

Republic of India
State of Uttarakhand, Department of Horticulture and Food Processing

PREPARATORY SURVEY
ON
UTTARAKHAND INTEGRATED
HORTICULTURE DEVELOPMENT PROJECT
(UKIHDP)

FINAL REPORT
VOLUME-II
ATTACHMENTS

MARCH 2022

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
NIPPON KOEI CO., LTD.

4R
CR (3)
22-013

**The Preparatory Survey
on
Uttarakhand Integrated Horticulture Development Project (UKIHDP)
in
India**

Final Report

List of Volumes

Volume-I Main Report

Project Location Map, Photographs, Summary, Tanle of Contents, List of List of Abbreviations and Local Terms, Measurement Units and Currency

Chapter 1 Introduction

Chapter 2 Natural and Socio-Economic Status of Uttarakhand

Chapter 3 Present Condition of Horticulture Sector in Uttarakhand

Chapter 4 Review of Preliminary Project Report

Chapter 5 Situational Analysis of the Proposed Project Area based on the Preliminary Findings from the Supply Chain Survey

Chapter 6 Outline of the Proposed Project Scope

Chapter 7 Implementation Plan

Chapter 8 Project Cost

Chapter 9 Project Evaluation

Chapter 10 Environmental and Social Considerations

Chapter 11 Recommendations

Volume-II Attachments

Attachments for Chapter 2

Attachments for Chapter 3

Attachments for Chapter 4

Attachments for Chapter 5

Attachments for Chapter 6

Attachments for Chapter 7

Attachments for Chapter 8

Attachments for Chapter 9

Attachments for Chapter 10

Attachments for Chapter 11

The Preparatory Survey on Uttarakhand Integrated Horticulture Development Project (UKIHDP) in India

Final Report Volume-II Attachments

Table of Contents

Chapter 2 Natural and Socio-Economic Status of Uttarakhand

Attachment 2.1.1	Mapping of Irrigated Area	AT2-1
Attachment 2.1.2	Location of Observatory in Uttarakhand	AT2-2
Attachment 2.1.3	Observation of Line Chart	AT2-3
Attachment 2.1.4	Projected Climate Change, Temperature and Precipitation	AT2-5
Attachment 2.1.5	Line Chart of Climate Change	AT2-13
Attachment 2.1.6	Organogram of UKDHFP	AT2-15
Attachment 2.1.7	Training Centre Needs	AT2-18
Attachment 2.2.1	State Wise Counts of People Living Poverty 2020	AT2-21
Attachment 2.3.1	Mapping of Land Utilization	AT2-22
Attachment 2.5.1	Mapping of Road Density	AT2-23

Chapter 3 Present Condition of Horticulture Sector in Uttarakhand

Attachment 3.2.1	List of Blocks Covered by IFAD assisted Projects	AT3-1
Attachment 3.2.2	List of Sub-sector wise details of Schemes Implemented in Uttarakhand ..	AT3-2
Attachment 3.3.1	Key Interventions by Concerned Departments	AT3-5
Attachment 3.4.1	Current Position of Uttarakhand	AT3-8
Attachment 3.4.2	List of Government Nurseries	AT3-12
Attachment 3.4.3	Harvest Month at Each State of India	AT3-14
Attachment 3.5.1	Traders in APMC Mandies in UK	AT3-15
Attachment 3.5.2	Arrival & Price of APMC Markets in UK	AT3-22
Attachment 3.5.3	High-end Market in Uttarakhand	AT3-42
Attachment 3.5.4	Market Survey in Delhi	AT3-48
Attachment 3.5.5	Traders of Horticultural Produce in Delhi	AT3-55
Attachment 3.5.6	Agribusiness Industries in UK	AT3-63
Attachment 3.7.1	Optimal Climatic Requirement of Fruits and Vegetables for Selected Crops	AT3-108
Attachment 3.7.2	Collected Photos of Influences by Climate Change in Temperate Fruits and Vegetables	AT3-110
Attachment 3.7.3	Impact of Different Climatic Parameters on Crops & Agriculture System	AT3-112
Attachment 3.7.4	Collected Photos of Existing Countermeasures for Climate Change	AT3-117
Attachment 3.7.5	Candidate Varieties to be Compared for Promotion	AT3-118

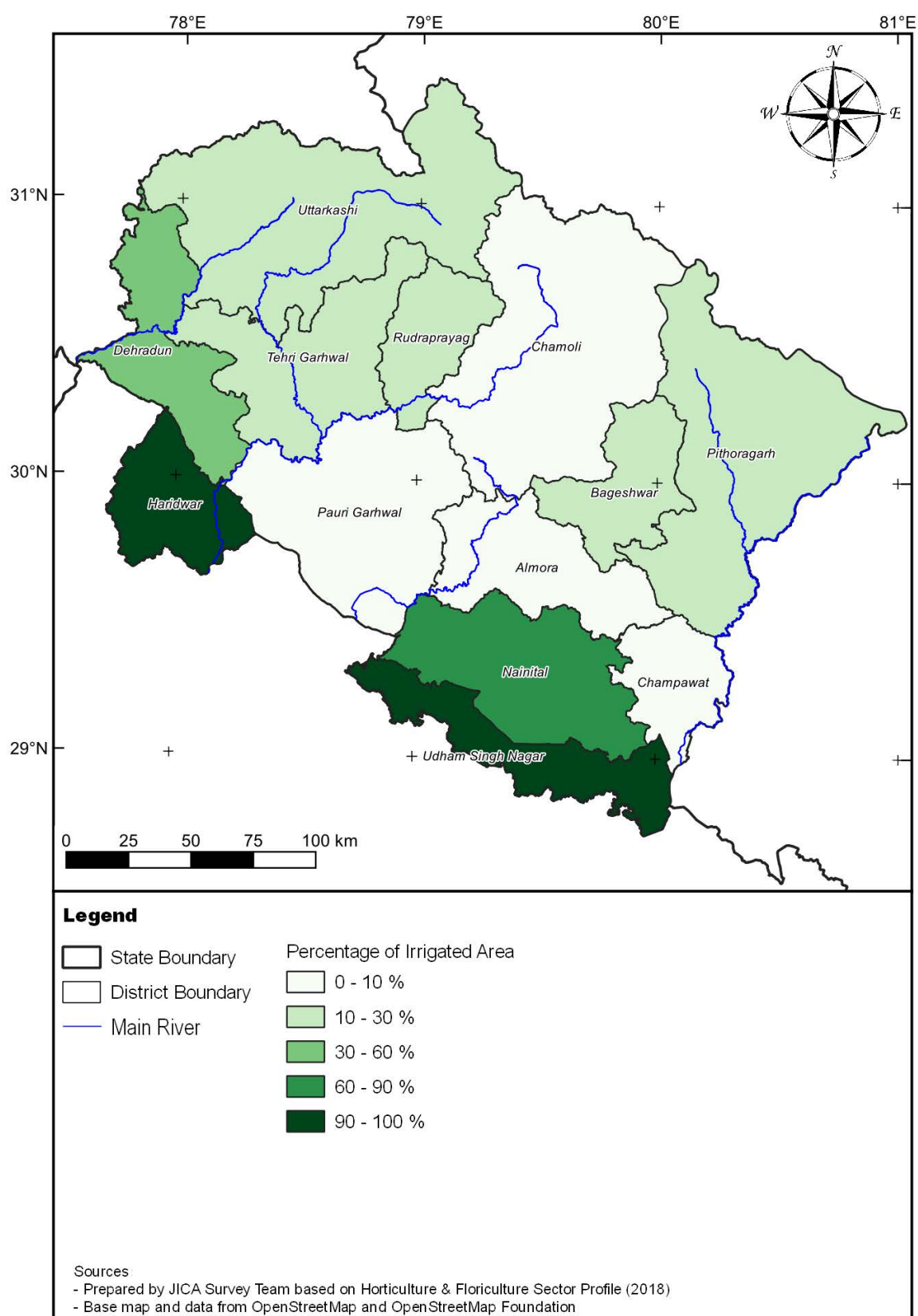
Chapter 4 Review of Preliminary Project Report

Attachment 4.2.1	Mapping of Identified Clusters and Crops	AT4-1
Attachment 4.2.2	Proposed Plan for Training Infrastructures	AT4-2

Chapter 5	Situational Analysis of the Proposed Project Area based on the Preliminary Findings from the Supply Chain Survey	
Attachment 5.1.1	Analysis Result for Crop Selection	AT5-1
Attachment 5.1.2	List of Clusters Surveyed	AT5-2
Attachment 5.1.3	Questionnaires for Supply Chain Survey	AT5-4
Attachment 5.2.1	Report on Supply Chain Survey	AT5-36
Attachment 5.2.2	Gender and Nutrition Situational Analysis	AT5-103
Attachment 5.2.3	Findings from the Nutrition Survey (Schools and Anganwadis).....	AT5-118
Chapter 6	Outline of the Proposed Project Scope	
Attachment 6.7.1	District wise / Block wise clusters in Fruits, Vegetables & Spices under MIDH...	AT6-1
Attachment 6.7.2	Single Window Clearance System.....	AT6-2
Attachment 6.7.3	Results of Questionnaire to Agribusiness Company in India	AT6-4
Chapter 7	Implementation Plan	
Attachment 7.5.1	Procurement Plan for Each Activity	AT7-1
Attachment 7.6.1	Project Implementation Schedule.....	AT7-4
Attachment 7.7.1	O&M of Project Facilities	AT7-6
Chapter 8	Project Cost	
Attachment 8.2.1	Project Cost Estimate	AT8-1
Chapter 9	Project Evaluation	
Attachment 9.3.1	Economic Evaluation	AT9-1
Attachment 9.6.1	Farm Economic Analysis per Household	AT9-12
Attachment 9.9.1	Risk Management Framework	AT9-13
Chapter 10	Environmental and Social Considerations	
Attachment 10.2.1	Annual Average data on Water Quality, Uttarakhand (2019)	AT10-1
Attachment 10.3.1	List of Project requiring prior Environment Clearance or Prior Environment Permission	AT10-5
Attachment 10.3.2	Stages and Procedures for EC as per the draft EIA Notification 2020	AT10-13
Attachment 10.4.1	Annual Average Data on Water Quality, Uttarakhand (2019)	AT10-17
Attachment 10.5.1	Safeguard Flow.....	AT10-20
Attachment 10.6.1	Draft Environmental and Social Assessment Framework	AT10-21
Attachment 10.6.1-1	Environmental and Social Management System Checklist.....	AT10-61
Attachment 10.6.1-2	List of banned pesticides India.....	AT10-65
Attachment 10.6.1-3	Indicative Contents of EA&SA report.....	AT10-66
Attachment 10.6.2	Environmental Monitoring Forms	AT10-67
Attachment 10.7.1	Environmental Checklist	AT10-75
Chapter 11	Recommendations	
Attachment 11.8.1	Example of Japanese Brandings	AT11-1
Attachment 11.10.1	Gender Strategy and Action Plan	AT11-3

