |
| | a) NTFP Assessment | Clusters | 11 |
| | b) Establishment of Him Jadi-Buti Society | Nos. | 1 |
| 3.2.2 | NTPF Enterprise Development Clusters | Clusters | 11 |
| 3.2.3 | NTPF Research and Development | Nos. | 1 |
| 3.2.4 | NTPF Cultivation | | |
| 3.2.5 | NTPF Market Research and Promotion | Nos. | 1 |
| 3.2.6 | NTPF Training and Extension | Nos. | 1 |
| 3.2.7 | NTPF Publicity and Communication | Nos. | 1 |
| 3.3 | Non NTFP based Livelihood Improvement | | |
| 3.3.1 | Preparation of Livelihood Improvement Strategy and Plan | LS | 1 |
| 3.3.2 | Preparation of CD&LIP (ref.1.1.7 or 2.4.1.7) | | |
| 3.3.3 | Formation/ Reviving CIGs/ SHGs | VFDS/ BMC sub committee | 460 |
| 3.3.4 | Implementation of Household/ Community level livelihood improvement | CIG/ SHG | 920 |
| 3.3.5 | Promotion of Cluster based Livelihood Activities | LS | 1 |
| 3.3.6 | Capacity Development for CIGs/ SHGs and Cluster based Organisations | | |
| 3.3.6.0 | Preparation of Manuals and Guidelines | LS | 1 |
| 3.3.6.1 | TOT for DMU/FTU for Livelihood Improvement | Division | 36 |
| 3.3.6.2 | Training for GP Motivators and Facilitators (VFDS) | no. (for VFDS) | 400 |
| | Training for GP Motivators and Facilitators (BMC) | no. (for BMC) | 20 |
| 3.3.6.3 | Training for CIGs/ SHGs | no VFDS/ BMC sub committee | 460 |
| 3.3.6.4 | Exposure Visits | | |
| 3.3.6.4.1 | Within State | CIG/ SHG | 920 |
| 3.3.6.4.2 | Out of State | CIG/ SHG | 920 |
| 3.3.7 | Capacity Development for CIGs/ SHGs and Cluster Based Organisation (ref.3.3.6) | | |

Source: JICA Study Team (2017)

Component 4

| Item | | Unit | Quantity |
|---------|--|--------|----------|
| 4.1 | Preparatory Works | | |
| 4.1.1 | Establishment of PMU and Field Level Units | | |
| 4.1.2 | Strengthening of PMU and Field Level Units | | |
| 4.1.2.1 | Mobility Support (vehicle hiring instead of procuring) | | |
| | a) PMU | months | 120 |
| | b) FCCU | months | 826 |
| | c) FTU | months | 6,018 |
| | d) Project Divisions | months | 1,904 |
| 4.1.2.2 | Equipment Support | | |
| | a) PMU | Nos. | 1 |
| | b) FCCU | Nos. | 7 |
| | c) FTU | Nos. | 55 |
| | d) Project Divisions | Nos. | 16 |
| 4.1.2.3 | Office | | |
| | a) PMU | Nos. | 1 |

| Item | | Unit | Quantity |
|---------|---|----------------|----------|
| | b) FCCU | Nos. | 7 |
| | c) FTU | Nos. | 55 |
| | d) DMU | Nos. | 16 |
| 4.1.2.4 | Furniture | | |
| | a) PMU | Nos. | 1 |
| | b) FCCU | Nos. | 7 |
| | c) FTU | Nos. | 55 |
| | d) DMU | Nos. | 16 |
| 4.1.3 | Recruitment of the Personnel/ Subject Matter Specialists/ Resource Organisations | | |
| 4.1.3.1 | Human Resource Support | | |
| | 1) PMU | | |
| | a) Contractual/ Direct Hiring | months | 120 |
| | b) Outsourcing | months | 120 |
| | c) short term SMS 1 | months | 15 |
| | d) short term SMS 2 | months | 15 |
| | e) short term SMS 3 | months | 6 |
| | 2) FCCU | | 0 |
| | a) Contractual/ Direct Hiring | months | 826 |
| | b) Outsourcing | months | 826 |
| | 3) Project Division - Contractual/ Direct Hiring | months | 1,904 |
| | 4) FTU | | |
| | a) Contractual/ Direct Hiring | months | 6,490 |
| | b) Outsourcing | months | 6,490 |
| 4.1.3.2 | Support for VFDS/BMC | | |
| | 1) Strengthening support to VFDS/BMC | VFDS/BMC | 420 |
| | 2) Operation support to VFDS/BMC | months | 37,800 |
| | 3) Maintenance Corpus Contribution to VFDS/BMC | VFDS/BMCs | 420 |
| 4.1.4 | Preparation of Gender Action Plan | LS | 1 |
| 4.1.5 | Environmental and Social Consideration | | |
| | a) Environmental and Social Consideration Expert (ESCE) | MM | 10 |
| | b) Environmental and Social Consideration Field Expert (ESCFE) | MM | 30 |
| 4.2 | Capacity Development | | |
| 4.2.1 | Implementing Agency | | |
| 4.2.1.1 | Training Plan Development | | |
| | 1) National | LS | 1 |
| | 2) Overseas | LS | 1 |
| 4.2.1.2 | Regular Trainings | | |
| | 1) Officers | | |
| | a) Within State | batches | 14 |
| | b) Outside State | batches | 22 |
| | 2) Frontline Staff | | |
| | a) Within State | batches | 44 |
| | b) Outside State | batches | 66 |
| 4.2.1.3 | Refresher Trainings | | |
| | 1) Officers | | |
| | a) Within State | batches | 5 |
| | b) Outside State | batches | 7 |
| | 2) Frontline Staff | | |
| | a) Within State | batches | 15 |
| | b) Outside State | batches | 22 |
| 4.2.1.4 | Exposure Visits | nos. | |
| | a) National/ Within State | batches | 18 |
| | b) Overseas 1 | batches | 2 |
| | c) Overseas 2 | batches | 2 |
| 4.2.1.5 | Workshops/ Seminars | | |
| | a) National Annual Workshop | nos. | 1 |
| | b) State-level workshops/ seminars | nos. | 9 |
| 4.2.2 | Gender Training | | |
| 4.2.2.1 | Gender Training (PMU) | LS | 1 |
| 4.2.2.2 | Gender Training FCCU/ FTU (TOT Mode) | Division | 16 |
| 4.2.2.3 | Gender Training VFDS/ BMC/ Sub Committees/ Cluster Organisations/ VFDS/BMC Motivators/ Ward Facilitators (VFDS) | no. (for VFDS) | 400 |

| Item | | Unit | Quantity |
|---------|--|---------------|----------|
| | Gender Training VFDS/ BMC/ Sub Committees/ Cluster Organisations/ VFDS/BMC Motivators/ Ward Facilitators (BMC) | no. (for BMC) | 20 |
| 4.2.2.4 | Gender Training (e) CIGs/ SHGs | CIG/ SHG | 920 |
| 4.2.3 | Environmental and Social Consideration | | |
| | a) Training (PMU/FCCU) at Circle Level | batches | 28 |
| | b) Training (DMU/FTU) at Division Level | batches | 64 |
| 4.3 | Monitoring & Evaluation (M&E) | | |
| 4.3.1 | Establishing and operationalising M&E System | | |
| 4.3.1.1 | Monitoring | | |
| | 1) Biodiversity Monitoring System (to be covered in Component 2) | | |
| | 2) Concurrent Monitoring & Periodic Review | | |
| | a) PMU | quarters | 38 |
| | b) Project Divisions | months | 1,728 |
| | c) Project Circles | quarters | 278 |
| | d) Governing Body of PMU | quarters | 40 |
| | e) HPC of PMU | half-years | 20 |
| | f) Gram Panchayats | months | 38,400 |
| | 3) Community Self-monitoring | quarters | 12,800 |
| | 5) Computerized Accounting System | | |
| | a) PMU | PMU | 1 |
| | b) FCCU | FCCU | 7 |
| | 7) Annual Strategy Planning & Review Workshops | | |
| | a) PMU | PMU | 9 |
| | b) Project Circles | Circles | 63 |
| 4.3.1.2 | Impact Assessment | | |
| | 1) Annual Outcome Assessments | Annual | 9 |
| | 2) Baseline and Impact Surveys | | |
| | a) Socio-economic/ Gender Surveys | | |
| | i) Baseline | times | 1 |
| | ii) Impact (mid and end-term) | times | 2 |
| | b) Physical Surveys | | |
| | i) Baseline | times | 1 |
| | ii) Impact (mid and end-term) | times | 2 |
| | 3) Thematic and Short Studies | times | 6 |
| 4.3.1.3 | Audits & Transparency | | |
| | 1) Social Audits | | |
| | a) Batch-1 | audits | 1470 |
| | b) Batch-2 | audits | 2,460 |
| | c) Batch-3 | audits | 1,500 |
| | 2) Statutory Financial Audits | | |
| | a) PMU | audits | 10 |
| | b) Project Divisions | audits | 160 |
| | c) VFDS/BMCs | | |
| | i) Batch-1 | audits | 735 |
| | ii) Batch-2 | audits | 1,230 |
| | iii) Batch-3 | audits | 750 |
| | 3) Concurrent Audits | | |
| | a) PMU | audits | 10 |
| | b) Project Divisions | audits | 160 |
| | 4) Grievance Redressal, RTI and Public Disclosure | | |
| 4.3.2 | Enhancement and Promotion of GIS/ MIS/ ICT | | |
| | a) Development of Mobile Apps. for M&E and Incident Reporting | ls. | 1 |
| | b) GIS Monitoring | ls. | 1 |
| | c) Computerised GIS/MIS staff | ls. | 1 |
| 4.3.3 | Communication and Publicity | | |
| 4.3.3.1 | Publicity | | |
| | a) Newsletter | editions | 36 |
| | b) Publicity events (exhibitions/ melas etc.) | events | 14 |
| | c) Short Films | films | 4 |
| | d) Website Development | | |
| 4.3.3.2 | Publication | | |
| | a) Annual Report and Plan | years | 10 |

| Item | | Unit | Quantity |
|---------|--|-------------------------|----------|
| | b) Quarterly Reports | quarters | 38 |
| | c) Guidelines & Manuals/ Handbooks | times | 3 |
| | d) Project Registers/ IEC material/ Success Stories | times | 3 |
| 4.4 | Research | | |
| 4.4.1 | Basic Study for Strengthening of ICT at HPFD | LS | 1 |
| 4.5 | PMC | | |
| 4.5.1 | Procurement of PMC | LS | 1 |
| 4.5.2 | Deployment of PMC specialists (ref.4.5.3) | | |
| 4.5.3 | Provision of Technical and Managerial Advisory Services | LS | 1 |
| 4.5.4 | Preparation of Reports (ref.4.5.3) | | |
| 4.6 | Phase Out | | |
| 4.6.1 | Implementing Agency | | |
| 4.6.1.1 | Preparation of Phase-Out/ Sustainability Mechanism Plan | LS | 1 |
| 4.6.1.2 | Transfer of Assets and Resources | LS | 1 |
| 4.6.2 | Community Based Organisations | | |
| 4.6.2.1 | Preparation of Phase-Out/ Sustainability Mechanism Plan (VFDS) | VFDS | 400 |
| | Preparation of Phase-Out/ Sustainability Mechanism Plan (BMC) | BMC | 20 |
| 4.6.2.2 | Revisiting of FEMP/ CBMP and CD&LIP | VFDS/ BMC sub-committee | 460 |
| 4.6.2.3 | Phase Out Training (VFDS) | VFDS | 400 |
| | Phase Out Training (BMC) | BMC | 20 |
| | Phase Out Training (CIG/ SHGs) | CIG/ SHGs | 920 |
| 4.6.3 | FEMP/ CBMP Fund | | |
| 4.6.3.1 | Preparation of Operation Manual of FEMP/ CBMP Fund | LS | 1 |
| 4.6.3.2 | Transfer of the FEMP/ CBMP Fund | VFDS/ BMC sub-committee | 460 |

Source: JICA Study Team (2017)

Attachment II.3.7.1.1 Indicative Terms of Reference of GP Mobiliser (BMC only) and Ward Facilitators (VFDS/ BMC)

(1) GP Mobiliser (BMC only)

1.1 Objectives:

As a member-secretary of the BMC, the mobilisers are expected to guide and supervise project interventions as well as to facilitate community action, meetings, events and training and other associated activities in the Project.

1.2 Tasks:

- 1) To develop a deep understanding of communities in GP on the project and promote their active participation in every project activities
- 2) To assist BMC and BMC sub committees, CIG/ SHG in group formation, meeting, workshops, training and exposure visits.
- 3) To make regular and extended field visits at project sites to manage project implementation and coordinate project activities.
- 4) To keep records of meetings or discussions attended in the project on monthly basis.
- 5) To execute other tasks as requested by the project management

1.3 Profile/Qualification:

- 1) Reside in and belong to the targeted GP
- 2) Minimum Education Qualification: University Graduate
- 3) Strong interpersonal communication skills
- 4) Well known and respected in the community
- 5) Able to give time required for the work assigned and open to travel within the GP

(2) Ward Facilitators

1.1 Scope of Assignment:

Ward Facilitators are engaged for a cluster of wards and will function as an interface between VFDS/ BMC sub committees, FTU, DMU and CIGs/ SHGs established at wards. The facilitators shall provide the day to day guidance to the VFDS/ BMC sub committees in planning and implementation of the project interventions while helping them to maintain records and hold regular meetings.

1.2 Tasks:

- 1) To facilitate community mobilization and group formation of community institutions
- 2) To assist the project in organizing training sessions for VFDS/ BMC members and CIG/ SHGs.

- 3) To facilitate coordination with the stakeholders
- 4) To facilitate linkages with the financial or other related institutions for IGA activities
- 5) To provide guidance to VFDS/ BMC members, and CIG/ SHGs in holding meetings, maintaining records, planning and implementation of the project interventions and record keeping
- 6) To execute other tasks as requested by the project management.

1.3 Profile/Qualification:

- 1) Minimum Education Qualification: +2 passed
- 2) Resident of the wards where project is implemented
- 3) Respected in the community
- 4) Having prior experience in working as a part of the community institutions
- 5) Having learning capacity to absorb the new skills including record keeping and facilitation
- 6) Good communication skills

Attachment II.3.7.1.2 Potential Soil Water Conservation (SWC) Works

1. Basic Concept of SWC Works

Basic concept of SWC is shown below.

1.1 Purpose

The general purposes of SWC Works are shown below.

- 1) Improve degraded forest lands,
- 2) Improve soil, water and soil moisture conditions of treatment areas and their surrounding forest areas (including pasturelands), and
- 3) Restore landslide affected areas

1.2 Necessity

Forest land degradations are mainly caused by; i) erosions, ii) dry conditions, and ii) land slides. Measures to improve soil, water and soil moisture conditions are crucial to reverse such degraded forest lands to better functional and qualitative forest lands.

1.3 Background

The forest areas in HP are mostly located in steep slope and have vulnerable geological characters. Also, the climate condition in the central and lower regions of the state shows dry, and in the medium elevation areas, many heavy rains during the rainy season, in the high elevation areas, except cold desert areas, the rain fall is very less and it is very dry, and mostly no rainfall and very cold climate in the cold desert areas.

Due to such sever conditions of topographical, geological and climatic features in HP, the forest land is very vulnerable and damaged easily. Therefore, the intervention to resolve the damaged forest lands is crucially important. The SWC works are regarded as one of such important interventions.

2 SWC Works

2.1 List of Recommended SWC Works Measures

The recommended measures are listed in Table 2.1 below based on the evaluation of measures listed in “Manual on Soil and Water Conservation with focus on Watershed Management, HPFD, 2012”. The evaluation was done by the JICA study Team based on observations and inspections of existing SWC works in visited divisions. Based on the evaluations of SWC Works, the prioritised and feasible measures for the project interventions are listed in Table 2.1. Some measures which are not listed in Table 2.1 but included in the manual can be also taken up for the implementation in case site conditions and needs/necessities exist and sufficient technologies/experiences are available for such implementation.

Table 2.1 List of Recommended SWC Works Measures for the Project

| Category | | Place | Measures | Purpose or Functions |
|---|--------------------------------------|------------------------|--|--|
| I. Soil and water conservation measures | (1) Bio-engineering measures | Slope | Contour wattling [live hedge, which is composed with trench, banking, planting on banking] | - Restore eroded condition - Improve water and soil moisture condition - Improve survival ratio of planted seedlings by those above |
| | | Small stream or gully | Vegetated Palisade Wall | - Catch and save the debris behind - Generate stable condition for vegetation |
| | | Small stream | Live check dam | - Improve water and soil moisture condition by above |
| | Brush wood check dam | | | |
| | (2) Mechanical measures | Small stream | Dry stone check dam | - Catch and save the debris and water behind the dam - Generate stable condition for vegetation - Improve water and soil moisture condition by above |
| | | | Gabion check dam | |
| | | Lower stream | Gabion/ Masonry/ Concrete drop structure | |
| | | | Masonry/concrete drop structure with apron | |
| | | | Silt detention structure (concrete) | |
| | Dry hill | Concrete/ masonry pond | - Catch water in the pond - Improve water and soil moisture condition - Provide water to animals | |
| II. Measures for landslide control | Land slide triggered by weak geology | Landslide | Combination of: (a) Retaining wall (b) Series of staggered retaining walls on the slope (c) Geo-jute (d) Log crib (e) Gunny bag | - Restore eroded condition - Stabilize the slope - Generate vegetation bases - Realize stable slope and recovery by the vegetation by above |

Source: JICA Study Team (2017)

Issues on SWC Works for Landslide caused by Road Opening and SWC Works for Typical Landslips

The SWC works, which will tackle i) the landslide¹ caused by road opening and ii) landslip, are described in the Manual by HPFD 2012.

However, these will not be taken for the Project. The reasons are:

The landslide caused by road opening is very often found in HP because of steep topography, vulnerable geology, and sever weather condition. The recovery of the landslide along the road is one of the most important issues of the state government.

In principle, the responsibility for restoration of the landslide caused by road opening shall be owned by the Public Work Department (PWD) and other relevant departments which administer roads. Primarily, HPFD's responsibility is treatment of the degraded forest areas and not that of road areas. According to HPFD, the responsibility demarcation related to the landslide caused by the road opening is regarded as; the landslide in the road area shall be restored by PWD and respective departments, and the landslide in the forest area to be restored by HPFD.

According to information based on the Manual and achievements HPFD, the measures against landslides are considered as rather weak to protect the road, because most of the structures constructed

¹ The definition of "landslip" in the Manual by HPFD 2012 is called as "landslide" and the land slide in the manual is called as "slope failure" generally. However, in this report words in the manual are used.

by HPFD are dry stone walls or dry stone walls with wire. These structures are not strong enough as measures which enable to protect such important property includes human lives, sufficiently. Usually, for such protection purpose, the structures shall be constructed by concrete or masonry, at least gabion structures. However, these structures have not been taken up by HPFD. The dry stone wall with GI (galvanized iron) wire structure looks similar with the gabion structures but is not the same as gabion. The single knot of the wire, which is used by HPFD normally as stone wall with wire, is not durable enough for disaster prevention work in accordance with technical guideline of the PWD. Generally, the gabion net is prepared at factories with double knots and transported to the construction sites. Therefore, the dry stone wall with GI wire and gabion wall are quite different. Furthermore, HPFD doesn't have much experiences of construction of masonry or concrete wall structures on the landslide. Therefore, it is more effective and advantageous for the HPFD to improve its technical capacity for such civil engineering interventions, and then start these works in the near future.

For the typical type of the landslip, any SWC works will not be taken for the Project based on the reasons below.

- ◆ Restoration of the typical type of landslip requires detail study with topographic survey, water channel observation, geology study, boring tests, analysis water flow system, slope stability analysis, comparison analysis with some case of works, etc.
- ◆ After the detail study above, detail design work shall be taken.
- ◆ Unfortunately, HPFD doesn't have civil engineers or specialists for those works above.
- ◆ The study takes long time period with much costs.

Basic Principles for Landslides/ Landslips related SWC works for the Project

Therefore, in the Project plan, the SWC works related to the landslide/landslip are selected with following criteria and principles.

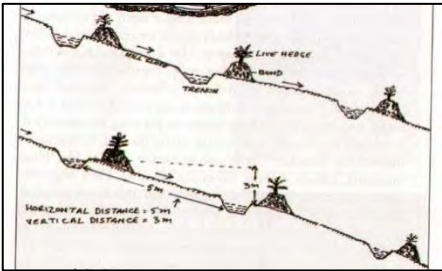



- ◆ SWC works for the landslides which are located at both of upper and lower side of the major road will not be taken up. However, if conditions allow, SWC works for the landslides which are located down side of the road with enough distance from the road can be taken up,
- ◆ SWC works inside forest areas without relation with road and other important properties will be taken up, and
- ◆ SWC works for the landslip will not be taken up



2.2 Description of SWC Works

The details of recommended SWC works listed in the Table 2.1 are described in Table 2.2 .

Table 2.2 Potential SWC Works for the Project

| Type of SWC Works | Description |
|--|--|
| I. Soil and water conservation measures (1) Bio-engineering measures at slope | This will be used to improve the condition of water and soil moisture in the forest area or the planation places. The tangible operations of the work are: |
| Contour wattling [live hedge, which is composed with trench, banking, planting on banking] | |

| Type of SWC Works | Description |
|--|--|
| <p>(Example picture quoted from the Manual)</p>  | <p>Excavation of trench along the planation line Banking the excavated soil under the trench The seedlings will be planted on the bank in case of usage of this work with planation work.</p> |
| <p>I. Soil and water conservation measures (1) Bio-engineering measures at stream or gully</p> | |
| <p>Vegetated Palisade Wall</p> <p>(Example picture quoted from the Manual)</p>  | <p>This work will be used for i) stabilization of gully/ small stream bed and ii) generating of vegetation recovery.</p> <p>Tangible operations of the work are: Digging holes for wood sticks Installation of the wood stick into the hole Tie the sticks and fill the gaps</p> <p>This structure is not strong or weak for run-off water and sediment flow. Therefore, this type will be used for the stream/ gully where no usual water flows and almost no sediment flow is expected.</p> |
| <p>Live check dam Brush wood check dam</p> <p>(Example picture quoted from the Manual)</p>  | <p>This work will be used for i) stabilization of gully/ small stream bed and ii) generating of vegetation recovery</p> <p>Tangible operations of the work are: Installation of stakes to hold the main body which is composed with wooden cross bars Install the cross bars which save silt and moisture</p> <p>This structure is not strong or weak for run-off water and sediment flow. Therefore, this type will be used for the stream/ gully where no usual water flows and almost no sediment flow is expected.</p> |
| <p>I. Soil and water conservation measures (2) Mechanical measures</p> | |
| <p>Dry stone check dam</p> <p>(Example picture quoted from the Manual)</p>  | <p>This will be used for i) stabilization of gully/ small stream bed by decreasing the gradient of gully/ stream bed and storage debris and silt behind the dam, ii) generate vegetation basis behind the dam, and iii) improve water and soil moisture condition of the surrounding area.</p> <p>Tangible operations of the work are: Excavation of the gully/ stream bed to install the dam basis Install lose stones and boulders</p> <p>This structure is not strong compared with gabion/ masonry/concrete dams. Therefore, this will be used at small scale stream or stream with the width between 1 to 3m. the height of the dam shall be less than 1.5m including foundation.</p> |

| Type of SWC Works | Description |
|---|---|
| <p>Gabion check dam/ wire crate check dam</p> <p>(Example picture quoted from the Manual)</p>  | <p>This will be used for i) stabilization of gully/ small stream bed by decreasing the gradient of gully/ stream bed and storage debris and silt behind the dam, ii) generate vegetation basis behind the dam, and iii) improve water and soil moisture condition of the surrounding area.</p> <p>Tangible operations of the work are: Excavation of the gully/ stream bed to install the dam basis Set gabion net or wire crate Install lose stones and boulders Close the net or crate</p> <p>This structure is stronger than dry stone check dam but not strong compared with masonry/concrete dams. Therefore, this will be used at small to middle scale stream or stream with the width between 2 to 6m. The height of the dam will be less than 1.5m including foundation excludes spill way.</p> <p>(Size of Gabion check dam/ wire crate dam) 2 sizes of check dam were considered in this report. - Small size: L=6m, H=1.5m (exclude spill way) - Middle size: L=12m, H= 1.5m (-ditto-)</p> |
| <p>Masonry drop structure</p> <p>Masonry drop structure with apron</p> | <p>This will be used for i) stabilization of small or middle scale stream bed by decreasing the gradient of stream bed and storage debris, silt and water behind the dam, ii) generate vegetation basis behind the dam, and iii) improve water and soil moisture condition of the surrounding area. Apron will be used for water retention for animals just in case.</p> <p>Tangible operations of the work are: Excavation of the stream bed and side to install the dam basis Build stone with cement which fills the gaps between stone/boulders</p> <p>This structure is stronger than gabion check dam but not strong compared with concrete dam. Therefore, this will be used at middle scale stream or stream with the width between 2 to 6m. difference between this and gabion is porous or not and this will be used for water retention purpose to improve the dry condition at the site. The height of the dam will be between 1.5m to 3.0 m including foundation excludes spill way.</p> <p>(Size of Masonry drop) 2 sizes of drop were considered in this report. - Small size: L=6m, H=1.5m (exclude spill way) - Middle size: L=12m, H= 2.5m (-ditto-)</p> |
| <p>Silt detention structure (concrete)</p> <p>(Example picture quoted from the Manual)</p>  | <p>This will be used for i) stabilization of middle or large scale stream/river bed by decreasing the gradient of stream bed and storage debris, silt and water behind the dam, ii) generate vegetation basis behind the dam, and iii) improve water and soil moisture condition of the surrounding area. Apron will be used for water retention and prevent erosion of the lower side of the structure.</p> <p>Tangible operations of the work are: Excavation of the stream bed and side to install the dam basis Build framework Installation of concrete into the frame</p> <p>This structure is the strongest check dam among the several types. Also, this type is massive concrete without porous. Therefore, this will be used at middle or big scale stream/river with the width</p> |