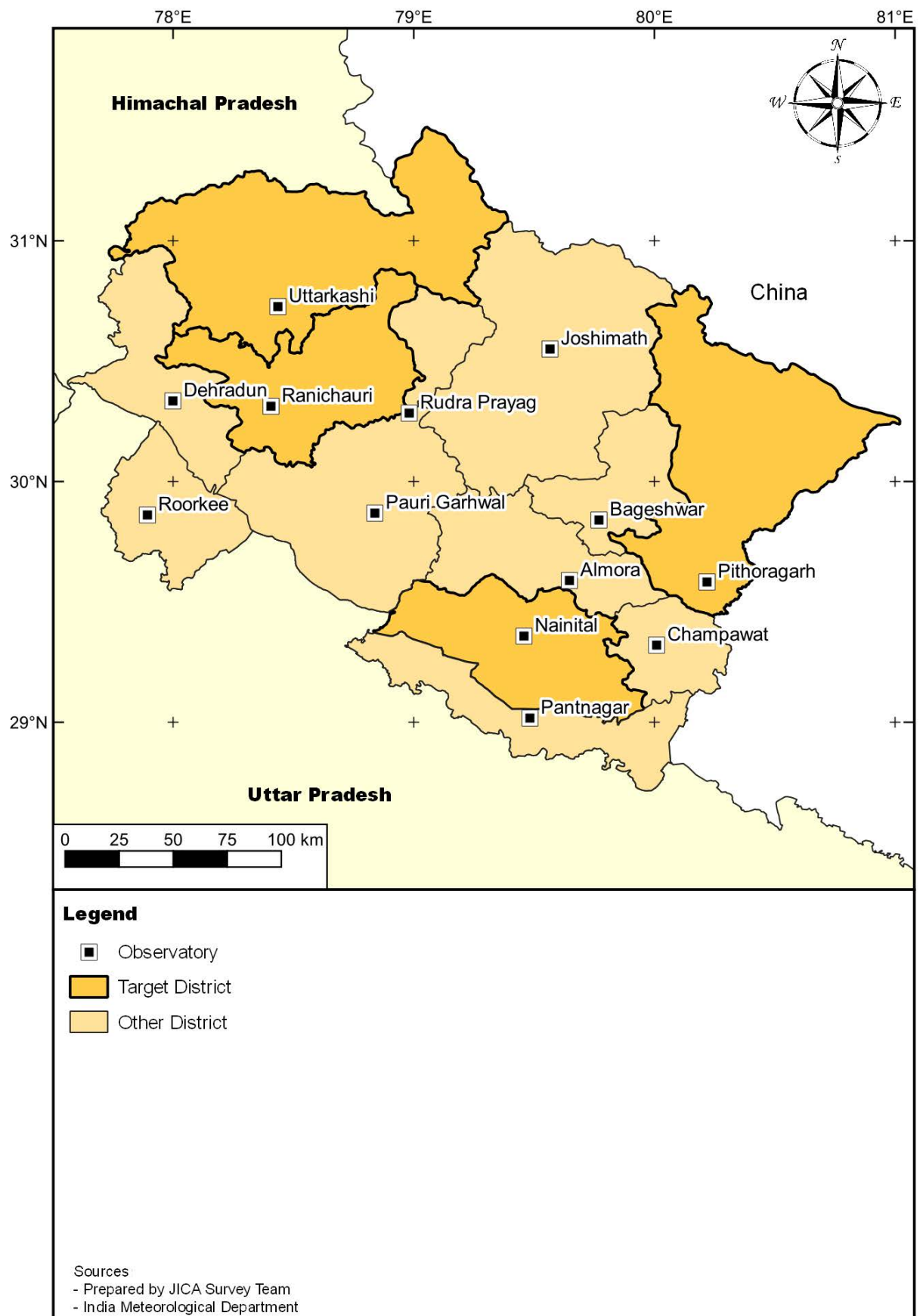
Attachment for Chapter 2

Attachment 2.1.1 Mapping of Irrigated Area



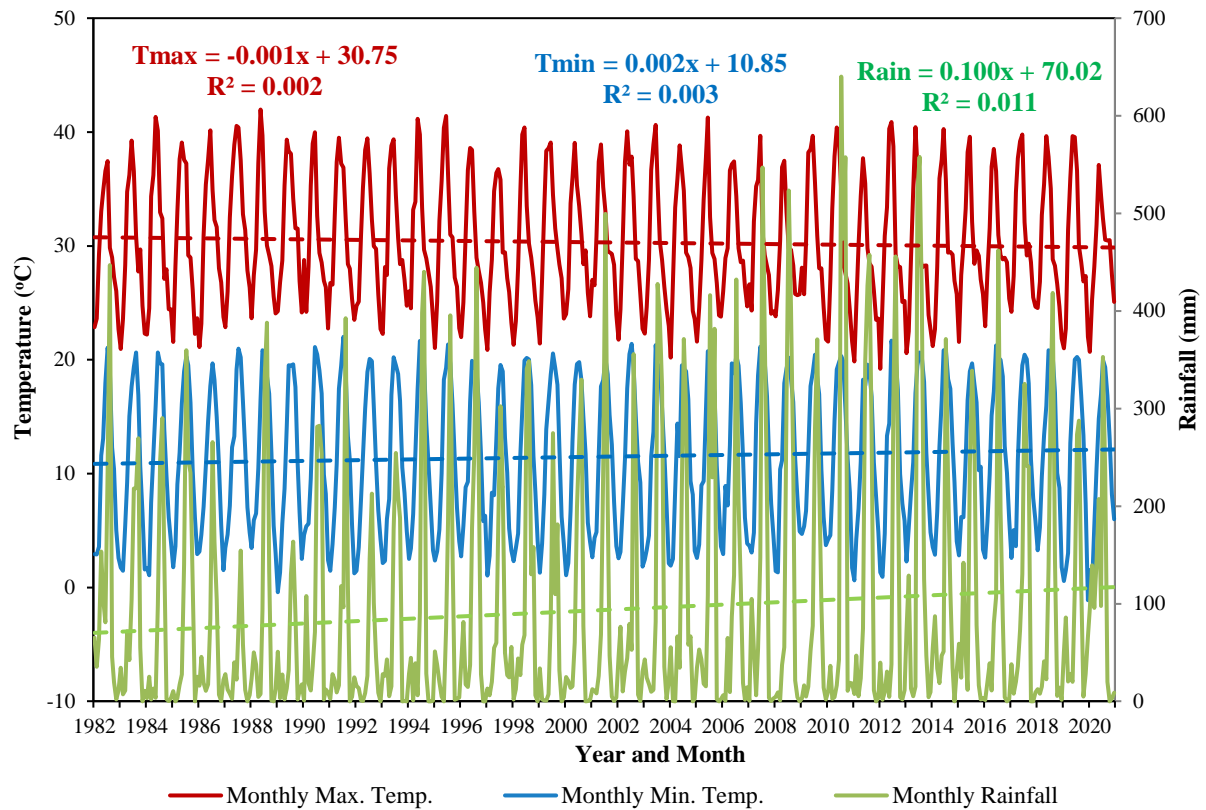
Attachment 2.1.2

Location of Observatory in Uttarakhand



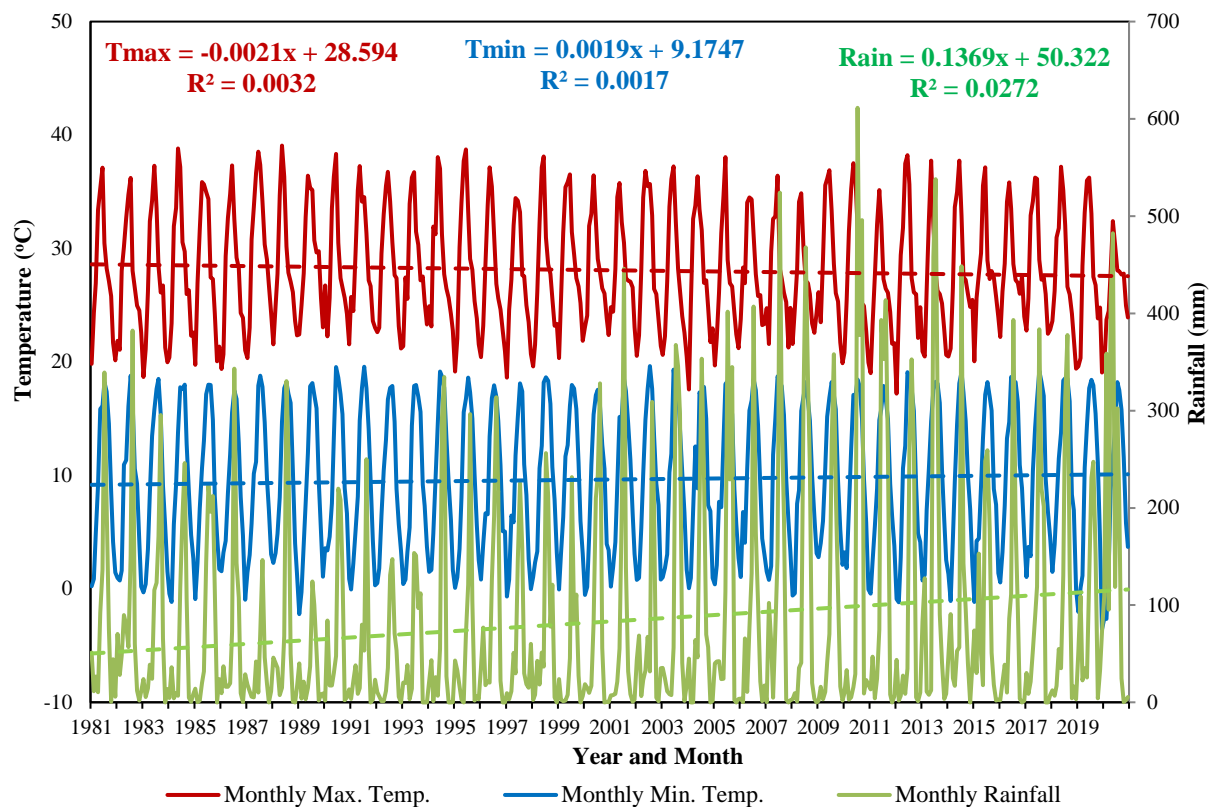
Source: India Meteorological Department

Attachment 2.1.3 Observation of Line Chart



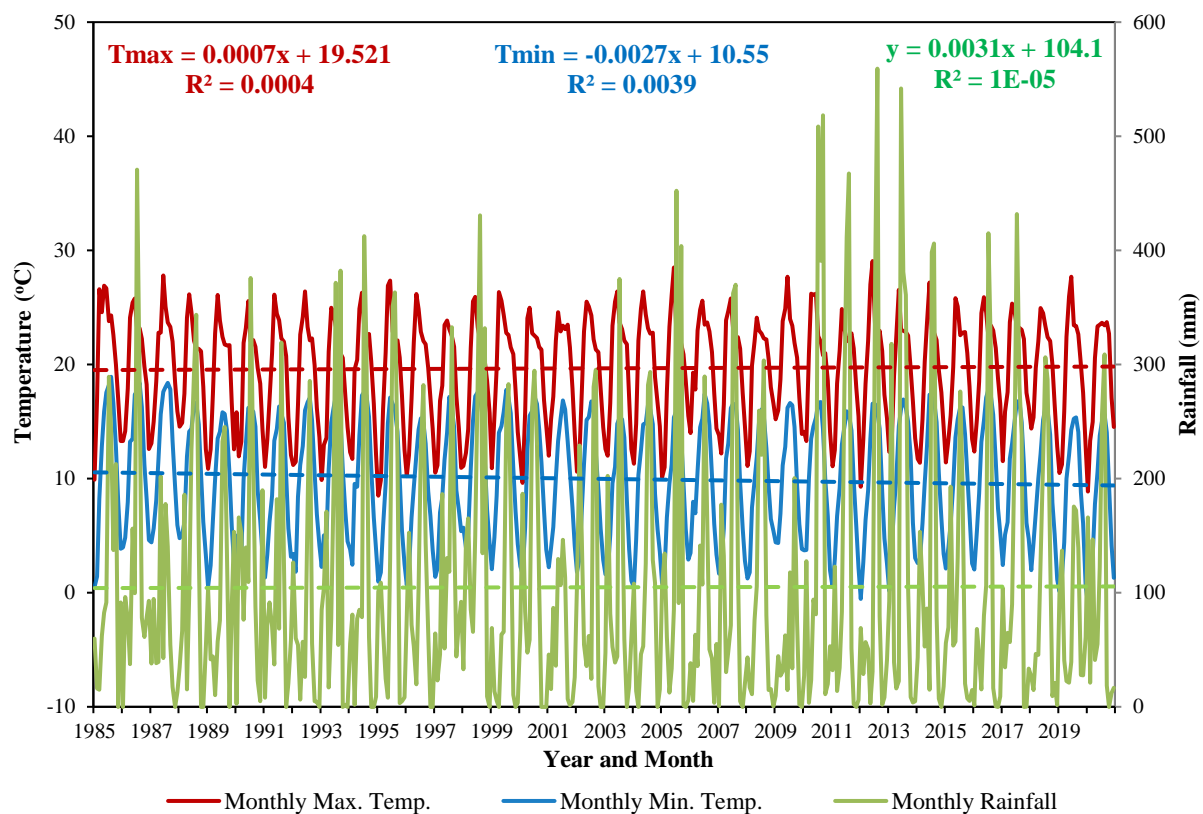
Source: India Meteorological Department

Figure 1 Long-term Weather Data at Nainital Observatory



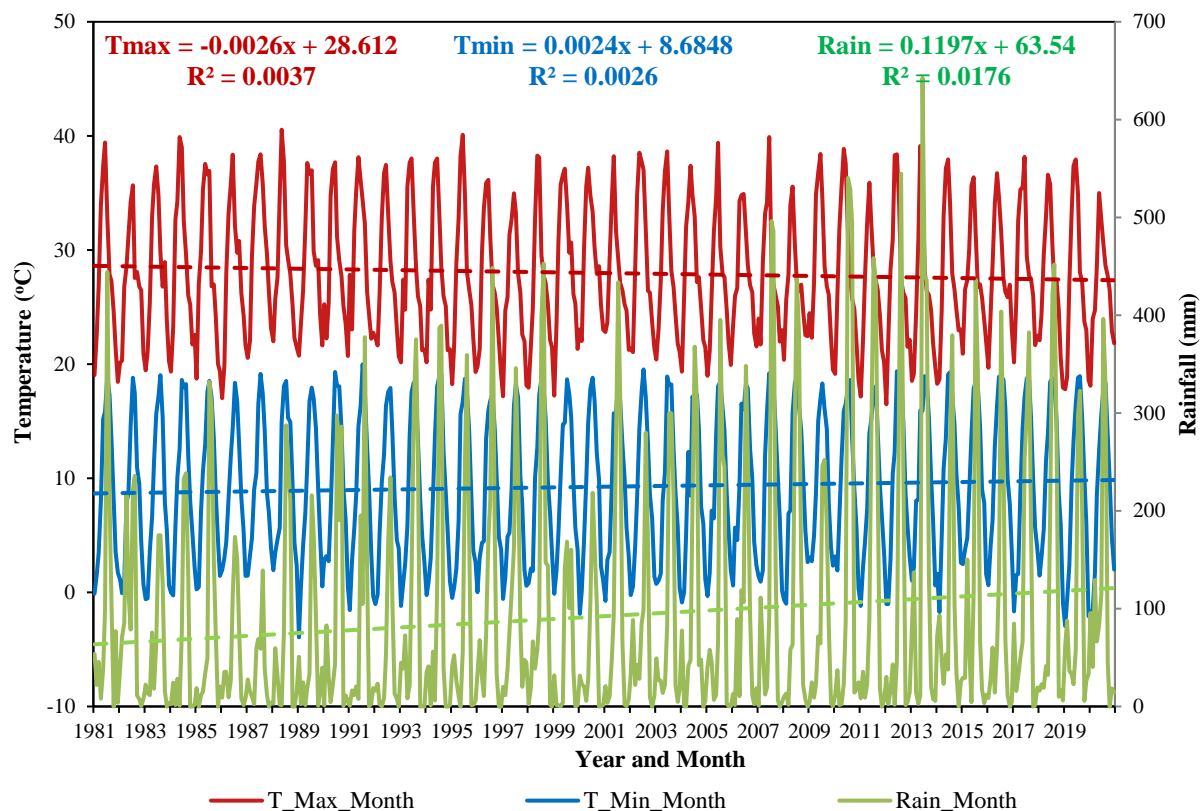
Source: India Meteorological Department

Figure 2 Long-term Weather Data at Pithoragarh Observatory