| Type of SWC Works | Description |
|---|--|
| | <p>between 6 to 12m. This will be used for water retention purpose to improve the dry condition at the site. The height of the dam will be between 3m to 4.5 m including foundation excludes spill way.</p> <p>(Size of concrete silt detention dam) 3 sizes of dam were considered in this report. - Small size: L=6m, H=1.5m (exclude spill way) - Middle size: L=12m, H= 2.5m (-ditto-) - Large size: L= 20m, H= 4.0m (-ditto-), with side wall</p> |
| Concrete pond | <p>This will be used for i) retention of water, ii) improvement of water and soil moisture condition of the surrounding area, and iii) water supply for animals in the dry weather area.</p> <p>Tangible operations of the work are: Excavation of the gentle slope Build framework Installation of concrete into the frame</p> <p>This structure is water retention pond. The water will be retained in the pond and the overflow water will improve the water and soil moisture condition surrounding the structure. Also, it can provide water to the animals in case.</p> <p>(size of concrete pond) 3 sizes of dam were considered in this report. - Small size: L=5.8m, Depth=1.0m - Middle size: L=8.8m, H= 1.0m - Large size: L= 15.8m, H= 2.0m</p> |
| <p>II. Measures for landslide control For Land slide triggered by weak geology</p> | |
| <p>Combination of: (a) Retaining wall (b) Series of staggered retaining walls on the slope (c) Geo-jute (d) Log crib (e) Gunny bag</p> | <p>The series of structures will be used to restore the eroded or collapsed slope.</p> <p>(a) Retaining wall: This will be constructed at the lowest position of the landslide. High pressure of the soil, with water in case, to the wall is expected. Therefore, the wall shall be constructed by masonry or concrete.</p> <p>(b) Series of staggered retaining walls on the slope This will reduce run-off water speed and divert the water flow, then prevent slope erosion and stabilize the slope. Also, it becomes vegetation recovery basis, because the wall can keep soil and soil moisture behind the wall.</p> <p>(c) Geo-jute This will protect the slope surface between wall to wall, and keep soil moisture, then accelerates vegetation recovery.</p> <p>(d) Log crib, (e) gunny bag It will be used to support the function of (b) above.</p> |

Source: JICA Study Team (2017) based on the information of the Manual of HPFD 2012

2.3 Categorization of WSC Works applied to components of the Project

The SWC works are planned one of the sub-components of Component 1, Sustainable Forest Management. In Component 1, the subcomponents are classified into two categories as PFM (Participatory Forest Management) Mode and Departmental Mode.

(1) SWC Works in PFM Mode

Simple and easy works is required for the SWC works in PFM mode, because the local people who will work for this are assumed as normal persons without any expertise of civil engineering. Therefore, the Bio-engineering measures on the slope and small gully or stream will be taken as this category.

1) ex-situ SWC works (Drainage Line Treatment) with PFM Mode

Not limited to below but following measures for small gullies and streams will be mainly taken up for the PMF mode.

(Bioengineering measures): Vegetated palisade wall, live check dam, brush wood check dam

(Mechanical measure): Dry stone check dam, masonry check dam, masonry pond

2) in-situ SWC works with PFM Mode

The major purpose is to improve soil and moisture regimes of the treatment areas such as plantation areas to improve the survival and growth of planted trees. Not limited to below, but following measures to be adopted reflecting the site conditions and treatment objectives

contour wattling, pits, vegetative barriers, dry stone check dams/walls

(2) SWC Works in Departmental Mode

1) ex-situ SWC Works with Departmental Mode

All of recommended SWC works are considered to be implemented in this mode, reflecting site conditions and objectives of SWC works. Additionally, the further capacity development for the HPFD staff members will be required during the preparatory stage.

2) in-situ SWC works with Departmental Mode

Basically, the same approach and methods as the PFM mode will be adopted

(3) Categorization of SWC Works in Component 1:Sustainable Forest Management

With consideration of the conditions above, all recommendable SWC works are categorized below.

Table 2.3 SWC Works Measures for Sustainable Forest Management

| PFM Mode | | | | |
|---|--------------------------------------|-----------------------|--|-----------------|
| Category | | Place | Measures | In/Ex-situ |
| I. Soil and water conservation measures | (1) Bio-engineering measures | Slope | Contour wattling [live hedge, which is composed with trench, banking, planting on banking] | In-situ |
| | | Small stream or gully | Vegetated Palisade Wall | Both In/Ex-situ |
| | | Small stream | Live check dam Brush wood check dam | |
| | (2) Mechanical measures | Small stream | Dry stone check dam | Ex-situ |
| | | Dry hill | Masonry pond | |
| Department Mode | | | | |
| Category | | Place | Measures | In/Ex-situ |
| I. Soil and water conservation measures | (1) Bio-engineering measures | Slope | Contour wattling [live hedge, which is composed with trench, banking, planting on banking] | In-situ |
| | | Small stream or gully | Vegetated Palisade Wall | Both In/Ex-situ |
| | | Small stream | Live check dam Bush check dam | |
| | (2) Mechanical measures | Small stream | Dry stone check dam Gabion check dam | Mostly Ex-situ |
| | | Lower stream | Gabion/ Masonry/ Concrete drop structure Masonry/concrete drop structure with apron Silt detention structure (concrete) | |
| | | Dry hill | Concrete/ masonry pond | Both In/Ex-situ |
| II. Measures for landslide control | Land slide triggered by weak geology | Landslide | Combination of: (a) Retaining wall (b) Series of staggered retaining walls on the slope (c) Geo-jute (d) Log crib (e) Gunny bag | Mostly Ex-situ |

Source: JICA Study Team (2017)

(4) SWC Works for Other Components

SWC works will be used for the other components, 1) Component 2: Biodiversity Conservation, and 2) Component 3: Community development and livelihood improvement.

1) SWC Works for biodiversity conservation

Water supply for animals, is required for this component. Drinking ponds are proposed for this but concrete pond is not recommended from landscape aspect. Three sizes of pond designs are considered in this report. And the small or middle size ponds are recommended for this purpose. However, the actual size shall be determined based on the condition of the site. In general, middle size pond shall be used at pastures/ grasslands and small size pond shall be used for small pastures/ grasslands and forest areas.

2) SWC works for community development

Big scale works and any measures which requires heavy equipment or special engineering knowledge are not considered for this component, because most of the work will be implemented by the local people. Therefore, in case the water harvesting is necessary, small size masonry check dam and/or pond are proposed.

3 Indicative SWC Works Models

3.1 Indicative Concepts of SWC Work

The concept of the SWC works are considered based on three categorized areas such as, 1) cold desert area, 2) dry low land area ,and 3) normal forest area. The characteristics of these are described below. However actual plan, design and implementation shall be site specific and objective oriented.

(1) Cold Desert Area

1) Condition and problem of this area on the aspect of water, soil, and soil moisture conditions

The area in northern part HP, Lahaul division, Spiti division and northern part of Kinnaur division are typical type of areas in this category. The natural condition characteristics of this area are less rainfall (almost zero), cold temperature, much snow falls, poor and thin soil layer, and steep topography. Most of the forest activities such as plantation, ANR are not implemented much due to those natural conditions. However, the necessity of SWC works are high, the reasons are described below.

The area is severe for vegetation development due to the weather conditions mainly. Meanwhile, much snow fall makes much water flow and run-off after snow melting and they erode the slope, stream floor and banks and grassland. Therefore, for the aspect of forest are conservation, SWC works shall be implemented to resolve these problems and improve the forest area condition.

2) Necessary and proposal of SWC Work measures for this area

Major target places for the SWC works are slope of pasture, grassland, small stream such as zero level river, and small gully area. In the stream, the major problems are caused by snow melted water; therefore, stream/ gully plug structures such as concrete, masonry, gabion, and drystone check dams are considered. However, concrete check dam is not available in the area due to less experience by HPFD and masonry type is also not recommended, because the weight of snow which will be piled behind the check dam is estimated much and when it will be melted the behind of the check dam will be filled by water. Masonry type doesn't have porous function which will release the water to reduce the pressure. It means the masonry type is not much strong enough as same as concrete but can't reduce the pressure as same as porous type dam. Therefore, masonry type is not recommended. Recommended type of check dam is gabion type and drystone type for gentle stream gradient place.

3) Effectiveness of the measures in this area on aspect of SWC

These check dams will store the snow up to spring to early summer season, the melted snow water will be released little by little and flow to the lower stream without erosion. Also, the stored snow or melted snow water will be released through the dam little by little, and improve the water and soil moisture condition of surrounding places.

(2) Dry Low Land Area

1) Condition and problem of this area on the aspect of water, soil, and soil moisture condition

The area of low land of Bilaspur, Mandi, Kullu, and Rampur are included. The area condition is described as below:

Very less rainfall and almost no snow falls in this area and the temperature is high. During the dry season, most of the vegetation get draught damage and tree and grass growth are much low. Also, the dry weather condition accelerates the pasture/ grassland degradation. Therefore, in this area, general forest function such as water storage and provision of good habitats for animals don't work well. Especially, the planted seedlings in this area has not good survival ratio of due to shortage of water and soil moistures for the planted seedlings.

2) Necessary and proposal of SWC Work measures for this area

Due to the sever dry weather condition, water, soil moisture conditions are poor in this area. They make un-healthy forest condition and loose the general forest functions. Therefore, recovery of the water and soil moisture condition in this area is crucial. The water and soil moisture shortage shall be resolved by SWC works on the slope area.

Concrete silt retention dams, masonry or gabion check dams, and water ponds are recommended for this area. The concrete silt retention dam and water pond are recommended in the lower place where the river or stream floor and slope gradient are gentle, because steep slope are not appropriate to reserve water. Masonry check dam will be implemented on the middle portion and gabion check dam will be installed in the upper-stream of stream. The type of check dam will be considered based on the gradient and width of the stream.

For the planation area, to catch and reserve the rainfall and run-off water on the slope, and accelerate the penetration of water into the ground is very important for improvement of the water and soil moisture condition in the plantation area. For this point of view, the trench and banking works along the planted seedling line on the contour-line is recommend. Some of the vegetation measures such as vegetation barrier is nominated in the HPFD manual 2012. However, in this dry area, these are considered not effective and not recommended.

3) Effectiveness of the measures in this area on aspect of SWC

The check dams in the rivers or stream play to generate water pockets behind the dams at the beginning stage after construction. The pockets will be filled by silt, sand, gravels time by time and the water pockets will be replaced to the soil pockets finally. Even as the soil pockets behind the dams, they will storage water in themselves during rainy season and the soil can keep the moisture during the dry season. Therefore, the check dams can work to reserve water and soil moisture whole seasons and right after from the construction and after the construction.

The trench work along the planted seedling can catch and reserve water and provide them to the planted seedlings during the rainy season. The storage water will improve the soil moisture condition for the planted seedlings and help them to grow. Therefore, the trench work can assist the planted trees growth and improve the survival ratio of the plantation work.

(3) Normal Forest Area

1) Condition and problem of this area on the aspect of water, soil, and soil moisture condition

There are many forest areas in this area, because the weather condition, moderate amount of rainfall, not cold temperature, is good for trees to grow. However, monsoon weather tend to make damage on both slope and stream areas. The high intention rainfall makes erosion on the slope and generate debris in the stream. The stream floor and banks are eroded by the flush flood and sediment flow. The eroded soil at stream floor and banks are erodes them at the lower portion of the stream again. The erosion of the stream floor and banks influence not only the eroded places but also the lower portions. The high intention rainfall makes not only erosion on the slope but also sometimes cause the landslide. The landslide will generate much amount of sediment which will flow the stream and erode the stream floor and banks. Therefore, the landslide also one of the biggest issues to be tackled in this area. Meanwhile, this area has variety of conditions such as, dry weather area, cold area on the high-altitude. These areas have the problems as same as the other areas which are described above.

2) Necessary and proposal of SWC Work measures for this area

The typical problems in this area is erosion by high intention rainfall. Therefore, restoration of erosion, landslide, protect stream/ river floor and banks against the flash flood and sediment flow are necessary. Trench and banking on the slope can work to catch the eroded soil and keep the water/ soil moisture in the plantation area. Some of vegetation barrier can work here in case the HPFD has work experience. The recommended SWC works measure in the stream/ river are check dams. The type of check dams will be considered based on the stream or river condition such as, whether usual water flow are there or not, stream/ river width and gradient of floor. The stream is steep and mostly no usual water flow in the upper stream; therefore, dry stone dam or gabion check dam are recommended there. In the middle of the stream/river, mostly usual water is expected; therefore, the dry stone check dam is not recommended due to unstable structure for these. Therefore, gabion or masonry check dams are recommended. In the lower-stream, much usual water flow and wide stream/ river are expected. The water pressure is much more than the upper-stream; therefore, concrete or masonry check dams are recommended.