Source: India Meteorological Department

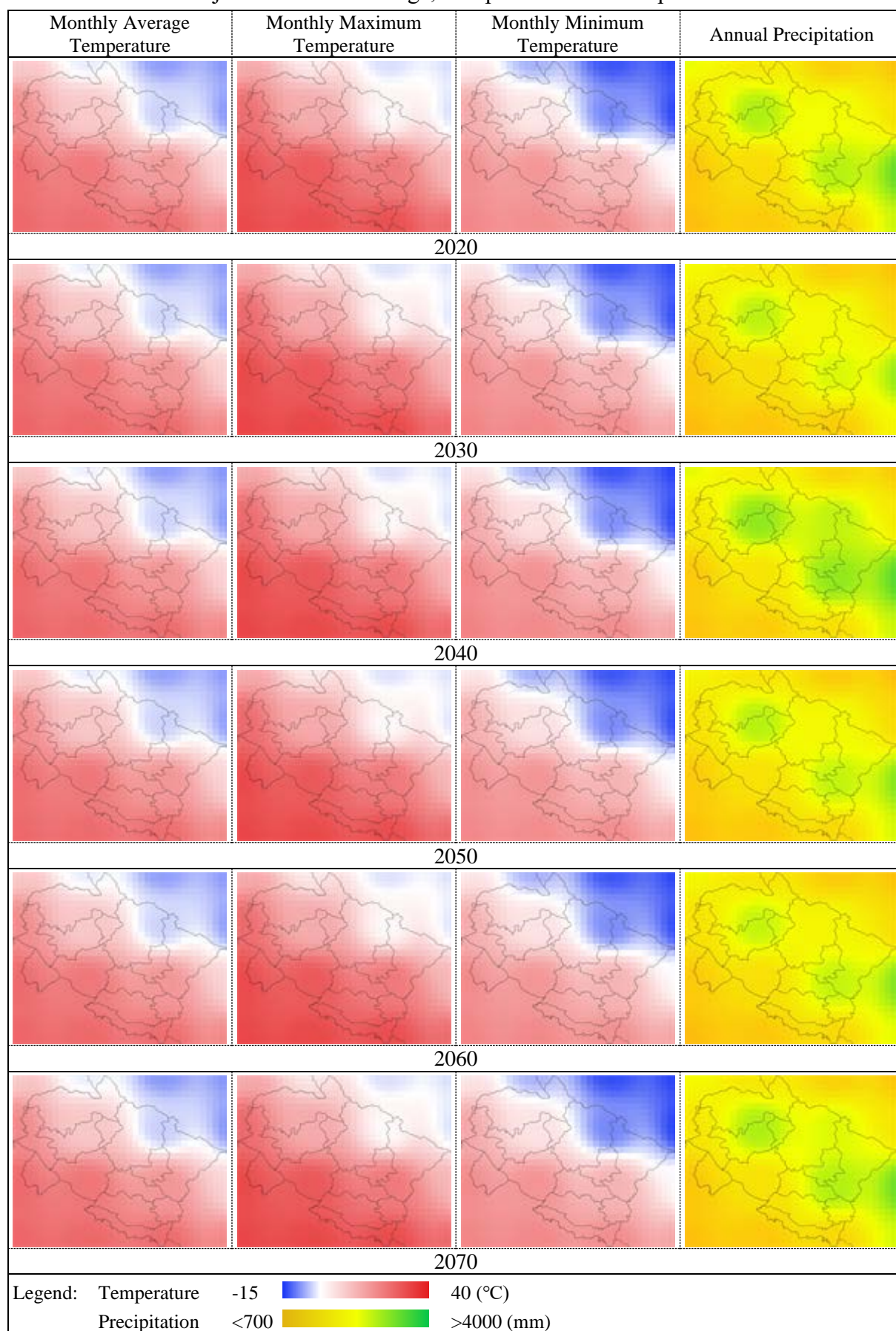
Figure 3 Long-term Weather Data at Ranichauri Observatory



Source: India Meteorological Department

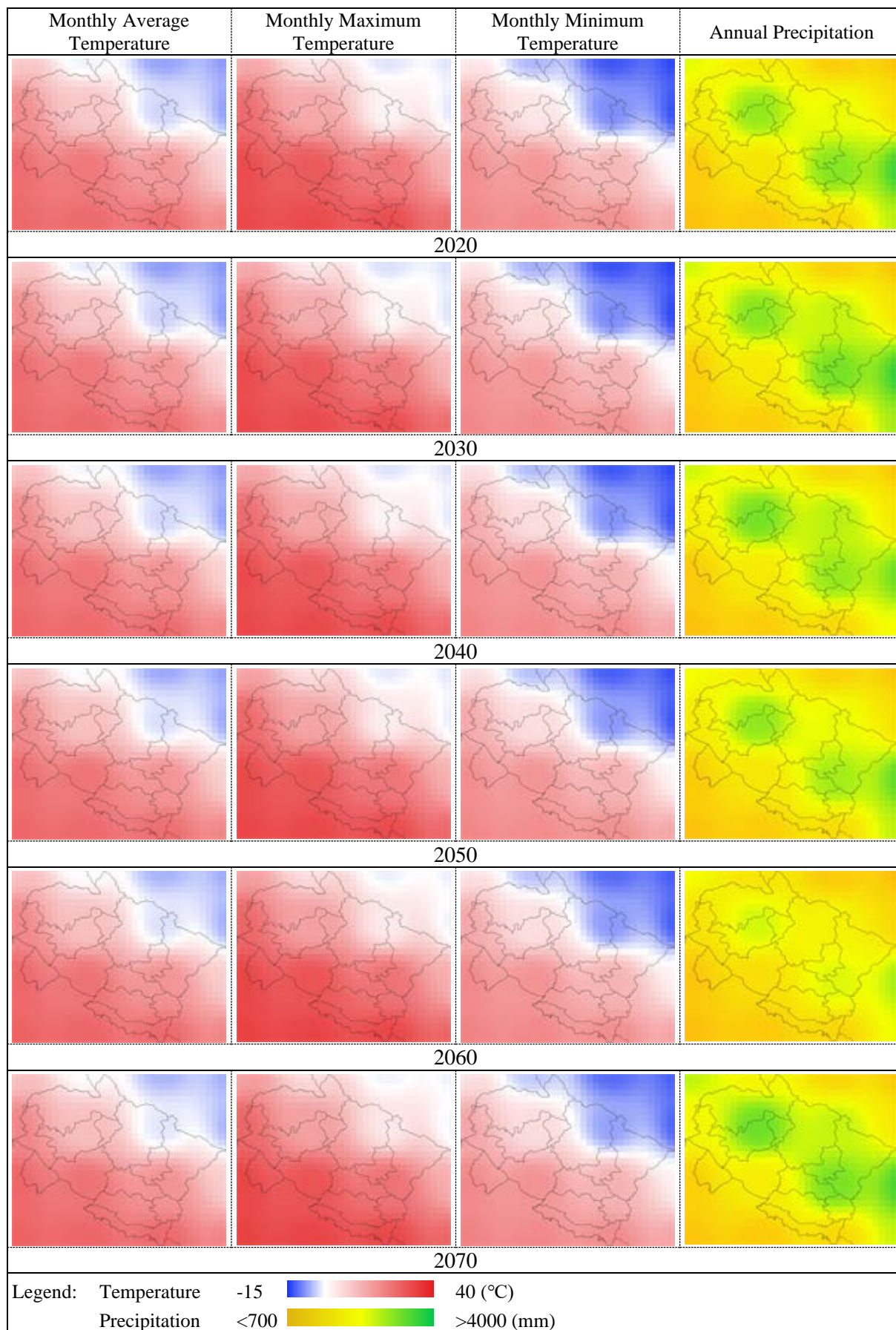
Figure 4 Long-term Weather Data at Uttarkashi Observatory

Attachment 2.1.4 Projected Climate Change, Temperature and Precipitation



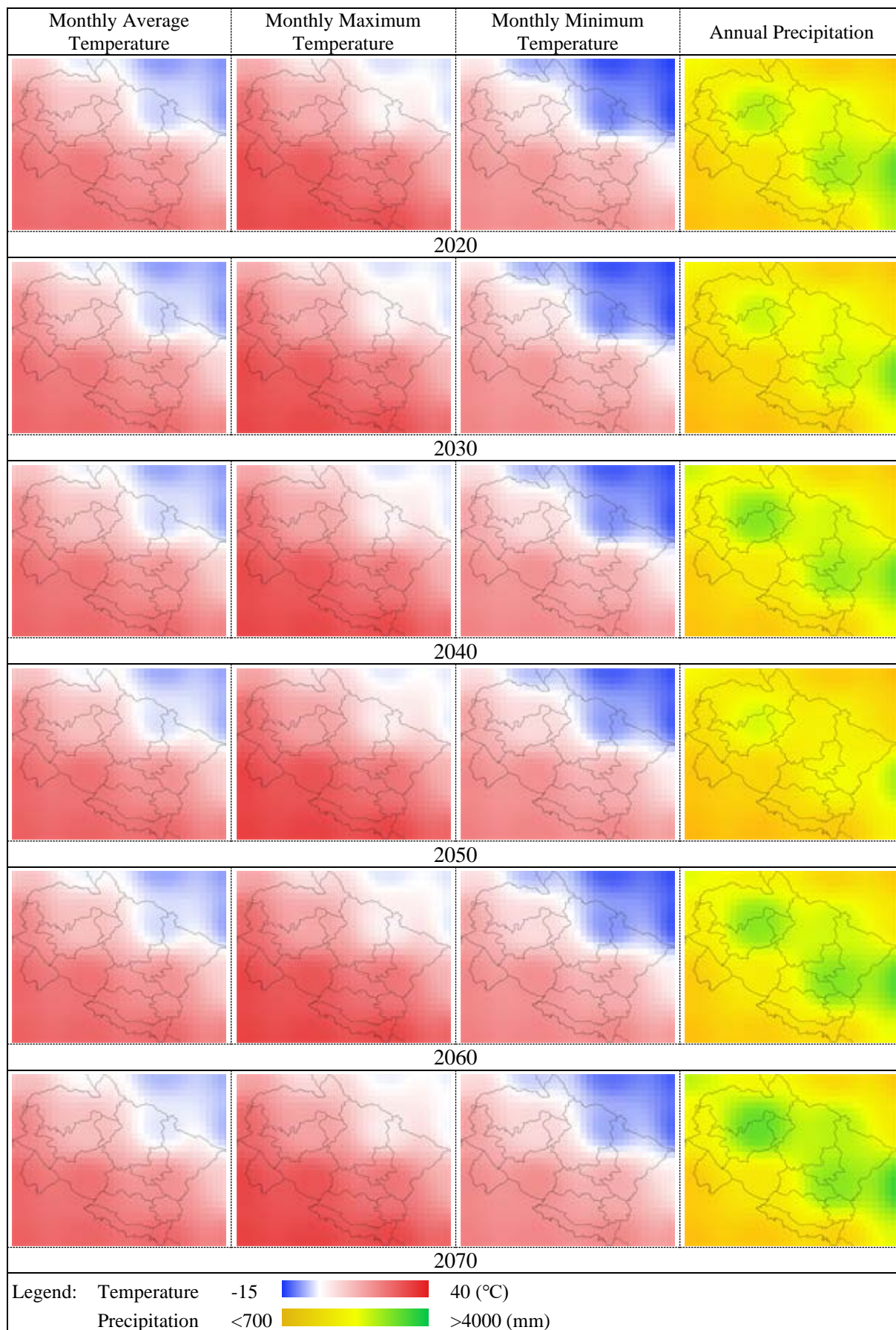
Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

Figure 1 Projected Climate Change in 50 years under RCP2.6



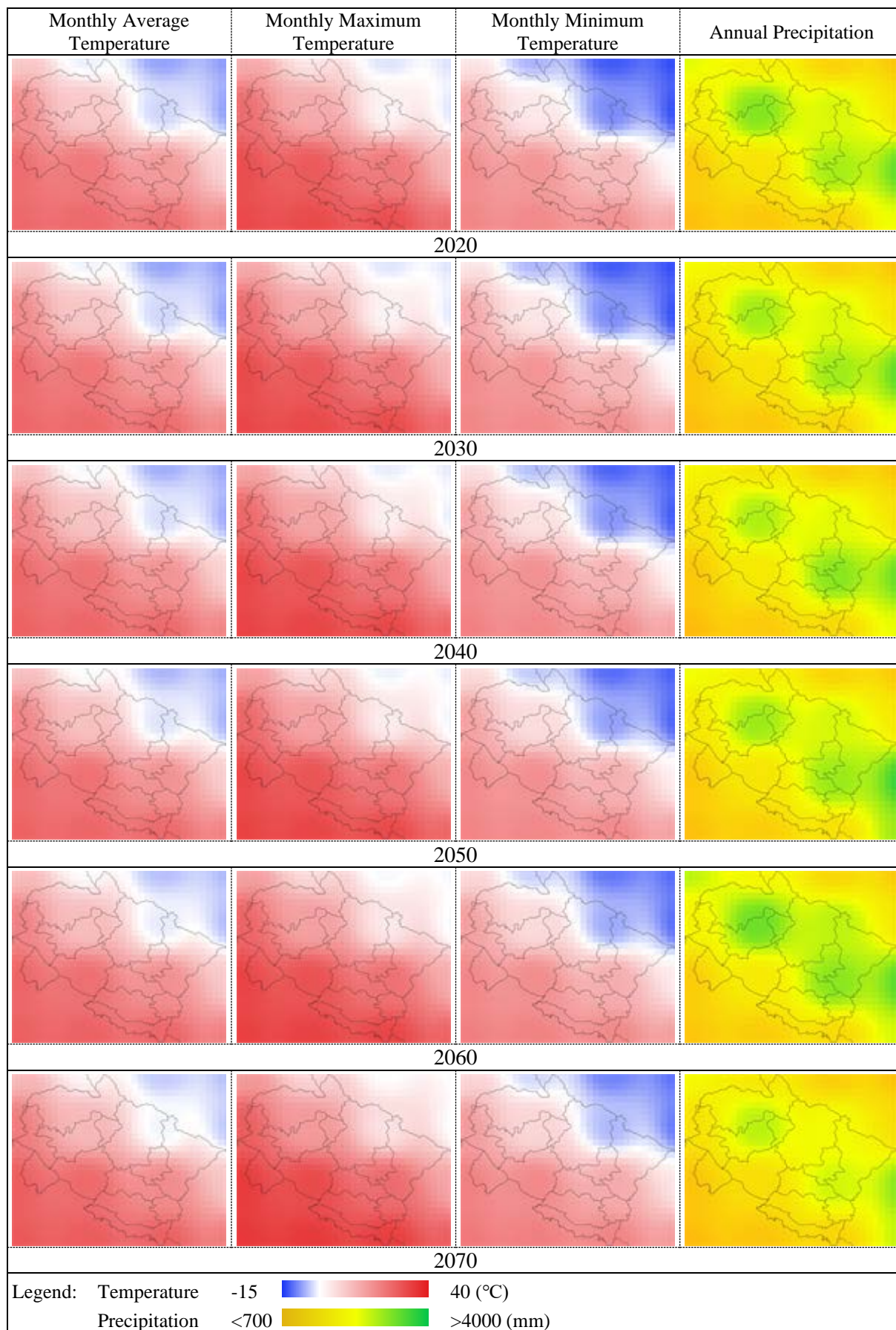
Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