The SWC works measure on the landslide are different from the other areas above. Due to the steep slope area in HP mountainous areas, most of the landslides has steep slope gradient, the erosion continues in most of the case; therefore, natural vegetation recovery can't be expected. Therefore, SWC works need to stop erosion first. And also the structures are expected become vegetation recovery bases. Based on this consideration, masonry retention wall is planned on the lowest place of the landslide. The run-off speed and energy are much and easily erode the slope. Therefore, run-off water's speed and energy shall be reduced on the slope of the landslide. The staggered retention walls are planned for this function. The gabion walls can't be constructed closely each other, because the excavation area of the lower places effect to the upper-side. Some distance shall be kept between walls. Therefore, staggered distribution is recommended. The log crib and gunny bags with terracing work are expected supplement the slope stabilization between walls and becomes vegetation bases. The

slope covering work can prevent soil erosion, stabilize the slope, and keep the moisture of the soil. It will work for acceleration of vegetation recovery.

3) Effectiveness of the measures in this area on aspect of SWC

i) Stream area

The check dams will work to prepare pocket behind themselves and reserve the sediment there. The piled sediment behind the dams has gentle slope generally and it can reduce the water and sediment flow in the stream. Then, they can prevent the further erosion in the stream and lead the water and sediment flow safely to the down-stream. They are expected to work for stability of the stream/rivers and also the pocket filled by flowed sediment can be expected to become bases of vegetation recovery.

ii) Slope area

the combination of trench and banking works can be expected to work cut the run-off on the slope and reduce erosion. Also, they can keep water and soil moisture for the planted seedling. Both prevention of erosion and keep moisture can be provided by the works.

iii) Landslide area

The combination of retention wall, staggered walls, log crib, gunny bags with terracing and slope covering can work stop further erosion on the landslide and work for vegetation recovery. The vegetation recovery is essential for the slope stabilization. Therefore, these SWC works measures are expected as supporting facilities for the vegetation recovery, because these artificial structures can't work for long time but they can support the vegetation self-recovery which can keep the slope stability and healthy forest condition.

3.2 Indicative SWC Works Models

The indicative SWC works models are considered for each type of categorised areas.

The dimension or scale of the structures such as length, height of check dams is considered based on the typical size of the stream/rivers. And respective models for PFM mode and departmental mode are considered for each area. The indicative SWC works models for each area for both of PFM and departmental mode are shown in tables under this section. The models are indicative and the actual types, designs, and quantities of SWC works to be introduced shall be decided based on the site-specific conditions and requirements of the intervention areas based on the results of site specific survey, planning and designs.

(1) Cold Desert Area

[Ex-situ SWC Works]: The indicative PFM mode model is shown below.

Table 3.1 Indicative PFM Mode SWC Works in Cold Desert Area (ex-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | 0 | ha |
| Contour line wattling | (800seedling/ha) | 10 | ha |
| Contour line wattling | (400seedling/ha) | 0 | ha |
| Vegetated Palisade Wall | | 0 | m |
| Live check dam | | 0 | nos |
| Brush wood check dam | | 3 | nos |
| Dry stone check dam | S-size | 1 | nos |
| Gabion check dam | S-size | 1 | nos |
| Gabion check dam | M-size | 0 | nos |
| Masonry check dam | S-size | 0 | nos |
| Masonry check dam | M-size | 0 | nos |
| Concrete check dam | M-size | 0 | nos |
| Concrete check dam | L-size | 0 | nos |
| Masonry pond | S-size | 1 | nos |
| Masonry pond | M-size | 0 | nos |
| Masonry pond | L-size | 0 | nos |
| Landslide counter measures*1) | | 0 | ha |

Source: Prepared by JICA Study Team (2017)

[Ex-situ SWC Works]: The indicative departmental mode model is shown below.

Table 3.2 Indicative Departmental Mode SWC Works in Cold Desert Area (ex-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | 0 | ha |
| Contour line wattling | (800seedling/ha) | 10 | ha |
| Contour line wattling | (400seedling/ha) | 0 | ha |
| Vegetated Palisade Wall | | 0 | m |
| Live check dam | | 0 | nos |
| Brush wood check dam | | 0 | nos |
| Dry stone check dam | S-size | 20 | nos |
| Gabion check dam | S-size | 10 | nos |
| Gabion check dam | M-size | 5 | nos |
| Masonry check dam | S-size | 0 | nos |
| Masonry check dam | M-size | 0 | nos |
| Concrete check dam | M-size | 0 | nos |
| Concrete check dam | L-size | 0 | nos |
| Masonry pond | S-size | 2 | nos |
| Masonry pond | M-size | 0 | nos |
| Masonry pond | L-size | 0 | nos |
| Landslide counter measures*1) | | 0 | ha |

Source: Prepared by JICA Study Team (2017)

(2) Dry Low Land Area

(2) - 1) [PFM mode]

Table 3.3 Indicative PFM Mode SWC Works in Dry Low Land Area (in-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | 0 | ha |
| Contour line wattling | (800seedling/ha) | 10 | ha |
| Contour line wattling | (400seedling/ha) | 0 | ha |
| Vegetated Palisade Wall | | 0 | nos |
| Live check dam | | 0 | nos |
| Brush wood check dam | | 10 | nos |
| Dry stone check dam | S-size | 0 | nos |
| Gabion check dam | S-size | 2 | nos |
| Gabion check dam | M-size | 0 | nos |
| Masonry check dam | S-size | 1 | nos |
| Masonry check dam | M-size | 0 | nos |
| Concrete check dam | M-size | 0 | nos |
| Concrete check dam | L-size | 0 | nos |
| Masonry pond | S-size | 2 | nos |
| Masonry pond | M-size | 0 | nos |
| Masonry pond | L-size | 0 | nos |
| Landslide counter measures*1) | | 0 | ha |

Source: Prepared by JICA Study Team (2017)

Table 3.4 Indicative PFM Mode SWC Works in Dry Low Land Area (ex-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | 0 | ha |
| Contour line wattling | (800seedling/ha) | 2 | ha |
| Contour line wattling | (400seedling/ha) | 0 | ha |
| Vegetated Palisade Wall | | 0 | nos |
| Live check dam | | 0 | nos |
| Brush wood check dam | | 5 | nos |
| Dry stone check dam | S-size | 5 | nos |
| Gabion check dam | S-size | 2 | nos |
| Gabion check dam | M-size | | nos |
| Masonry check dam | S-size | | nos |
| Masonry check dam | M-size | 1 | nos |
| Concrete check dam | M-size | | nos |
| Concrete check dam | L-size | | nos |
| Masonry pond | S-size | | nos |
| Masonry pond | M-size | 1 | nos |
| Masonry pond | L-size | | nos |
| Landslide counter measures*1) | | | ha |

Source: Prepared by JICA Study Team (2017)

(2) – 2) [Departmental mode]

Table 3.5 Indicative Departmental Mode SWC Works in Dry Low Land Area (in-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | 0 | ha |
| Contour line wattling | (800seedling/ha) | 5 | ha |
| Contour line wattling | (400seedling/ha) | 0 | ha |
| Vegetated Palisade Wall | | 0 | nos |
| Live check dam | | 0 | nos |
| Brush wood check dam | | 0 | nos |
| Dry stone check dam | S-size | 5 | nos |
| Gabion check dam | S-size | 0 | nos |

| Measures | Specification | Quantity | Unit |
|-------------------------------|---------------|----------|------|
| Gabion check dam | M-size | 2 | nos |
| Masonry check dam | S-size | 0 | nos |
| Masonry check dam | M-size | 1 | nos |
| Concrete check dam | M-size | 0 | nos |
| Concrete check dam | L-size | 0 | nos |
| Masonry pond | S-size | 2 | nos |
| Masonry pond | M-size | 0 | nos |
| Masonry pond | L-size | 0 | nos |
| Landslide counter measures*1) | | 0 | ha |

Source: Prepared by JICA Study Team (2017)

Table 3.6 Indicative Department Mode SWC Works in Dry Low Land Area (ex-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | 0 | ha |
| Contour line wattling | (800seedling/ha) | 5 | ha |
| Contour line wattling | (400seedling/ha) | 0 | ha |
| Vegetated Palisade Wall | | 0 | nos |
| Live check dam | | 0 | nos |
| Brush wood check dam | | 0 | nos |
| Dry stone check dam | S-size | 0 | nos |
| Gabion check dam | S-size | 0 | nos |
| Gabion check dam | M-size | 2 | nos |
| Masonry check dam | S-size | 0 | nos |
| Masonry check dam | M-size | 1 | nos |
| Concrete check dam | M-size | 0 | nos |
| Concrete check dam | L-size | 1 | nos |
| Masonry pond | S-size | 0 | nos |
| Masonry pond | M-size | 1 | nos |
| Masonry pond | L-size | 1 | nos |
| Landslide counter measures*1) | | 0 | ha |

Source: Prepared by JICA Study Team (2017)

(3) Normal Forest Area

(3) - 1) [PFM mode]

Table 3.7 Indicative PFM Mode SWC Works in Normal Forest Area (in-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | 0 | ha |
| Contour line wattling | (800seedling/ha) | 10 | ha |
| Contour line wattling | (400seedling/ha) | 0 | ha |
| Vegetated Palisade Wall | | 0 | nos |
| Live check dam | | 0 | nos |
| Brush wood check dam | | 5 | nos |
| Dry stone check dam | S-size | 5 | nos |
| Gabion check dam | S-size | 0 | nos |
| Gabion check dam | M-size | 0 | nos |
| Masonry check dam | S-size | 1 | nos |
| Masonry check dam | M-size | 0 | nos |
| Concrete check dam | M-size | 0 | nos |
| Concrete check dam | L-size | 0 | nos |
| Masonry pond | S-size | 2 | nos |
| Masonry pond | M-size | 1 | nos |
| Masonry pond | L-size | 0 | nos |
| Landslide counter measures*1) | | 0 | ha |

Source: Prepared by JICA Study Team (2017)

Table 3.8 Indicative PFM Mode SWC Works in Normal Forest Area (ex-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | | ha |
| Contour line wattling | (800seedling/ha) | 2 | ha |
| Contour line wattling | (400seedling/ha) | | ha |
| Vegetated Palisade Wall | | | nos |
| Live check dam | | | nos |
| Brush wood check dam | | 5 | nos |
| Dry stone check dam | S-size | | nos |
| Gabion check dam | S-size | 5 | nos |
| Gabion check dam | M-size | 2 | nos |
| Masonry check dam | S-size | 2 | nos |
| Masonry check dam | M-size | 1 | nos |
| Concrete check dam | M-size | | nos |
| Concrete check dam | L-size | | nos |
| Masonry pond | S-size | 2 | nos |
| Masonry pond | M-size | 1 | nos |
| Masonry pond | L-size | | nos |
| Landslide counter measures*1) | | 0 | ha |

Source: Prepared by JICA Study Team (2017)

(3) – 2) [Department mode]

Table 3.9 Indicative Department Mode SWC Works in Normal Forest Area (in-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | | ha |
| Contour line wattling | (800seedling/ha) | 5 | ha |
| Contour line wattling | (400seedling/ha) | | ha |
| Vegetated Palisade Wall | | | nos |
| Live check dam | | | nos |

| Measures | Specification | Quantity | Unit |
|-------------------------------|---------------|----------|------|
| Brush wood check dam | | | nos |
| Dry stone check dam | S-size | | nos |
| Gabion check dam | S-size | 2 | nos |
| Gabion check dam | M-size | | nos |
| Masonry check dam | S-size | 1 | nos |
| Masonry check dam | M-size | 1 | nos |
| Concrete check dam | M-size | 1 | nos |
| Concrete check dam | L-size | | nos |
| Masonry pond | S-size | 3 | nos |
| Masonry pond | M-size | 1 | nos |
| Masonry pond | L-size | | nos |
| Landslide counter measures*1) | | 0.1 | ha |

Source: Prepared by JICA Study Team (2017)

Table 3.10 Indicative Department Mode SWC Works in Normal Forest Area (ex-situ)

| Measures | Specification | Quantity | Unit |
|-------------------------------|--------------------|----------|------|
| Contour line wattling | (1,100seedling/ha) | | ha |
| Contour line wattling | (800seedling/ha) | 4 | ha |
| Contour line wattling | (400seedling/ha) | | ha |
| Vegetated Palisade Wall | | | nos |
| Live check dam | | | nos |
| Brush wood check dam | | | nos |
| Dry stone check dam | S-size | | nos |
| Gabion check dam | S-size | 1 | nos |
| Gabion check dam | M-size | 1 | nos |
| Masonry check dam | S-size | | nos |
| Masonry check dam | M-size | 1 | nos |
| Concrete check dam | M-size | | nos |
| Concrete check dam | L-size | 1 | nos |
| Masonry pond | S-size | | nos |
| Masonry pond | M-size | 1 | nos |
| Masonry pond | L-size | 1 | nos |
| Landslide counter measures*1) | | 0.1 | ha |

4 Implementation Structure

4.1 PFM Mode

The major SWC works to be implemented under PFM mode are contour wattling on slope and vegetated palisade wall, live check dam, and brush wood check dam on small stream or gully. Simple and easy construction structures shall be selected. Therefore, specific designs for these are not required. The community level implementing bodies can carry the work with assistance by the HPFD.