Figure 2 Projected Climate Change in 50 years under RCP4.5



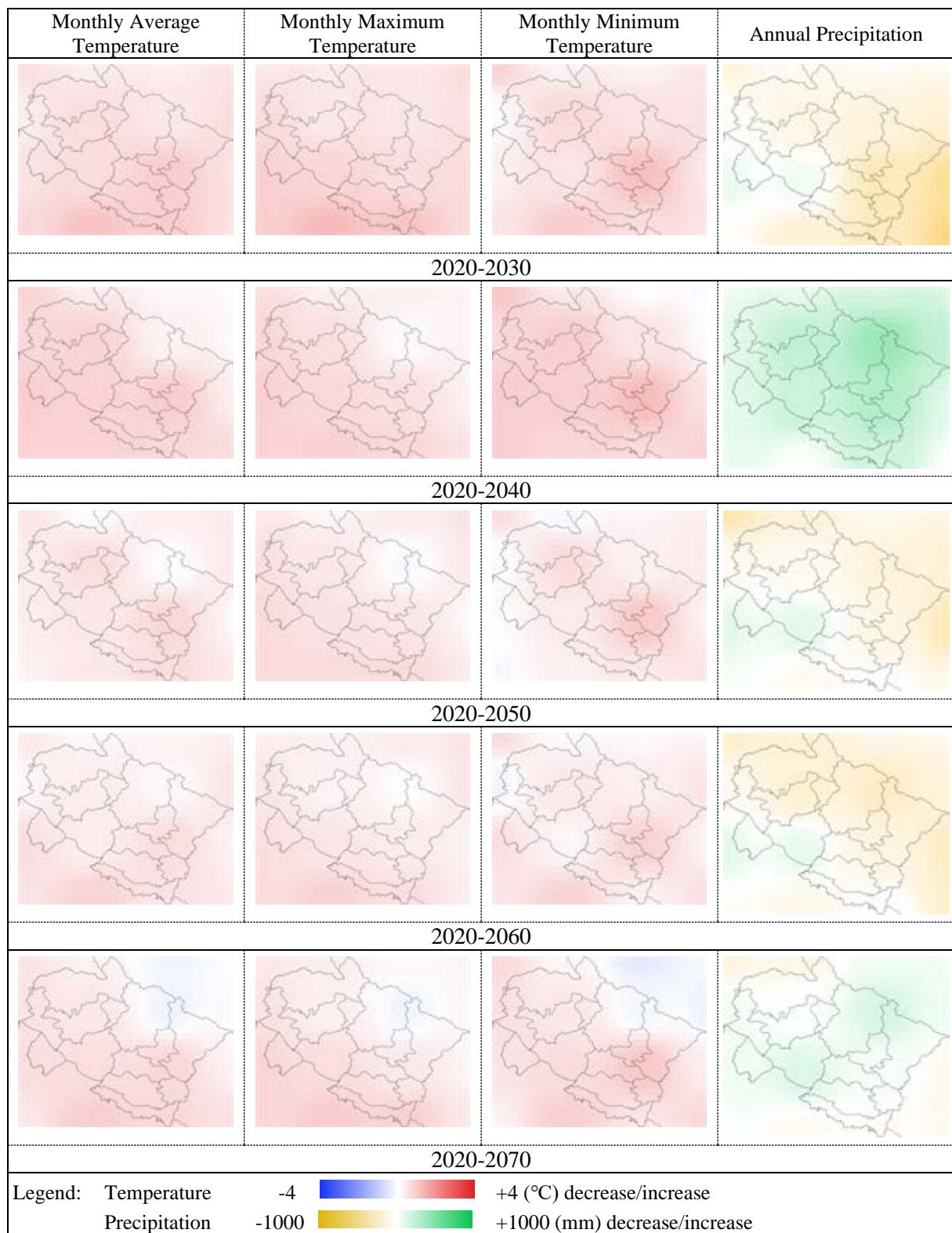
Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

Figure 3 Projected Climate Change in 50 years under RCP6.0



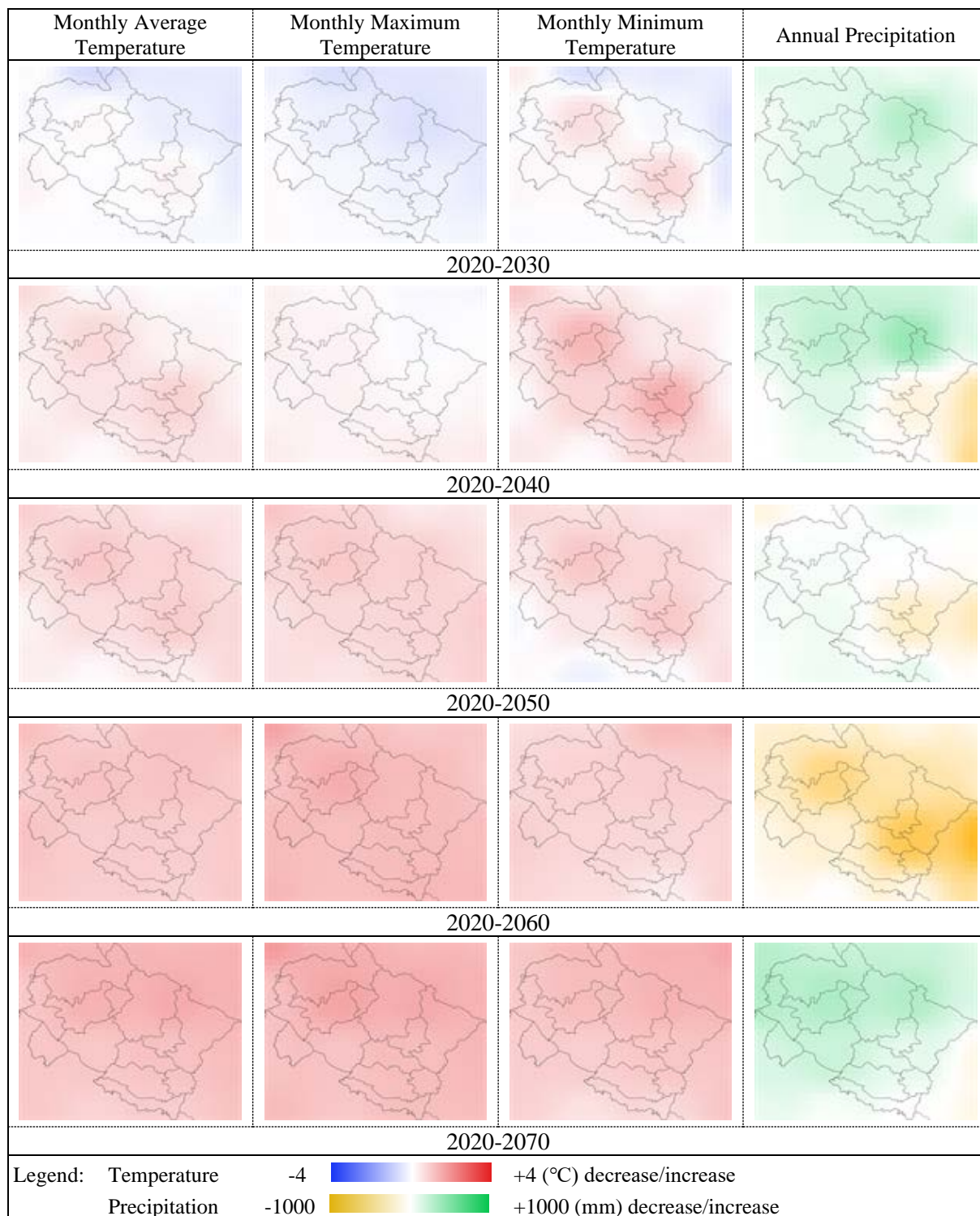
Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

Figure 4 Projected Climate Change in 50 years under RCP8.5



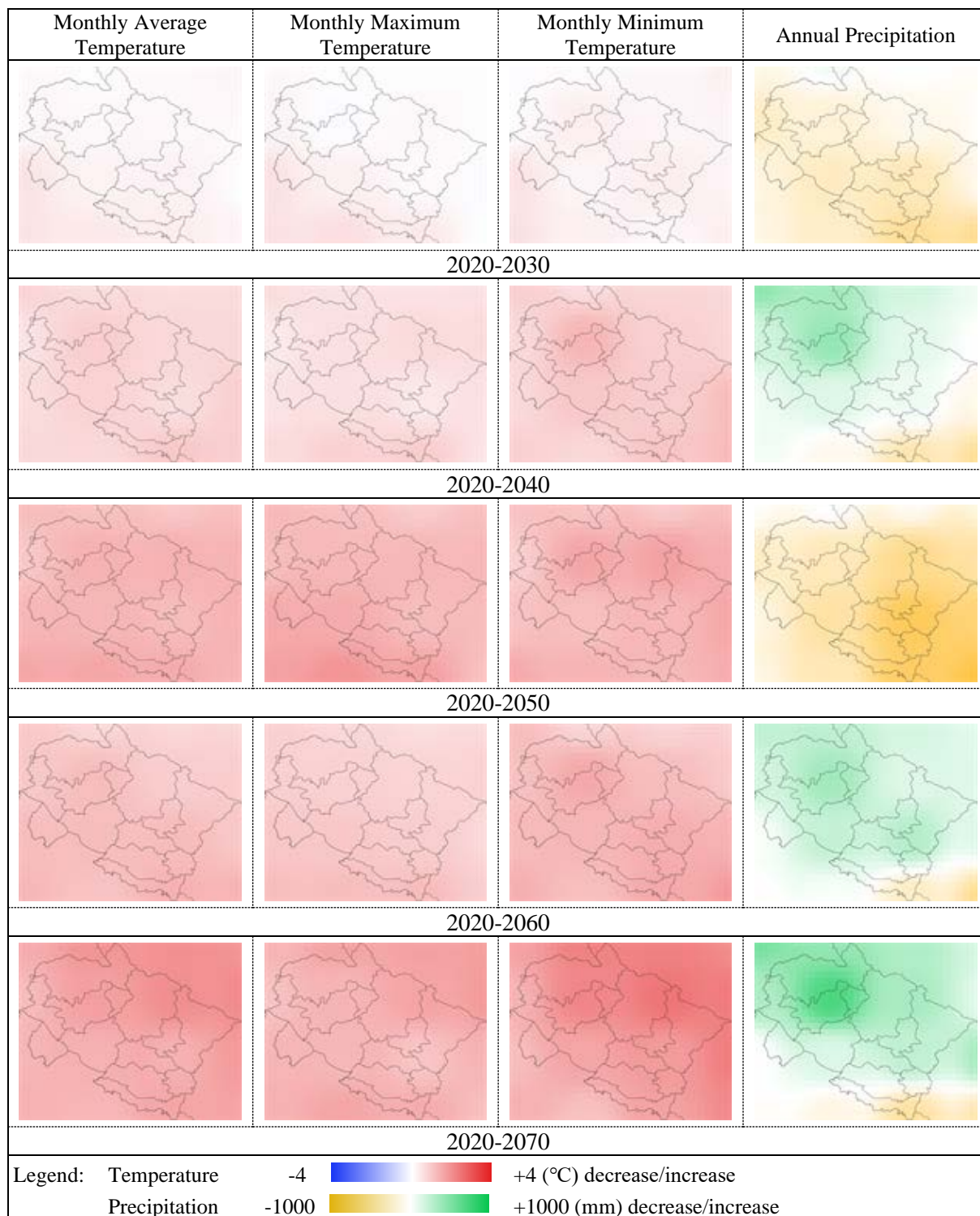
Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

Figure 5 Projected Variation of Temperature and Precipitation in 50 years under RCP2.6



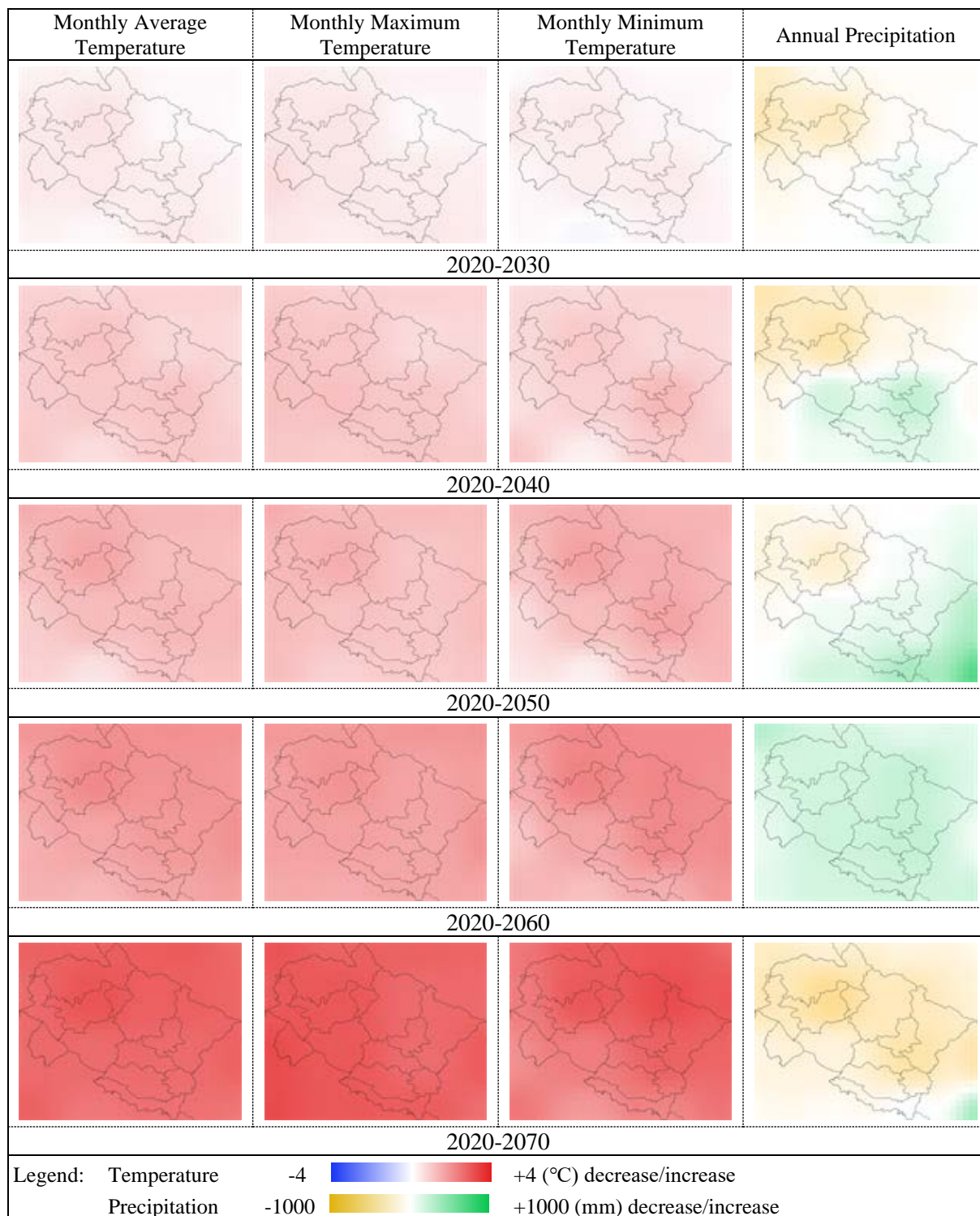
Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