4.2 Departmental Mode

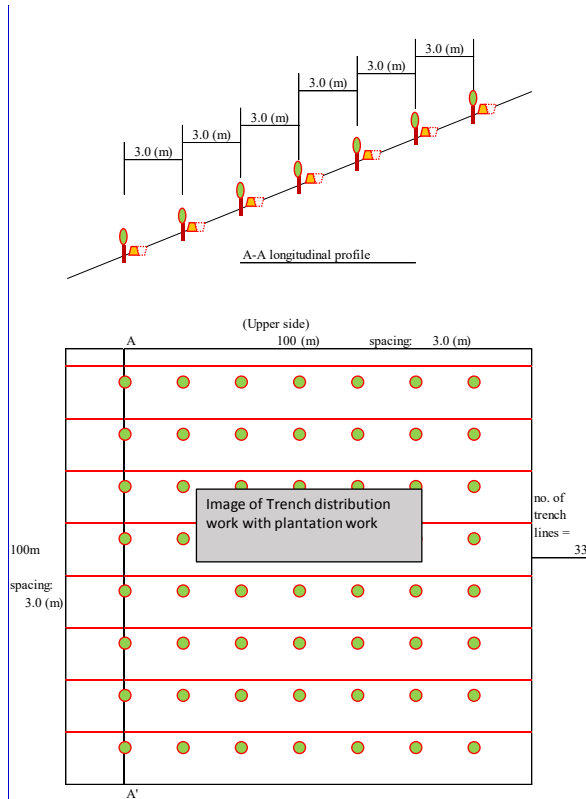
The major SWC works to be implemented under the Department mode are all types of the structures described above. Most of the structures construction except the bio-engineering measure require detail design work. Especially this is crucial for the landslide restoration work.

Also, the construction of these works except bio-engineering works require professional work by contractors. HPFD can prepare designs and implementation by direct employment and direct material / equipment procurement. However, for the effective and efficient implementation, it is better for

HPFD offices to concentrate on supervision of the contractor. Therefore, contract out for construction work instead of direct implementation by HPFD is appreciated. The detail design for the mechanical as well as landslide measures are crucial. Two ways are recommended for this as; i) contract out and ii) direct design work by HPFD offices after capacity development programmes.

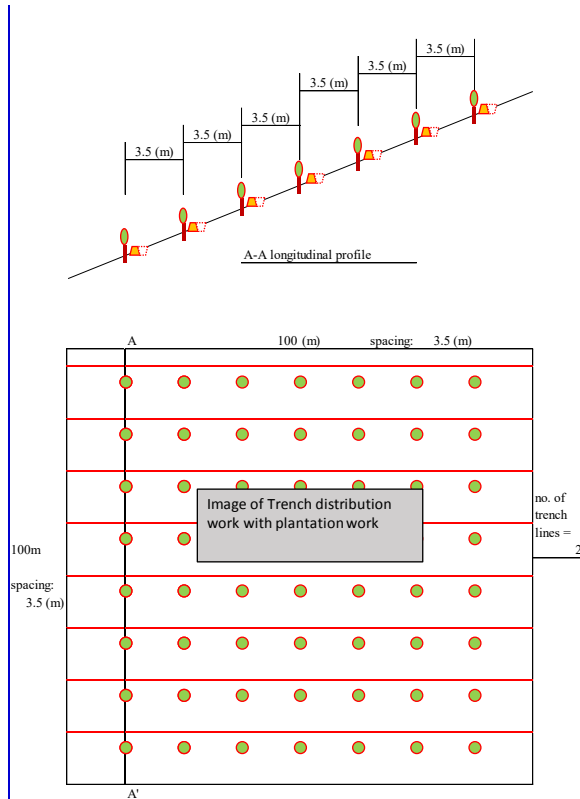
5 Indicative Designs of Major SWC Works

Indicative designs of major potential SWC works for the Project are described hereunder.

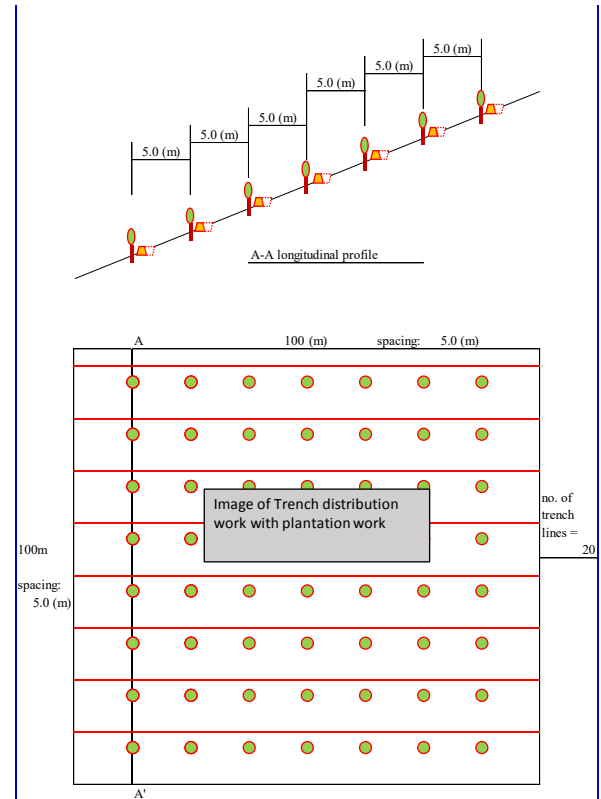


Indicative design of **Contour Line Wattling**

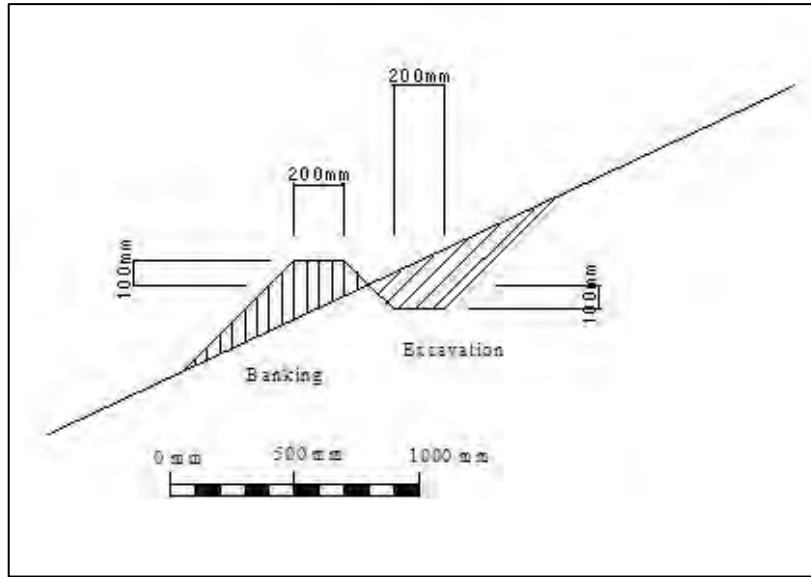
With high density plantation (1,100 seedling /ha)



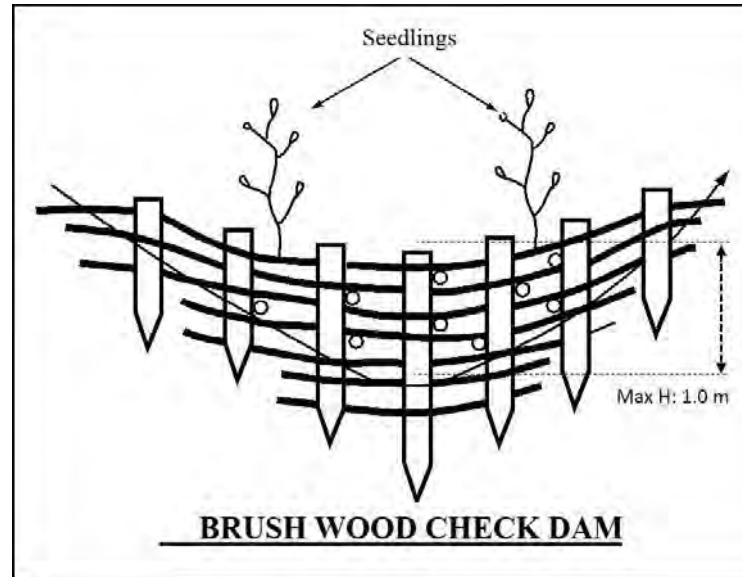
with middle density plantation (800 seedling /ha)



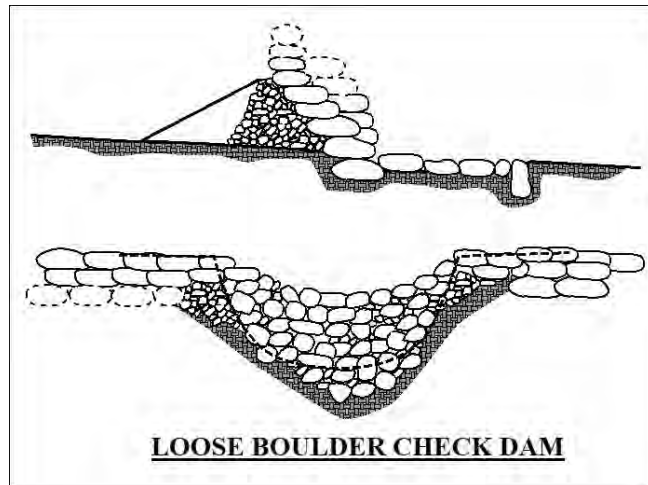
with low density plantation (400 seedling/ ha)



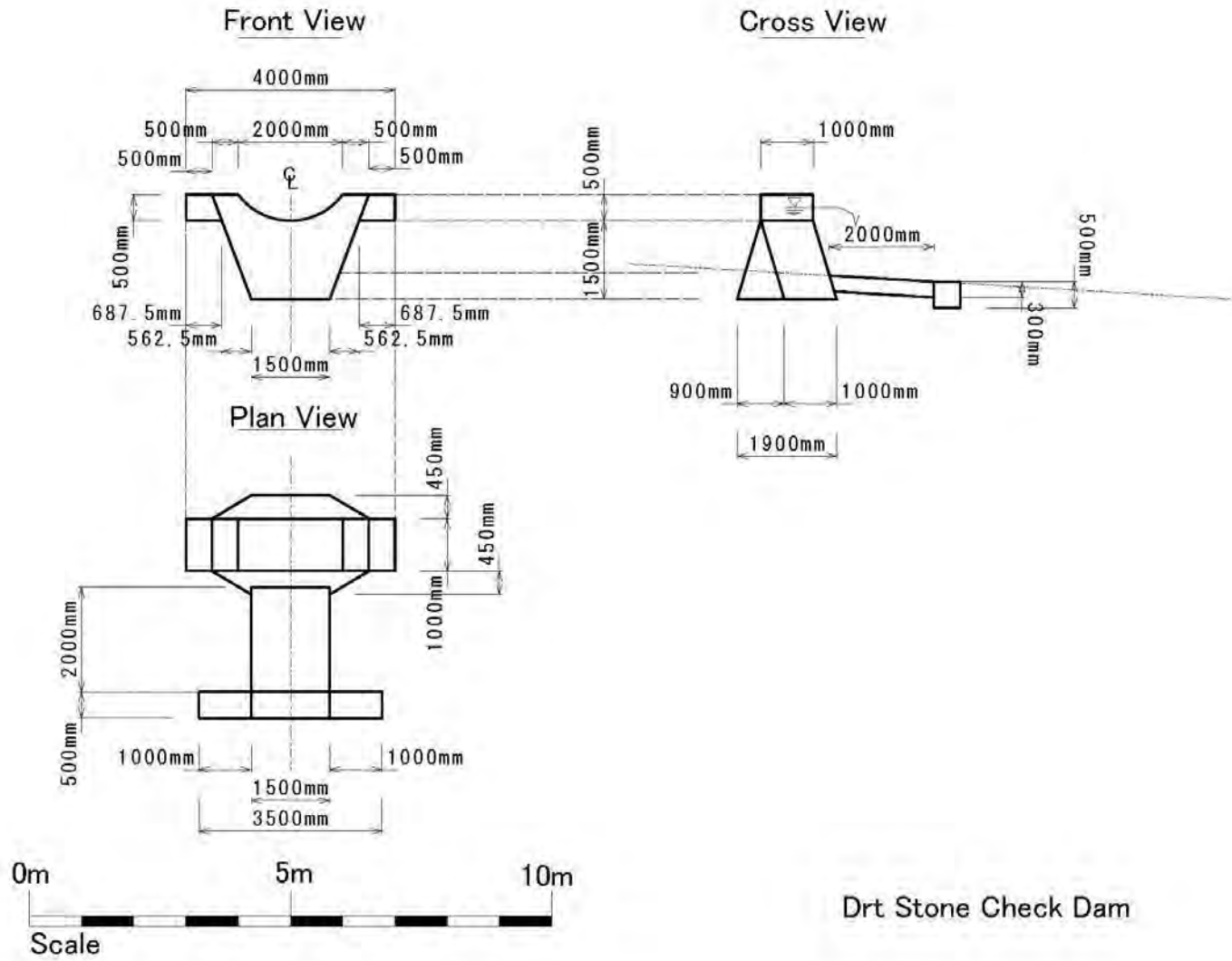
Details of **Trench Work of Contour Line Wattling**

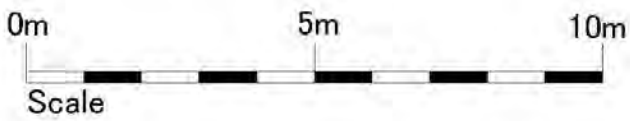
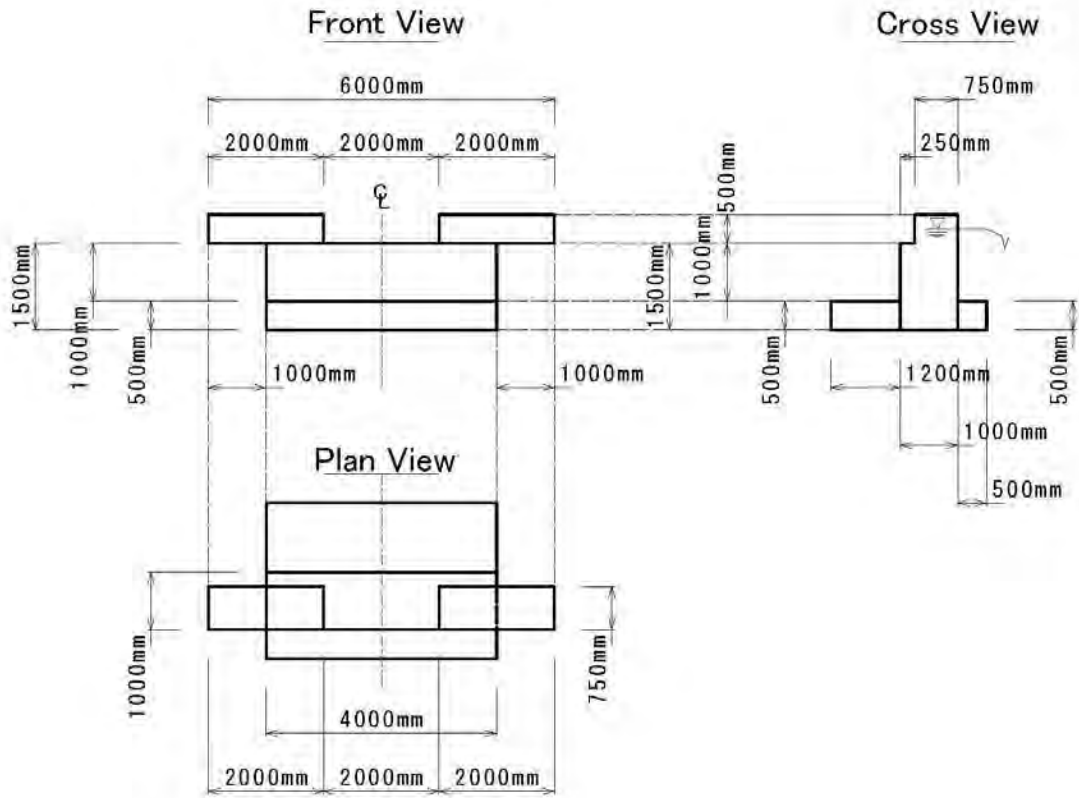


Ref: A manual on Soil and Water Conservation with focus on Watershed management

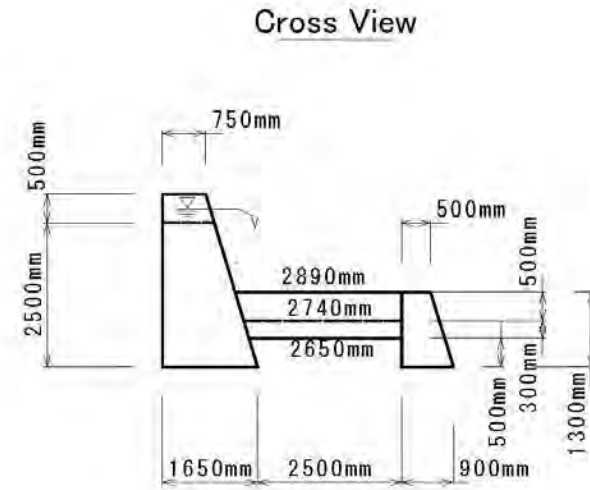
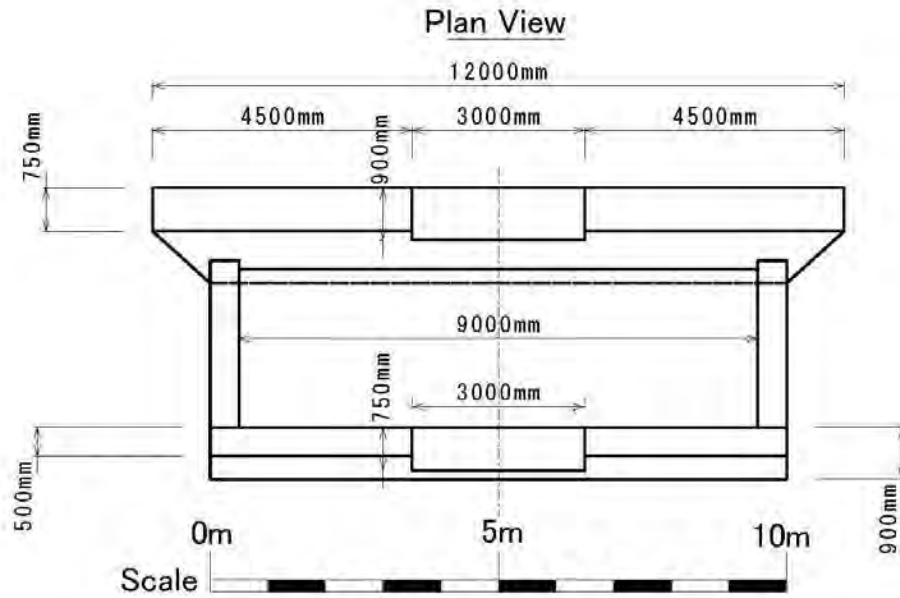
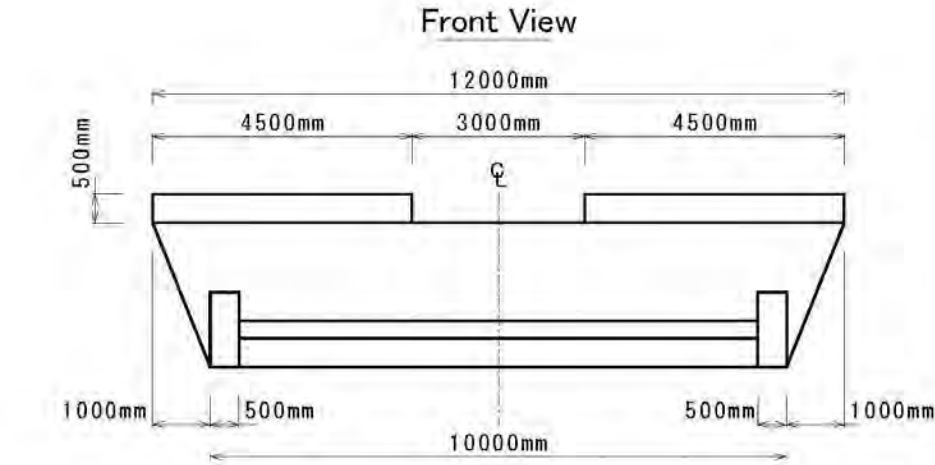


Ref: A manual on Soil and Water Conservation with focus on Watershed management

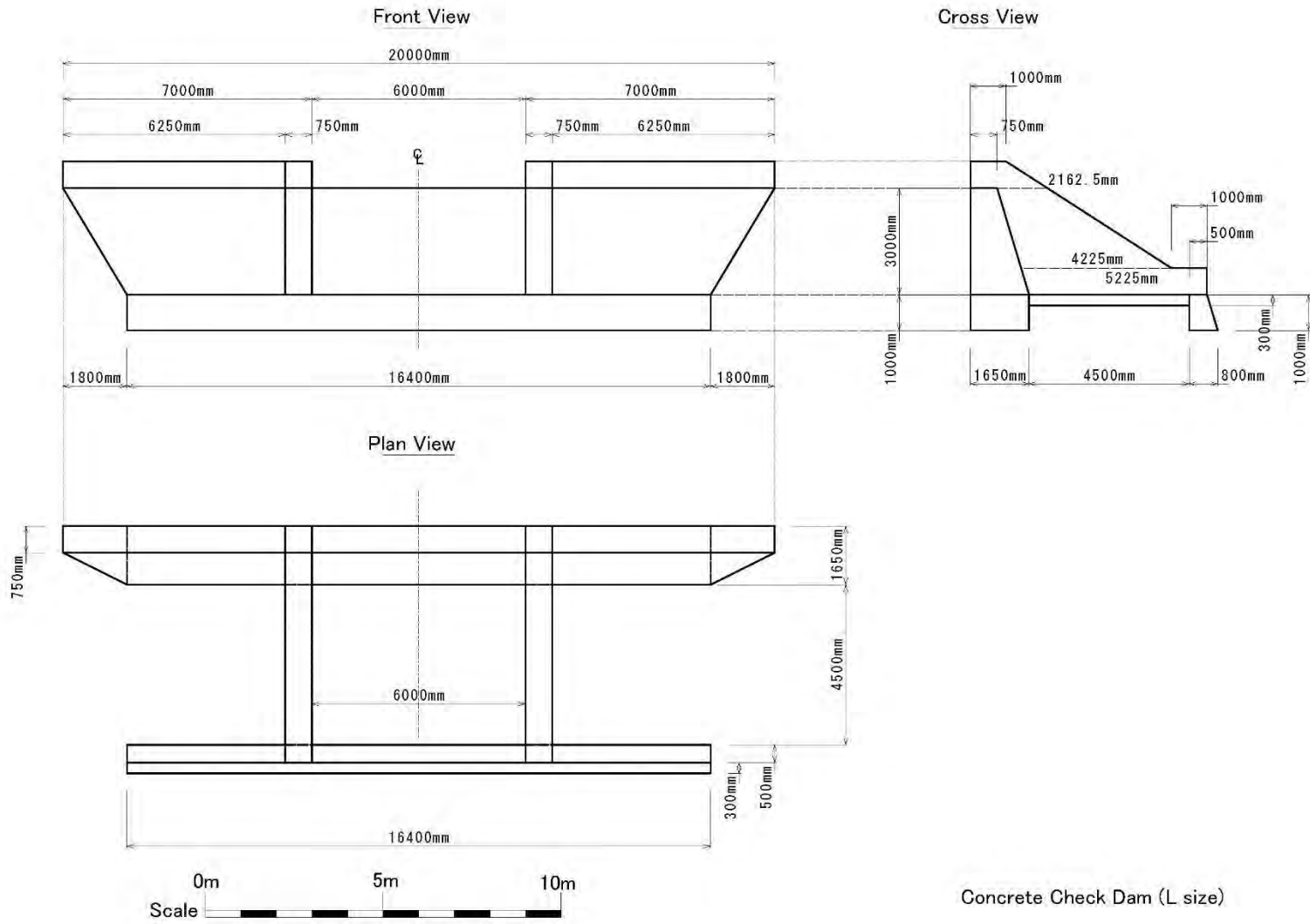




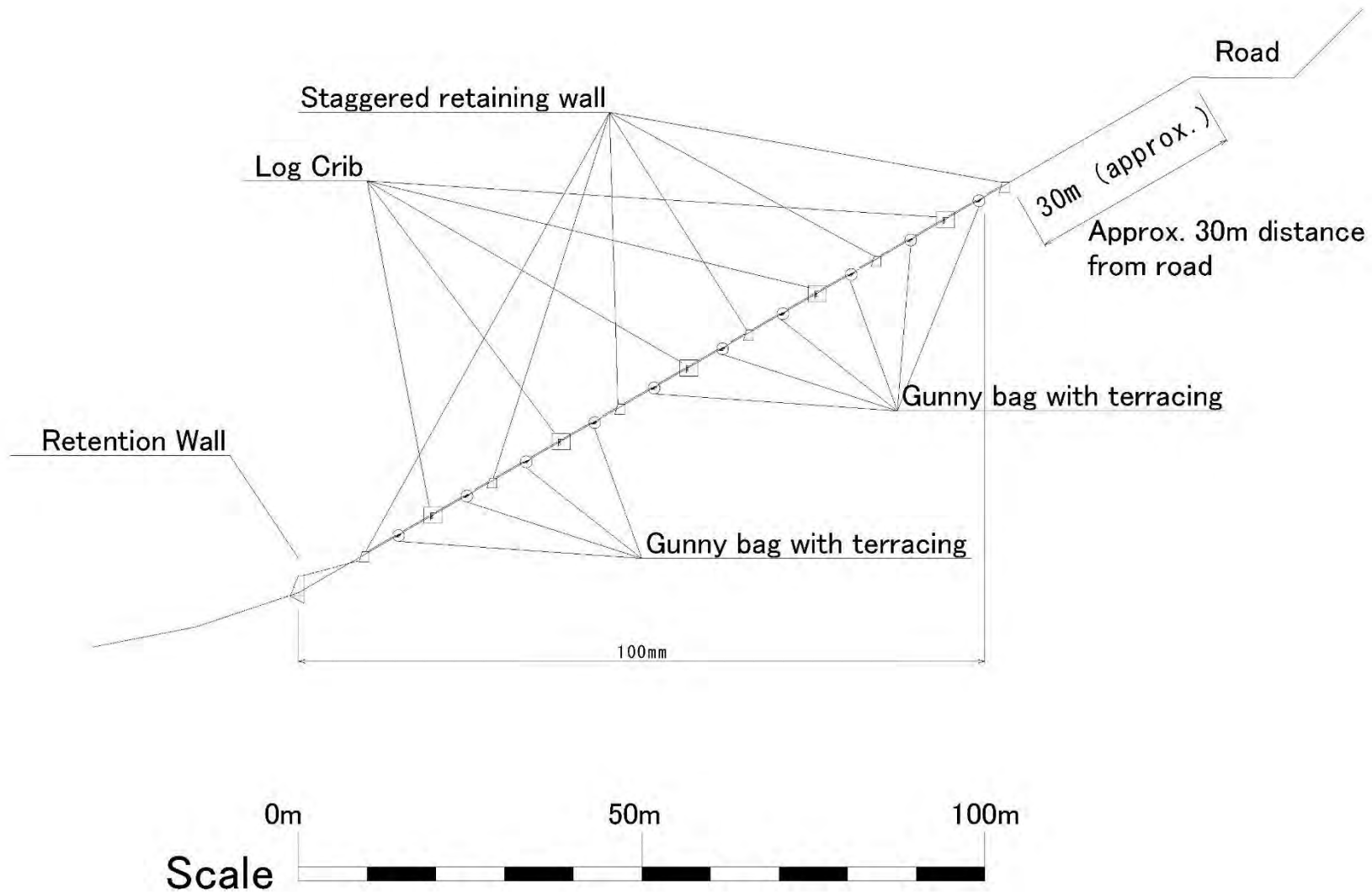
Gabion Check Dam (S size)