Figure 6 Projected Variation of Temperature and Precipitation in 50 years under RCP4.5



Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

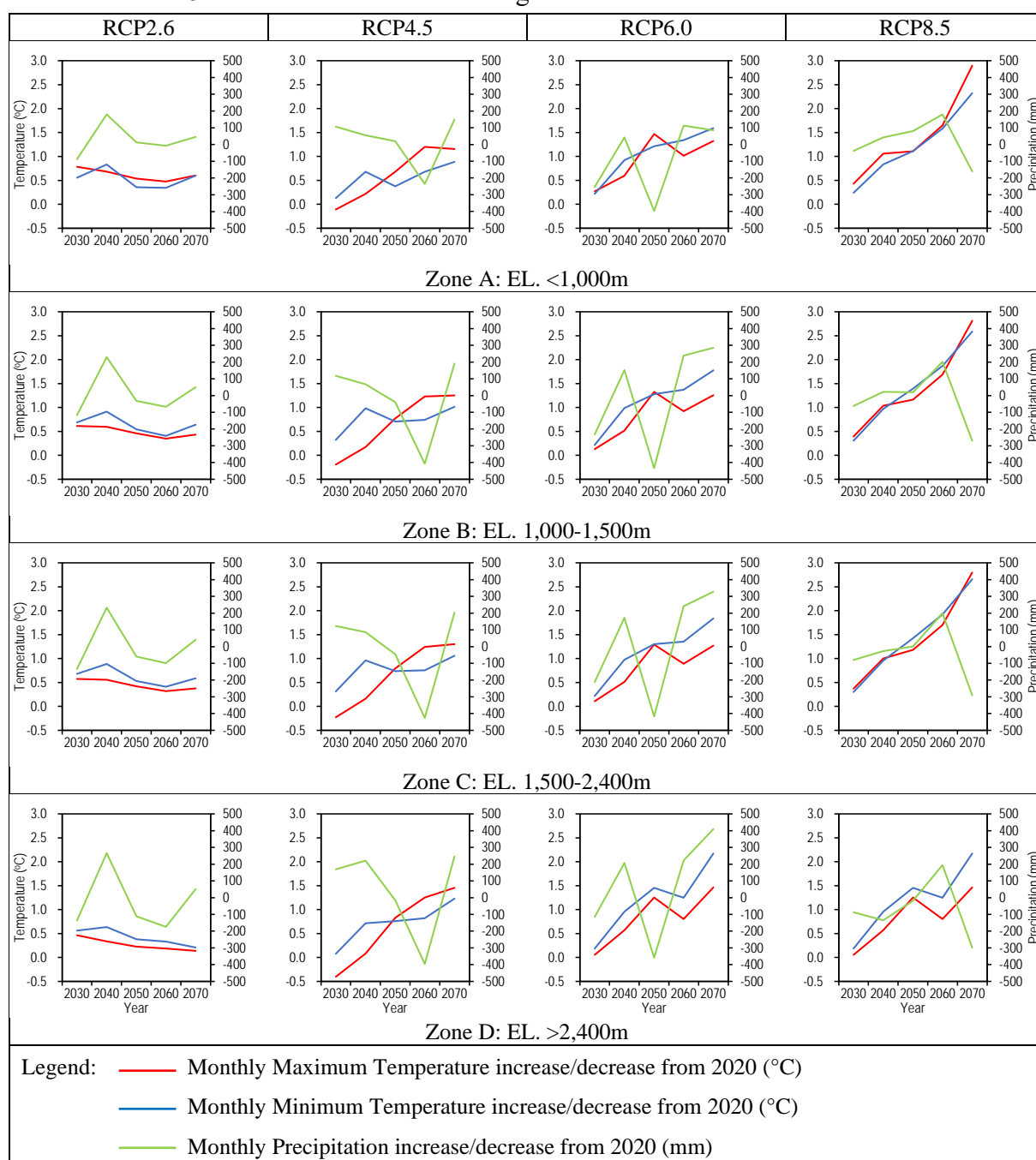
Figure 7 Projected Variation of Temperature and Precipitation in 50 years under RCP6.0



Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM>)

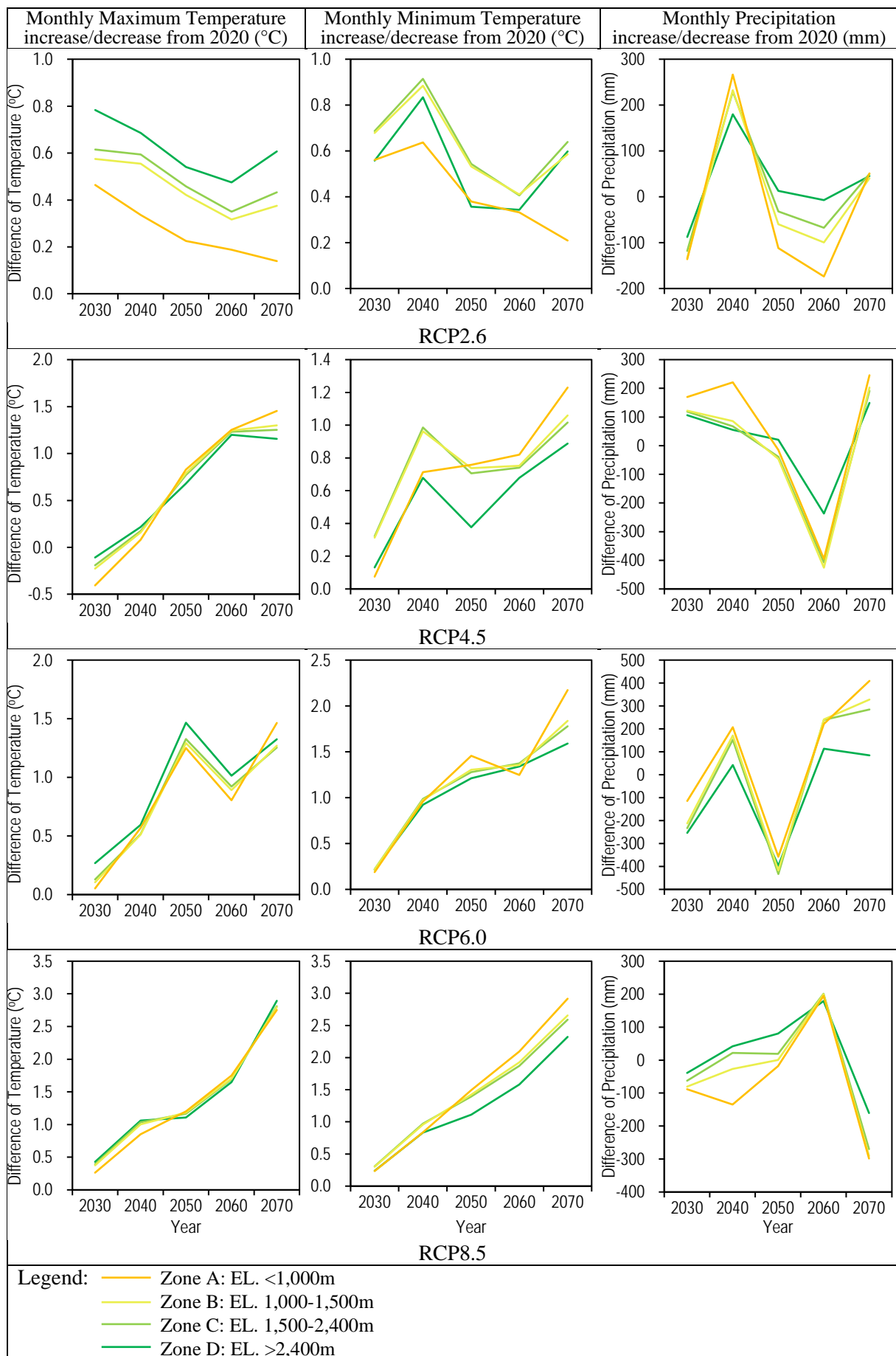
Figure 8 Projected Variation of Temperature and Precipitation in 50 years under RCP8.5

Attachment 2.1.5 Line Chart of Climate Change



Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

Figure 1 Climate Change from 2020 in each Agro-climate Zone under each Emission Scenario

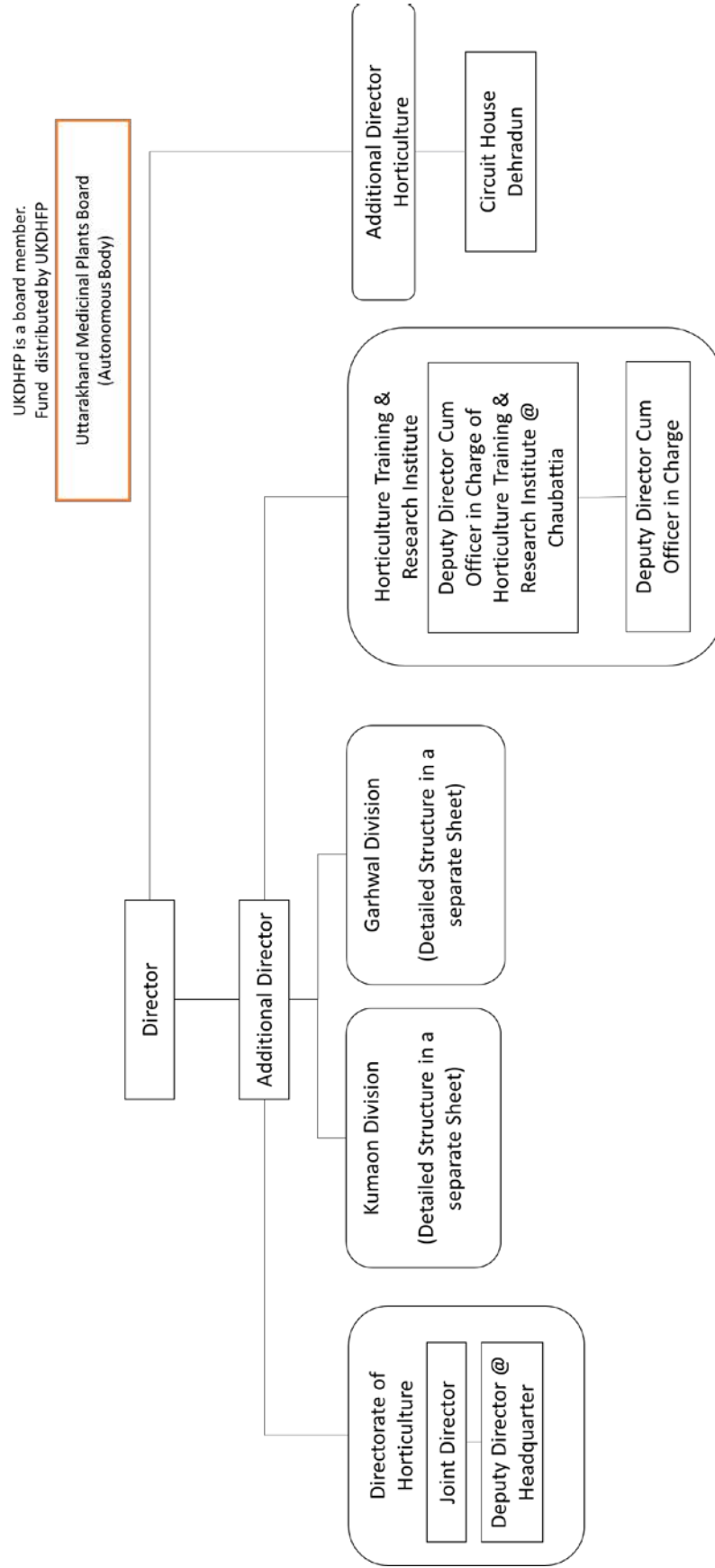


Source: Prepared by JICA Survey Team based on the data downloaded from MarkSim (<http://gismap.ciat.cgiar.org/markSimGCM/>)

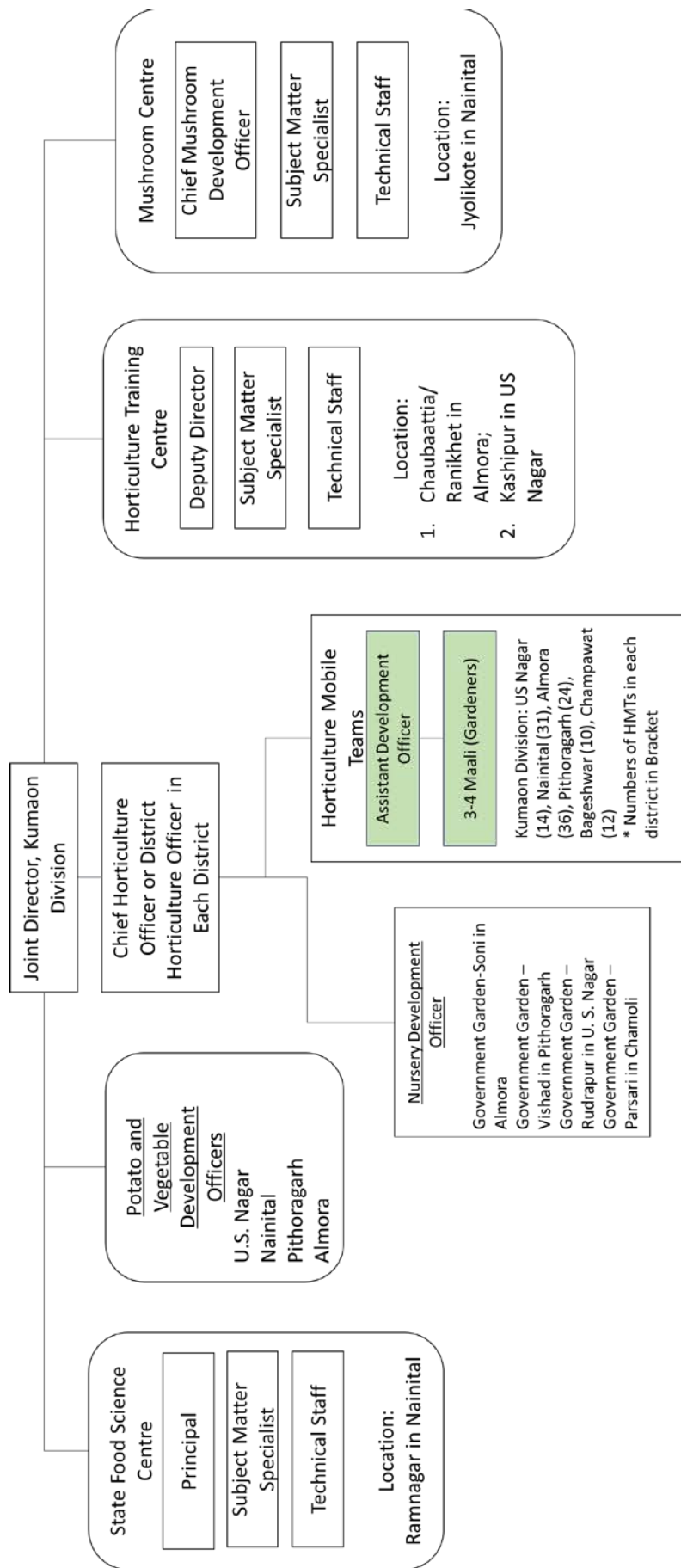
Figure 2 Difference of Climate Change from 2020 among Agro-climate Zones

Attachment 2.1.6 Organogram of UKDHFP (Confirmation awaited as of January 2022)

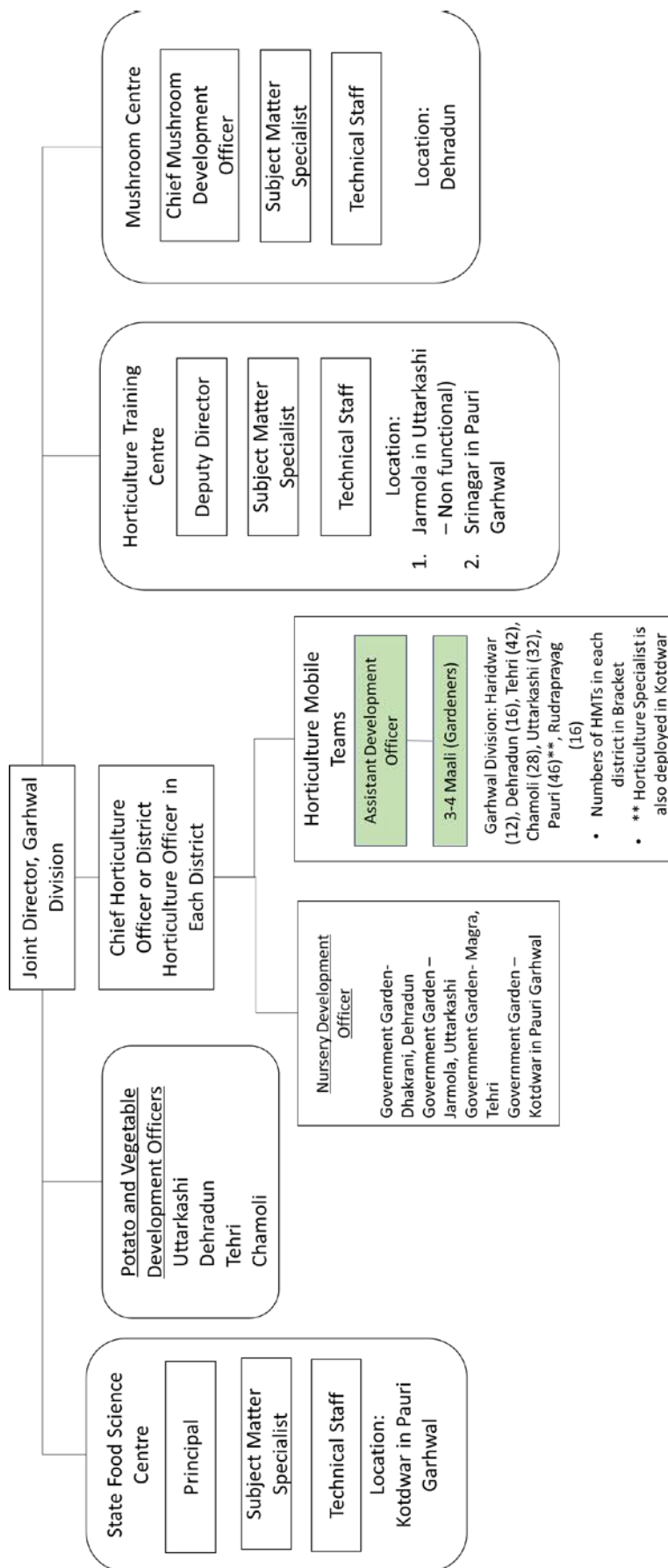
(1) Main Structure of UKDHFP



(2) Structure of Kumaon Division



(3) Structure of Garhwal Division



Attachment 2.1.7 Needs Submitted by the UKDHFP Training Centres

a) Nainital

1	Location	Ramnagar	Ramnagar	Haldwani
2	Facility Name	Govt. Food Science Training Centre	Govt. Community Fruit Preservation and Training Centre	Govt. Community Fruit Preservation and Training Centre
3	Activity in recent years	1-year diploma course Technical support to private	Community food preservation Short term training	Community food preservation Short term training
4	Staff (Work/Sanction)	12/17	2/3	3/4
5	Building construction	New building	New building	New building
6	Equipment supply	Bread slicer Deck oven Proving chamber Dough sheeter Bread mould Steam jacket pan Kettle Fruit mill Sealing machine Source pan Packing machine Dehydrator Pulper Cooking machine Storage rack & crate Tray	Steam jacket pan Kettle Fruit mill Sealing machine Source pan Packing machine Dehydrator Pulper Cooking machine Storage rack & crate Tray	Steam jacket pan Kettle Fruit mill Sealing machine Source pan Packing machine Dehydrator Pulper Cooking machine Storage rack & crate Tray
7	Challenges/ Need for Intervention	Lack of basic infrastructure and lack of modern equipment	Lack of basic infrastructure and lack of modern equipment	Lack of basic infrastructure and lack of modern equipment
		Faculties needed refresher courses to update their knowledge in reputed national level institutions	Need to become FSSAI compliant	Need to become FSSAI compliant

Source: UKDHFP

Nainital (continued)

1	Location	Nainital	Bhimtal	Ramghar
2	Facility Name	Govt. Community Fruit Preservation and Training Centre	Govt. Community Fruit Preservation and Training Centre	Govt. Community Fruit Preservation and Training Centre
3	Activity in recent years	Community food preservation Short term training	Community food preservation Short term training	Community food preservation Short term training
4	Staff (Work/Sanction)	2/4	3/4	1/3
5	Building construction	New building	New building	New building
6	Equipment supply	Steam jacket pan Kettle Fruit mill Sealing machine Source pan Packing machine Dehydrator Pulper Cooking machine Storage rack & crate Tray	Steam jacket pan Kettle Fruit mill Sealing machine Source pan Packing machine Dehydrator Pulper Cooking machine Storage rack & crate Tray	Steam jacket pan Kettle Fruit mill Sealing machine Source pan Packing machine Dehydrator Pulper Cooking machine Storage rack & crate Tray
7	Challenges/ Need for Intervention	Lack of basic infrastructure and lack of modern equipment	Lack of basic infrastructure and lack of modern equipment	Lack of basic infrastructure and lack of modern equipment
		Need to become FSSAI compliant	Need to become FSSAI compliant	Need to become FSSAI compliant

Source: UKDHFP

b) Pithoragarh

1	Location	Pithoragarh	Didihat	Baluwakot
2	Facility Name	Govt. Food Processing Centre	Govt. Food Processing Centre	Govt. Food Processing Centre
3	Activity in recent years	Community food processing 2-days training	Community food processing	Community food processing
4	Staff (Work/Sanction)	3/4	2/3	3/4
5	Building construction	New building	New building	New building
6	Equipment supply	Fruits crush machine Citrus fruit juicer Pulper Mixture Deep freezer Freezer Electric weight machine Fruits meal Sealing machine Dehydrator Storage rack Tray	Fruits crush machine Citrus fruit juicer Pulper Mixture Deep freezer Freezer Electric weight machine Fruits meal Sealing machine Dehydrator Storage rack Tray	Fruits crush machine Citrus fruit juicer Pulper Mixture Deep freezer Freezer Electric weight machine Fruits meal Sealing machine Dehydrator Storage rack Tray
7	Challenges/ Need for Intervention	Need to comply with FSSI standards Basic infrastructures for training, lab room, workshop are needed to function as training centre.	Need to comply with FSSI standards Basic infrastructures for training, lab room, workshop are needed to function as training centre.	Need to comply with FSSI standards Basic infrastructures for training, lab room, workshop are needed to function as training centre.

Source: UKDHFP

c) Tehri Garhwal

1	Location	Baurari	Chamba	Ghansali	Muni Ki Reti
2	Facility Name	Govt. Community Fruit Conservation Processing Unit	Govt. Community Fruit Conservation Processing Unit	Govt. Community Fruit Conservation Processing Unit	Govt. Community Fruit Conservation Processing Unit
3	Activity in recent years	Community food processing Training at community level	Community food processing Training at community level	Community food processing Training at community level	Community food processing Training at community level
4	Staff (Work/Sanction)	3/4	3/3	2/3	3/4
5	Building construction	New building	New building	New building	New building
6	Equipment supply	Steam jacket pan Vacuum pressure pan Electronic grinder Packing & sealing machine Pulper Machine Electronic juicer Storage tank Freezer Vegetable cutting machine Sugarcane juice machine Vegetable cutter/slicer Gravy machine Food processing table Amla shredding machine Water purifier Cooking machine Dehydrating machine Apple juicer Aluminium tray Storage rack and crate	Steam jacket pan vaccine pressure pan Electronic grinder Packing & sealing machine Pulper Machine Electronic juicer Storage tank Freezer Vegetable cutting machine Sugarcane juice machine Vegetable cutter/slicer Gravy machine Food processing table Amla shredding machine Water purifier Cooking machine Dehydrating machine Apple juicer Aluminium tray Storage rack and crate	Steam jacket pan vaccine pressure pan Electronic grinder Packing & sealing machine Pulper Machine Electronic juicer Storage tank Freezer Vegetable cutting machine Sugarcane juice machine Vegetable cutter/slicer Gravy machine Food processing table Amla shredding machine Water purifier Cooking machine Dehydrating machine Apple juicer Aluminium tray Storage rack and crate	Steam jacket pan vaccine pressure pan Electronic grinder Packing & sealing machine Pulper Machine Electronic juicer Storage tank Freezer Vegetable cutting machine Sugarcane juice machine Vegetable cutter/slicer Gravy machine Food processing table Amla shredding machine Water purifier Cooking machine Dehydrating machine Apple juicer Aluminium tray Storage rack and crate

1	Location	Baurari	Chamba	Ghansali	Muni Ki Reti
		Tray	Tray	Tray	
7	Challenges/ Need for Intervention	Facilities are not enough for training centre.	Infrastructure is not enough for training centre.	Infrastructure is not enough for training centre	Infrastructure is not enough for training centre
		Lack of modern machines and equipment.	Lack of modern machines and equipment.	Lack of modern machines and equipment.	Lack of modern machines and equipment.
		Lack of Staff.	Lack of Staff.	Lack of Staff.	Lack of Staff.
		Proper building with all new and modern equipment is needed with FSSAI norms to make an ideal food processing centre.	Proper building with all new and modern equipment is needed with FSSAI norms to make an ideal food processing centre.	Proper building with all new and modern equipment is needed with FSSAI norms to make an ideal food processing centre.	Proper building with all new and modern equipment is needed with FSSAI norms to make an ideal food processing centre.