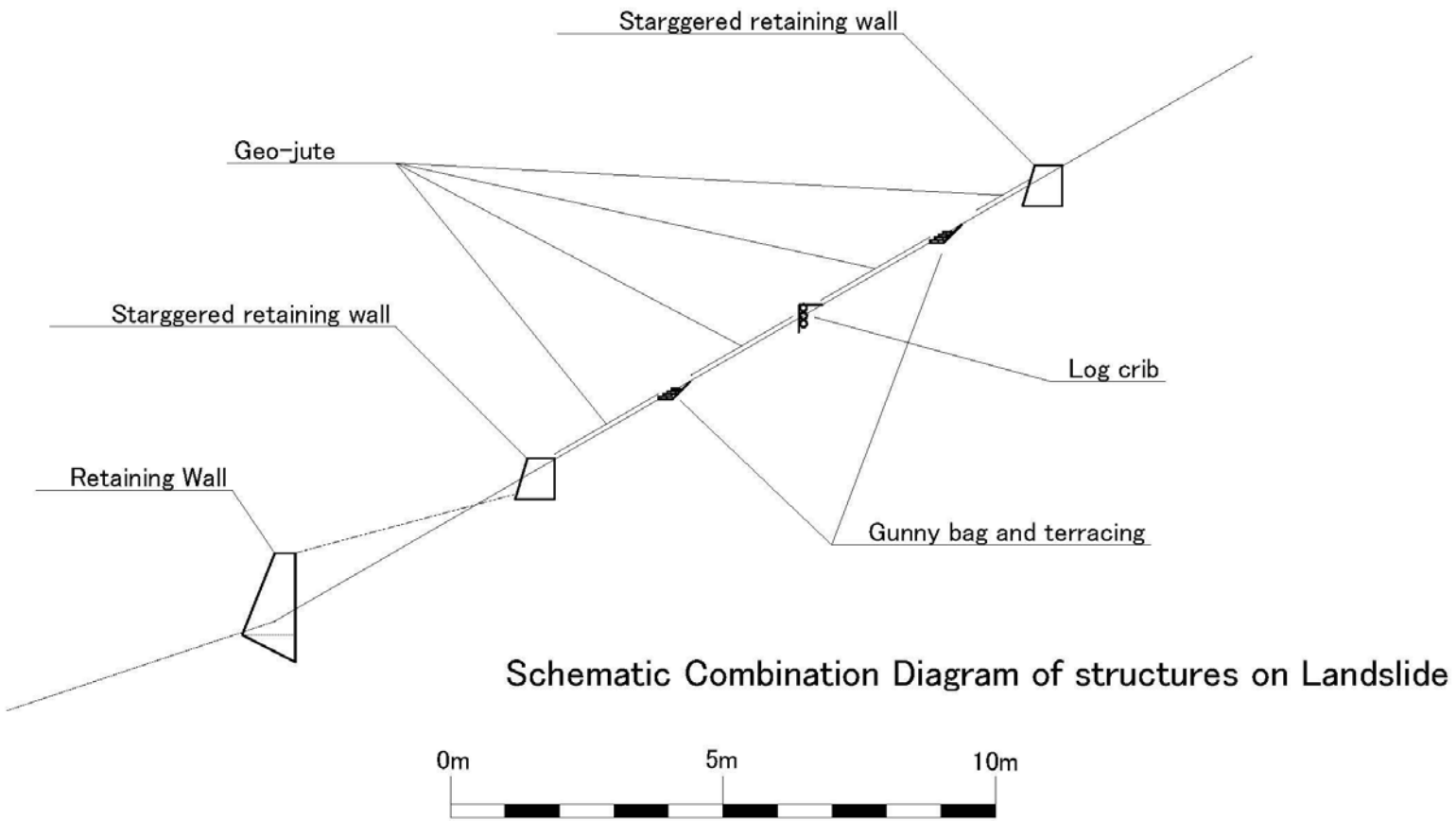


Masonry/ Concrete Check Dam (M size)

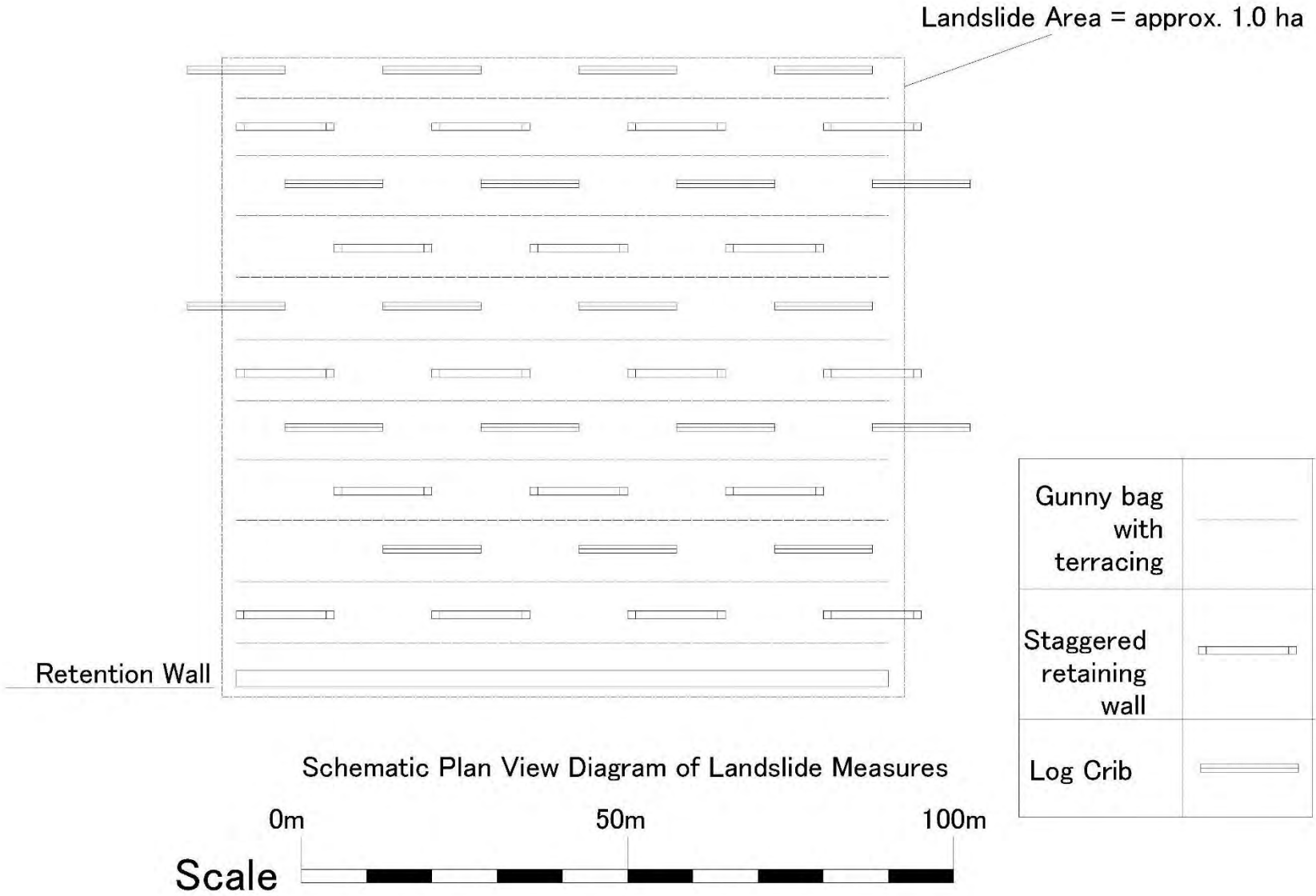


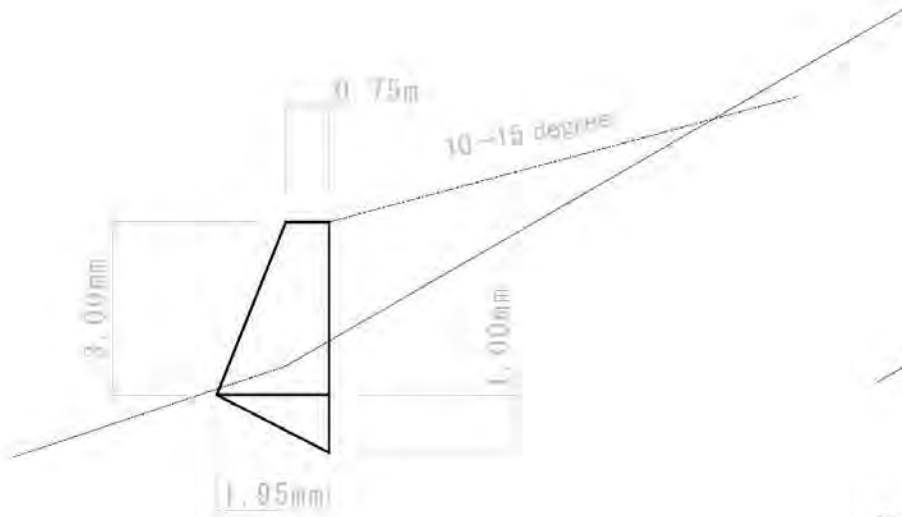
Concrete Check Dam (L size)



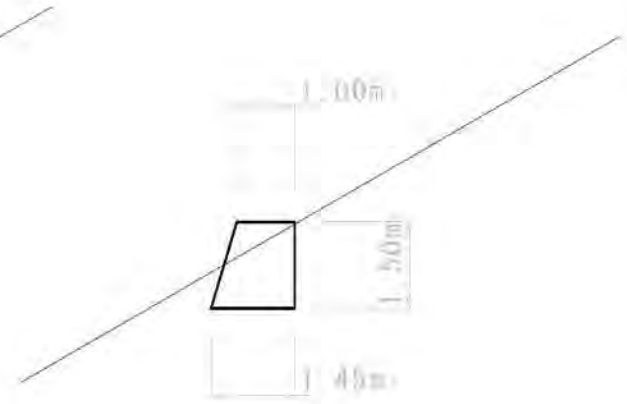


Schematic Combination Diagram of structures on Landslide

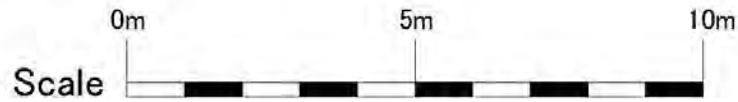




Cross Section of Retaining Wall
(Masonry Wall)



Cross Section of Staggered
Retaining Walls
(Gabion Wall)