Source: UKDHFP

d) Uttarkashi

1	Location	Uttarakhashi	Bhatwari	Nogaun
2	Facility Name	Govt. Community Fruit Conservation and Processing Unit	Govt. Community Fruit Conservation and Processing Unit	Govt. Community Fruit Conservation and Processing Unit
3	Activity in recent years	Community food processing Short term training	Community food processing Short term training	Community food processing Short term training
4	Staff (Work/Sanction)	3/4	3/2	4/4
5	Building construction	New building	New building	New building
6	Equipment supply	Steam jacket pan vaccine pressure pan Electric grinder Packing & sealing machine Pulper Electric juicer Storage tank Freezer Vegetable cutting machine Vegetable slicer Sugarcane juicer Gravy machine Food processing table Amla shredding machine Water purifier Cooking machine Dehydrator Apple juicer Storage rack & crate	Steam jacket pan vaccine pressure pan Electric grinder Packing & sealing machine Pulper Electric juicer Storage tank Freezer Vegetable cutting machine Vegetable slicer Sugarcane juicer Gravy machine Food processing table Amla shredding machine Water purifier Cooking machine Dehydrator Apple juicer Storage rack & crate	Steam jacket pan vaccine pressure pan Electric grinder Packing & sealing machine Pulper Electric juicer Storage tank Freezer Vegetable cutting machine Vegetable slicer Sugarcane juicer Gravy machine Food processing table Amla shredding machine Water purifier Cooking machine Dehydrator Apple juicer Storage rack & crate
7	Challenges/ Need for Intervention	Lacking facilities and modern machines, and equipment	Lacking facilities and modern machines, and equipment	Lacking facilities and modern machines, and equipment
		Lack of staff	Need to have the facilities so that the centre can comply with FSSI	Need to have the facilities so that the centre can comply with FSSI
		Need to have the facilities so that the centre can comply with FSSI		

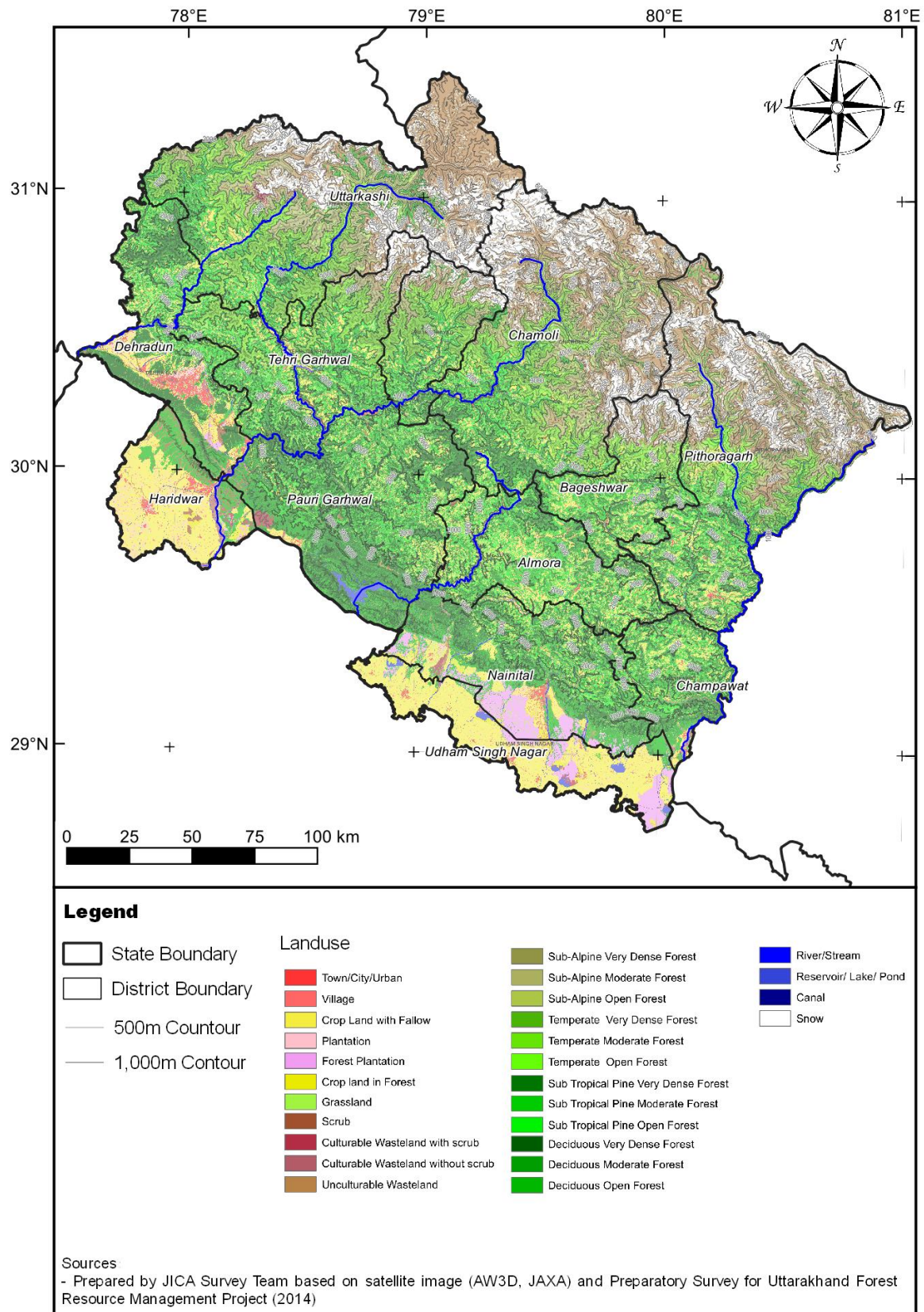
Source: UKDHFP

Attachment 2.2.1 State Wise Counts of People Living Under Poverty 2020

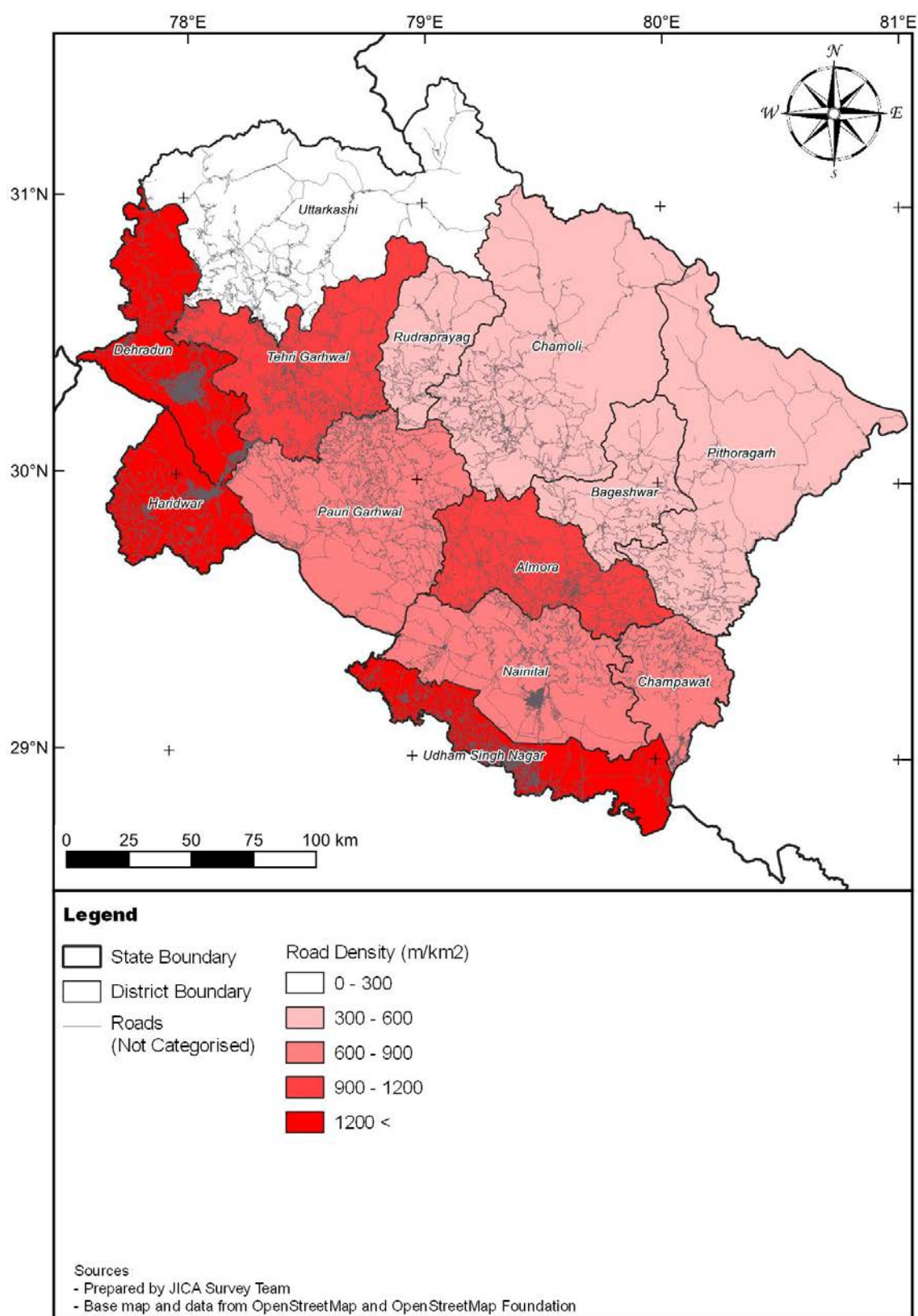
Sl. No	State	% of people living under poverty
1	Andaman and Nicobar Islands	1
2	Andhra Pradesh	9.2
3	Arunachal Pradesh	34.67
4	Assam	31.98
5	Bihar	33.74
6	Chandigarh	21.81
7	Chhattisgarh	39.93
8	Dadra and Nagar Haveli	39.31
9	Daman and Diu	9.86
10	Delhi	9.91
11	Goa	5.09
12	Gujarat	16.63
13	Haryana	11.16
14	Himachal Pradesh	8.06
15	Jammu and Kashmir	10.35
16	Jharkhand	36.96
17	Karnataka	20.91
18	Kerala	7.05
19	Ladakh	10.35
20	Lakshadweep	2.77
21	Madhya Pradesh	31.65
22	Maharashtra	17.35
23	Manipur	36.89
24	Meghalaya	11.87
25	Mizoram	20.4
26	Nagaland	18.88
27	Odisha	32.59
28	Puducherry	9.69
29	Punjab	8.26
30	Rajasthan	14.71
31	Sikkim	8.19
32	Tamil Nadu	11.28
33	Telangana	-
34	Tripura	14.05
35	Uttar Pradesh	29.43
36	Uttarakhand	11.26
37	West Bengal	19.98
	India	21.92

Source: NITI Aayog (<https://sdgindiaindex.niti.gov.in/#/ranking>)

Attachment 2.3.1 Mapping of Land Utilization



Attachment 2.5.1 Mapping of Road Density



Attachment for Chapter 3

Attachment 3.2.1 List of Blocks Covered by IFAD assisted Projects

District	REAP (under preparation)	ILSP (completed in 2021)	ULIPH (completed in 2012)
Almora	All Blocks in Uttarakhand	1. Syaldeh 2. Salt 3. Bhikiasain 4. Chaukhutia 5. Hawalbagh 6. Tarikhet, Dwarahat	1. Bhainsiyachana 2. Lamgara 3. Dhauladevi
Bageshwar		7. Garur	4. Bageshwar 5. Kapkot
Chamoli		8. Tharali 9. Pokhri	6. Ghat 7. Deval 8. Narayanbagad 9. Dasholi
Tehri		10. Chamba 11. Jaunpur	10. Bhilangana, 11. Jaunpur (common) 12. Devprayag 13. Pratapnagar
Uttarkashi		12. Bhatwari	14. Naugaon 15. Mori 16. Purola, 17. Dunda
Rudraprayag		13. Jakholi 14. Augustmuni	-
Pithoragarh		15. Kanalichina 16. Pithoragarh (Bin) 17. Munakot	-
Pauri		18. Kaljikhali	-
Dehradun		19. Kalsi 20. Chakarata	-
Nainital			
Champawat			
Total	95 Blocks	20 Blocks	17 Blocks

Source: IFAD

Attachment 3.2.2 List of Sub-sector wise details of Schemes Implemented in Uttarakhand

1) Subsector wise details Horticulture Schemes Implemented in Uttarakhand

Scheme	Objective	Assistance	Limit per Beneficiary (INR/Number/ha)
Bee-Keeping	1.Pollination to increase fruit production and honey production – 04 quiet boxes to be kept in an area of 1 ha. 2.Distribution of quiet boxes in colonies. 3. 7 days training for Bee-keeping.	Rs.350 per box 50% 100%	4 boxes Rs.800 per beneficiary (10 quiet boxes/clan) Rs.350 expenditure on per trainee plus Rs.700 will be transferred directly to the bank account of the trainee for the 7 day training, total – Rs.1050 per beneficiary.
Garden fencing plan	Subsidy for the fencing of garden for protection from wild animals.	50%	50% for fencing, maximum – INR 0.033 Million per ha raised to INR 0.1 million L per ha.
Market Intervention Scheme	Purchase arrangement of C grade apples, malta, galgal from producers at support price.	Devoid of profit or loss	-----
Mushroom production and marketing scheme	1.Providing pasteurized compost to growers 2.Spawn seed production 3. 7 days training	50% 50% 100%	50 quintal per beneficiary 25 kg spawn per beneficiary Rs.350 expenditure on per trainee plus Rs.700 will be transferred directly to the bank account of the trainee for the 7 day training, total – Rs.1050 per beneficiary.
Crop Insurance Policy	Horticulture produce – apple,mango,peach,malta,lychee,tomato,ginger,potato,french bean and chillies' weather based insurance.	50% of premium	Farmers pay 5% of the premium while the remaining balance premium will be borne by state and central government on a 50:50 basis.
Scheme for production of off season vegetables and spices in SC/ST areas	Demonstration to promote vegetable and spice production	Free	0.1 ha and Rs.300 per crop.
Horticulture development in ST Areas	1.Establishment of individual gardens(area expansion) 2.Providing potato seeds and inputs for potato production	50% 50%	0.2 ha to 2 ha per beneficiary – upto a maximum of Rs.5000 per ha. 0.1 ha to 1 ha per beneficiary – upto a maximum of Rs.20,000 per ha.
Chief Minister's protected garden development scheme(30% state share)	To produce flowers and vegetables in a polyhouse	80%(50% central government + 30% state government)	500 sq metres