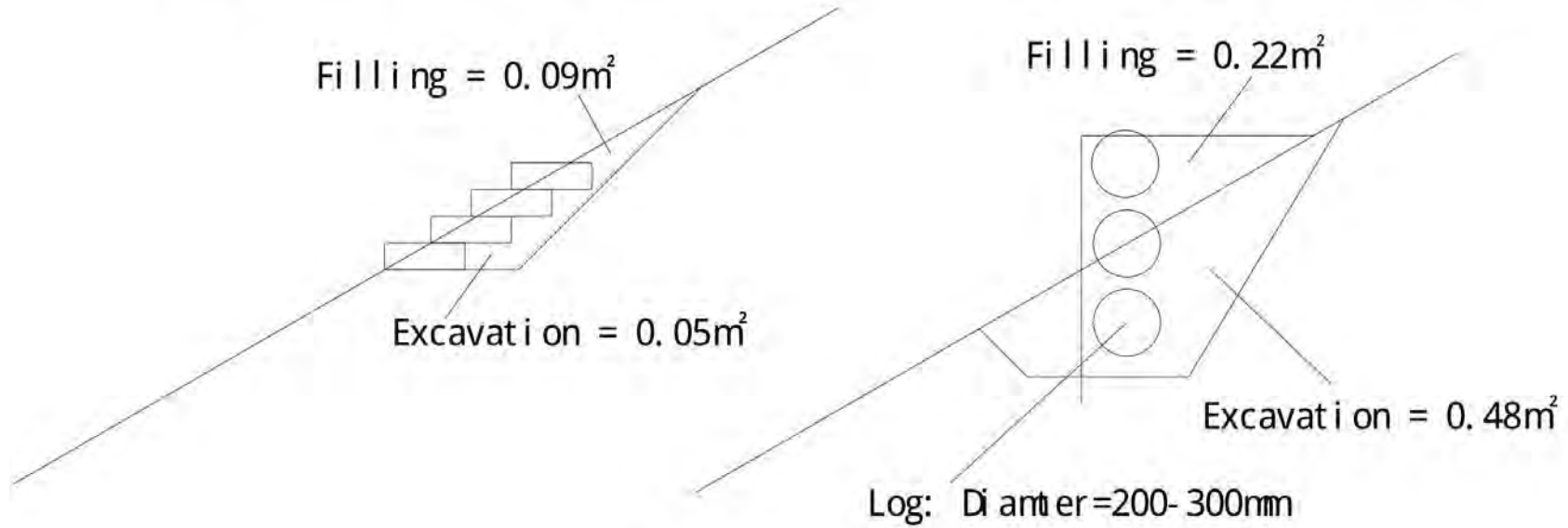


Excavation = 1.87m²
Filling = 8.77m²

Excavation = 1.44m²

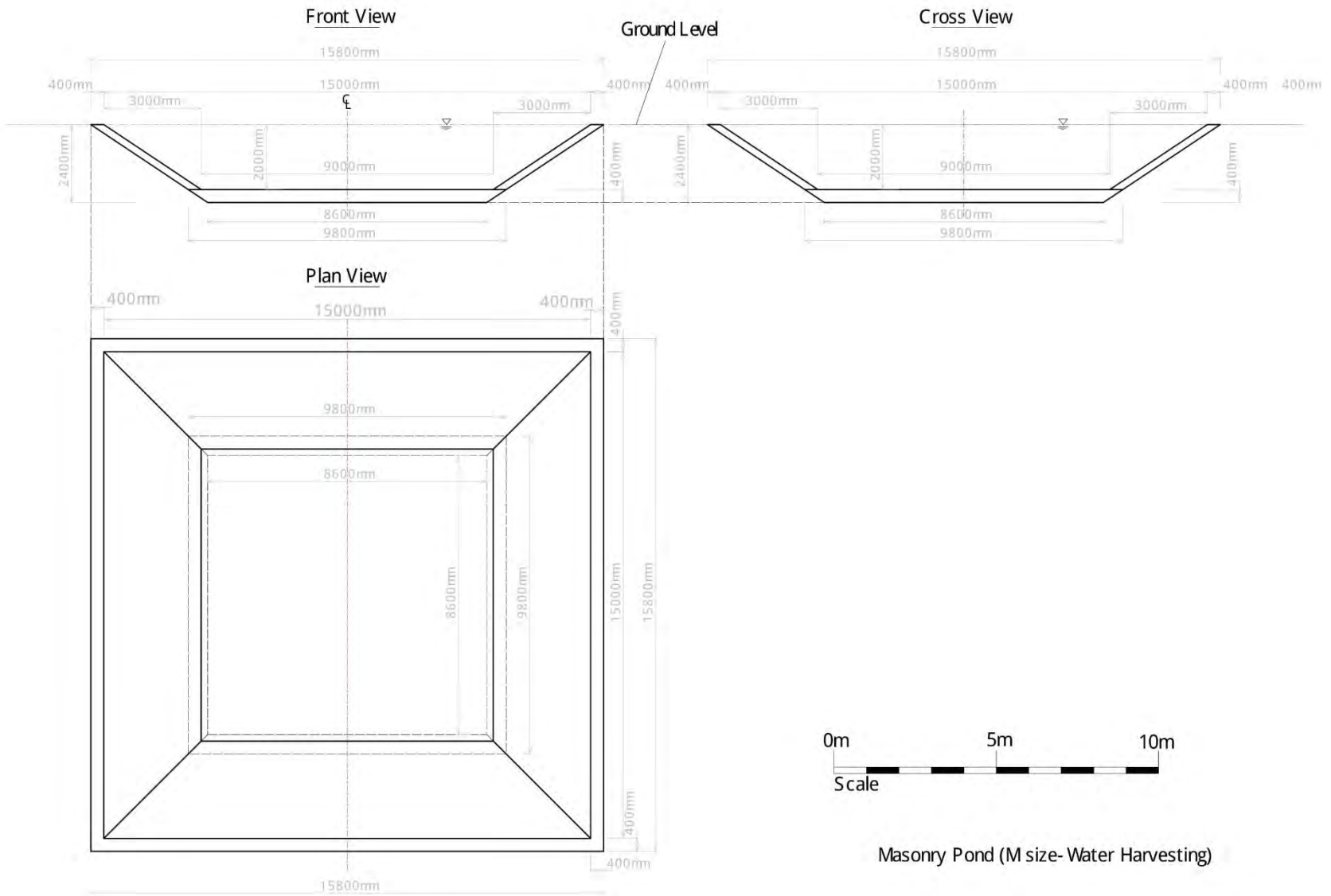
Gunny bags with terracing

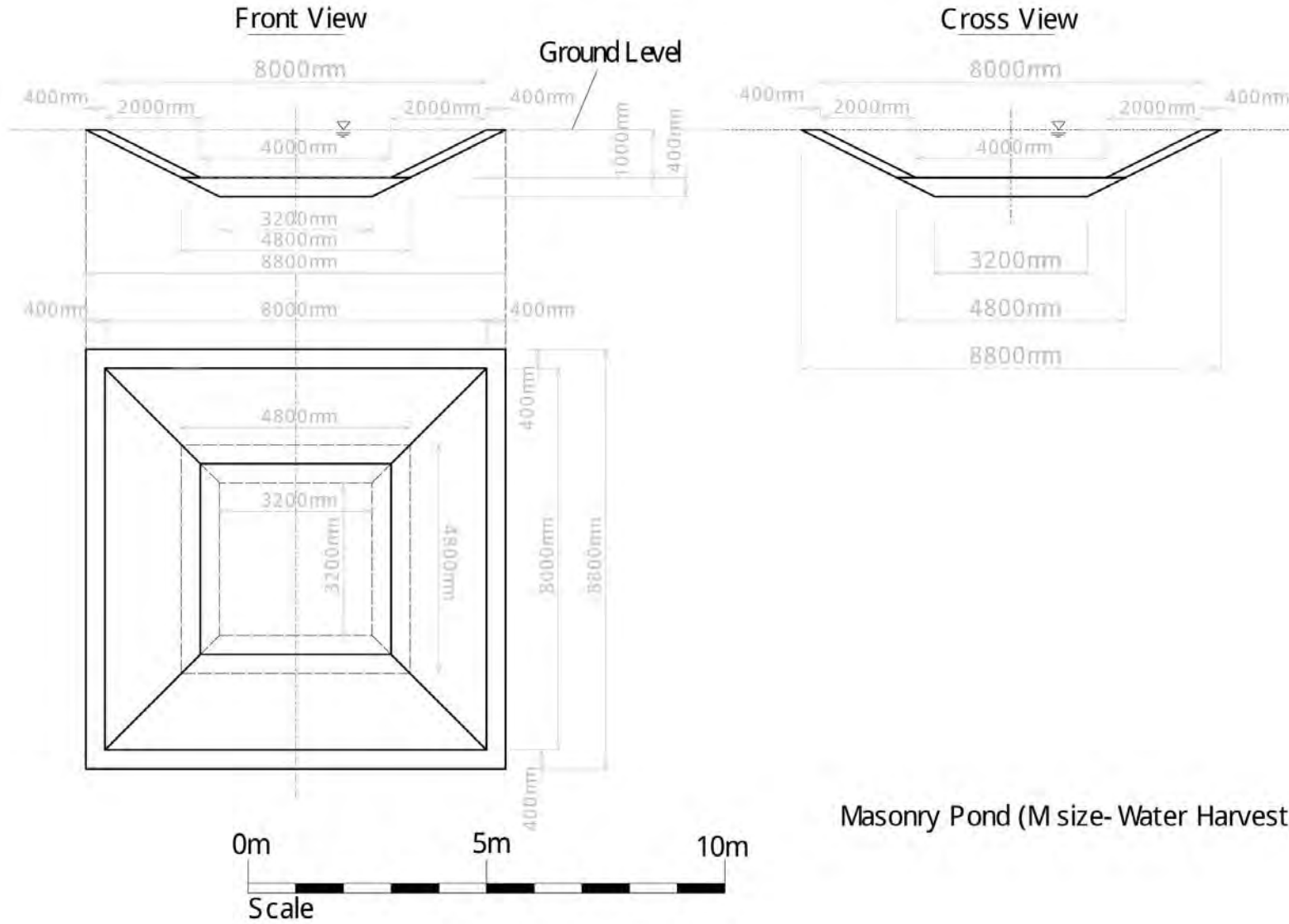
Log crib (wood)



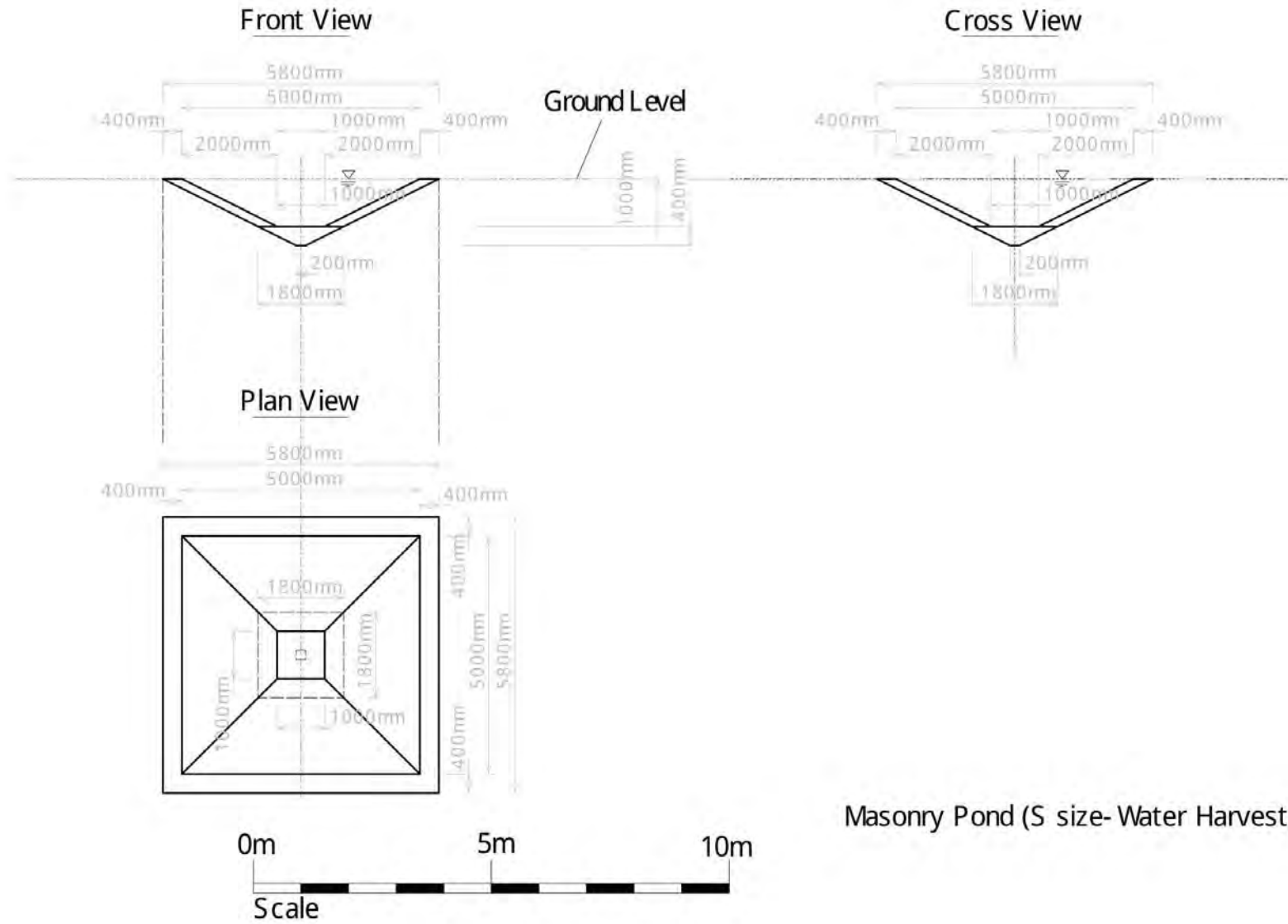
Cross Section of Gunny Bags with Terracing and log crib of Landslide







Masonry Pond (M size- Water Harvesting)



Masonry Pond (S size- Water Harvesting)