Scheme	Objective	Assistance	Limit per Beneficiary (INR/Number/ha)
Borewell installation scheme	Assistance to farmers for the installation of borewells for irrigation purposes.(Rs.75,000 central government + Rs.25,000 state government share per unit)	Rs.1 L per unit	1 unit
Scheme for polythene replacement of polyhouse	Assistance in polythene replacement of dilapidated polyhouses aged more than 5 years	75% cost of polythene Rs.50/sq metres	4000 sq metres
Plantation scheme	Free plantation for government residences,offices,schools and farmers	100%	5 plants for farmers and per requirement for others
Off season vegetable production in Uttarakhand	State assistance to promote the production of off season vegetables	75% of Rs.50,000 per ha	1 ha
Installation of fruit nurseries	Installation of small fruit nurseries (0.2 ha to 1 ha)	50% of Rs.15 L per ha	Subsidy of INR 0.75 Million for 1 ha. As required for smaller nurseries
Organic Horticulture Scheme	To promote organic horticulture in the districts of Pithoragarh and Chamoli	50% of Rs.20,000 per ha	1 ha
Mission to produce walnuts and other kernels	To promote the cultivation of walnuts,almonds and peanuts by providing support through area expansion and establishment of nurseries	50% of Rs 15 L for personal area per ha. 100% for state areas and Rs.60,000 for area expansion per ha.	Rs. 0.75 Million subsidy for 1 ha. Proportional subsidy for small nurseries.
State Food Processing Mission	To promote food processing units in the state	50% grant for private sector entrepreneurs in technical civil work and plant machinery.	1 unit
Soil testing and laboratory work scheme	Testing deficiency or excess of major and micro nutrients of soil sample in labs at Chabatia and Srinagar,assess and recommend manures as well as fertilizers.	100% in state sector	For soil testing, Rs.7 for major elements and Rs.63 for micro elements will be taken from farmers
Scheme for promotion of Masala Mirch	Promotion of cultivation of high quality Masala Mirch(Red Chilli) and providing incentives to farmers	Incentives of Rs.700 per quintal	-----
Establishment of Vermicompost units	To establish vermicompost units to promote organic farming and provide employment to youth, women and self support groups	75% of Rs.33,000 per unit	1 unit
Mission Apple scheme	To promote apple production through advance technology and micro irrigating facility. To encourage intensive planting by providing clonal root stock.	80% of Rs.12 L per acre	1 Acre

Source: UKDHFP

2) District Schemes / Zila Schemes

Scheme	Objective	Assistance	Limit per Beneficiary (INR/Number/ha)
Production of improved planting material/plant	1.Subsidy in transportation of fruit,plant,vegetable and	100%	Per Requirement

development	potato seeds		
	2.Investment in establishment of new gardens	50%	INR 0.030 million per ha
	3.Distribution of insecticides for plant protection	60%	Upto Rs.5000 per ha
	4.Kurmula(white grubs) pest control		Upto Rs.1800 per ha
	5.Distribution of garden tools	60%	
	6.Setting up of 3x2x1.5 m rainwater harvesting tank for the purpose of irrigation	50%	Upto Rs.1200 per device
		50% of Rs.24,500 per unit	Rs.12,250 per unit
Plan for dry processing of fruits and vegetables	1.Providing plastic crates, kilts and packing boxes to get fair price for fruits and vegetables in the market	100%	Per requirement
	2.Processing of fruits and vegetables	Devoid of profit or loss	Service charge – Rs.15 per kg
	3.Providing black polythenes to Chilli growers (who grow in 20 groves)	50%	200 sq ft suitable gauge polythene
	4.7 days training for the processing of fruits and vegetables	100%	Rs.350 expenditure on per trainee plus Rs.700 will be transferred directly to the bank account of the trainee for the 7 day training, total – Rs.1050 per beneficiary
Horticulture development in the SC areas of the state	1.Garden development – Investment in the establishment of individual gardens	50%	Maximum Rs.0.030 million per ha for areas of 0.2 to 2.0 ha per beneficiary
	2.Distribution of seeds and input for potato production	50%	Area – 0.1 to 1.0 per ha INR 0.025 million per ha for plain areas. INR 0.040 million per ha for mountainous areas.

Source: UKDHFP

Attachment 3.3.1 Key Interventions by Concerned Departments

Department/ Organisation/ Institute	Key Interventions
Agriculture Department	<p>Central Schemes: National Agriculture Development Programme (NADP); National Food Security Mission (NFSM); Pradhan Mantri Krishi Sinchayee Yojana (PMKSY); Rainfed Area Development Programme; Soil Health Card scheme; Paramparagat Krishi Vikas Yojana (PKVY); National Bamboo Mission; SubMission on Agriculture Mechanisation (SMAM); Sub Mission on Seed and Planting Material; NeGPA (National E- Governance Plan in Agriculture); Support to State Extension Programmes for Extension Reforms (ATMA); Pradhan Mantri Fasal Bima Yojana (PMFBY) (PM crop insurance scheme); Timely reporting Scheme (TRS); Improvement in Crop Statistics (ICS); Pradhan Mantri Kisan Samman Nidhi Yojana (PM-Kisan Yojana); Pradhan Mantri Kisan Mandhan Yojana PMKMY; Agriculture Infrastructure Fund (Not availed in 2020-21); FPO Scheme – (Proposed 20 by NABARD, 15 by SFAC and 6 by NCDC in 2021-22).</p> <p>State Schemes: Strengthening of Agriculture inputs Storage and Training centres; Conduct of Various Laboratories; State Farmers Commission; water pump, Sprinkler Sets Poly House Diversification; Integrated deal agriculture Village scheme (Akikrat Adarsh Krishi Gram Yojana); CM Krishi Vikas Yojana; Farm Machinery Bank Establishment; Doubling Farmers income Jaivik Mandua Utpadan Karyakram, and other departmental initiatives.</p> <p>Kisan Call Center : In order to harness the potential of ICT in Agriculture, Ministry of Agriculture & Farmers Welfare launched the scheme “Kisan Call Centres” (KCCs) on January 21, 2004. Main aim of the scheme is to answer farmers’ queries on a telephone call in their own language.</p> <p>In Uttarakhand, G B Pant University of Agriculture & Technology, Pantnagar (Hindi Language), Udham Singh Nagar is running the kisan call center. It is closely linked with Nainital District especially Haldwani and Ram Nagar area of Nainital. A Kisan Knowledge Management System (KKMS) has been developed to capture all the details of the caller and sending gist of answer given through SMS. KKMS has its independent website: - http://dackkms.gov.in</p> <p>Soil Testing Centers: Uttarakhand has 13 Soil testing centers in Uttarakhand. These are in every district including 4 project districts also. Details of the Soil testing labs are available at: https://agriculture.uk.gov.in/files/contact_details_soil_labs.pdf</p>
Krishi Vigyan Kendras (KVKs)	<p>Key Interventions of KVKs in Uttarakhand include - Organising of On and Off campus training programmes for Farmers, Rural Women, Rural Youth, and Extension personnel to make them aware about the latest technologies in agriculture; Conducting short and long term vocational training courses on cereals, pulses, vegetable, floriculture, beekeeping, dairying, mushroom, organic farming, protective cultivation and Soil Testing etc for farmers, rural woman, rural youth for self-employment; Conducting Front Line Demonstrations (FLD) and On Farm Trials (OFT) at farmer’s fields on improved technologies and refinement of existing technology so as to suit the need of the farmer; undertaking Soil Testing and distribution of Soil Health Card to the farmers; and guiding on Post harvest technology with value addition of hills crop.</p> <p>Specific Activities of KVKs in Uttarakhand:</p> <p>On-Farm Testing: Each KVK operates a small farm to test new technologies, such as seed varieties or innovative farming methods, developed by ICAR institutes. This allows new technologies to be tested at the local level before being transferred to farmers.</p> <p>Front-line Demonstration: Due to the KVK's farm and its proximity to nearby villages, it organizes programs to show the efficacy of new technologies on farmer fields.</p> <p>Capacity Building: In addition to demonstrating new technologies, the KVK also hosts capacity building exercises and workshops to discuss modern farming techniques with groups of farmers.</p> <p>Multi-sector Support: Offer support to various private and public initiatives through its local network and expertise. It is very common for government research institutes to leverage the network of KVKs when performing surveys with a wide range of farmers.</p> <p>Advisory Services: Due to the growing use of ICT, KVKs have implemented technologies to provide farmers information, such as weather advisories or market pricing, through radio and mobile phones. In each of these activities, the KVK focuses on crops and methods specific to the local climate and industry. Some factors which may impact this decision are: soil type, crops grown, water availability, seasonal temperatures, and allied sectors such as dairy and aquaculture.</p> <p>In addition to addressing local factors, KVKs are also mandated to increase adoption of practices that align with remunerative agriculture, climate smart agriculture, and dietary diversification. Some KVKs also host social activities to facilitate rapport between the institutions and the local community.</p> <p>Krishi Vigyan Kendra, Bharsar, Pauri Garhwal is the knowledge and resource centre of agricultural technologies for supporting initiatives of public, private and voluntary sector in improving the agricultural economy of the district.</p> <p>Krishi Vigyan Kendra, Ranichauri is the Farm Science Centre which is working at grass root level. It is an innovative science-based institution established to accelerate the agricultural production and also to improve the socio-economic conditions of the farming community of the Tehri Garhwal district of Uttarakhand. It is creating awareness about improved agricultural technologies through large number of extension programmes organised in village, block or district level. Critical and</p>

Department/ Organisation/ Institute	Key Interventions
	<p>quality inputs like seeds, planting materials, organic products, bio-fertilizers and livestock, goatery and poultry strains are produced by the KVK and made available to the farmers. The Krishi Vigyan Kendra consists of scientist of different subjects specialist and provides training on different field's of Agriculture, Horticulture, Soil Science, Agroforestry, Home Sciences/ Food Science and Technology, Animal Husbandry and plant protection etc.</p>
<p>Agricultural Technology Management Agency (ATMA)</p>	<p>In Uttarakhand eight districts - Dehradun, Udham Singh Nagar, Almora, Nainital, Uttarkashi, Pauri, Chamoli, & Champawat are covered under ATMA project. (https://agritech.tnau.ac.in/atma/atma_statewise_districtslist.html)</p> <p>In Uttarakhand a budget of INR 111.593 million is ascertained in the year 2021-22. In 2020-21, 284 Farmers training; 4582 Demonstrations; 213 Field Visits; 526 Formation of Farmers Groups; 17 Kisan Mela (Exhibitions); 17 Farmers Scientists interactions; 159 Kisan Discussions/Field Days; 410 Kisan Awards; 264 Farm schools were organised with participation of 56573 Farmers.</p> <p>Agricultural Technology Management Agency (ATMA) Scheme was launched during 2005-06. The Scheme is implemented through the institutional mechanism set up at State, District, Block and Village level as detailed below:</p> <p>At State Level: The State Level Sanctioning Committee (SLSC) set up under Rashtriya Krishi Vikas Yojana (RKVY) is the apex body to approve State Extension Work Plan (SEWP) which will form a part of the State Agriculture Plan (SAP). The SLSC is supported by the Inter Departmental Working Group (IDWG) which is responsible for day-to-day coordination and management of the Scheme activities within the State. The State Nodal Cell (SNC), consisting of State Nodal officer, State Coordinator, State Gender Coordinator and supporting staff ensure timely receipt of District Agriculture Action Plans (DAAPs), formulation of State Extension Work Plan (SEWP) duly incorporating farmers' feedback obtained through State Farmer Advisory Committee (SFAC) and its approval by the SLSC. The SNC convey the approval and monitor implementation of these work plans by State Agricultural Management & Extension Training Institutes (SAMETIs) and ATMA.</p> <p>At District level: An autonomous institution KISAN CALL CENTRES: viz. Agricultural Technology Management Agency (ATMA) set up at district level is responsible to ensure delivery of extension services to farmers. ATMA Governing Board is the apex body of ATMA which provides overall policy direction. ATMA Management Committee is the executive body looking after implementation of the scheme. District Farmers Advisory Committee is a body to provide farmers' feedback for district level planning and implementation. ATMA is the district level nodal agency responsible for overall management of agriculture extension system within the district, including preparation of Strategic Research and Extension Plan (SREP).</p> <p>At Block Level: The Block ATMA Cell consisting of Block Technology Team (BTT) (a team comprising officers of agriculture and other allied departments within the block) and Block Farmers' Advisory Committee (BFAC) (a group exclusively consisting of selected farmers of the block) prepare the Block Action Plan (BAP) and provide necessary extension support within the Block in its execution.</p> <p>At village level: The following mechanism is involved in disseminating information:</p> <ul style="list-style-type: none"> • The Farmer Friend (FF) serves as a vital link between extension system and farmers at village level (one for every two villages). • Agri-entrepreneurs, Diploma holders in Agricultural Extension Services for Input Dealers (DAESI), Input Dealers and extension workers in non-governmental sector supplement the efforts of extension functionaries. • Commodity Interest Groups (CIGs), Farmer Interest Groups (FIGs) and Food Security Groups (FSGs) serve as a nodal point for information & technology dissemination among its members. • Farm Schools set up on the field of progressive/ awardee serve as a mechanism for farmer-to-farmer extension at every Block. <p>2 Release of funds under ATMA scheme is based on State Extension Work Plans (SEWPs) prepared by the State Governments in consonance with a 5 year perspective Strategic Research & Extension Plan.</p> <p>3 Allocation of resources for activities related to extension is linked to number of Farm Households and Blocks.</p> <p>4 At least, 10% of allocation on recurring activities at district level is to be used through non-governmental sector.</p> <p>5 Innovative Technology Dissemination components such as hand-held device, pico-projectors, kala jathas etc. are being promoted for dissemination of information in a real time basis and also for collection of farm level data.</p> <p>6 Extension services through mobile telephony have been given a major thrust.</p> <p>7 Convergence among farmer centric extension activities various Sub-Missions of NMAET and other Missions / Schemes through the institution of ATMA is being promoted. Research & Extension are also moving together in the field.</p>
<p>MSME Department</p>	<p>Some of the relevant schemes of Industries for Horticulture Sector are: Cluster Development Scheme- An amount of INR 20.0 Million is ascertained in the year 2021-22. The</p>

Department/ Organisation/ Institute	Key Interventions
((Directorate of industries)	<p>purpose of this scheme is to promote organised industries, promoting enterprises in Hilly areas and investment, Employment Generation and Stopping migration ; and Entrepreneurship development. In 2021-22, 10 clusters will be promoted.</p> <p>Promotion of Enterprises in remote areas of Uttarakhand – An amount of INR 200 million is set aside for the promotion of industries in remote areas of Uttarakhand. It is proposed that 30 units will be supported under this scheme in 2021-22.</p> <p>Special scheme for Promotion of Women Entrepreneurs – This scheme is for promotion of women entrepreneurs in Uttarakhand as per the industrial policy. An amount of INR 70 million is kept for this scheme with physical target of 79 in 2021. In 2020, 23 entrepreneurs were promoted.</p> <p>Micro, Small and Medium enterprise development – An amount of INR 350 million is kept for the scheme with physical targets of 231.</p> <p>MSME centrally sponsored schemes – For the implementation of MSME schemes of central government an amount of INR 10.0 million is proposed from the state.</p> <p>Growth Centers -SHG formation-100, CLF40, Growth Centre-25, Self Employment-1000. In the year 2020, 83 Growth centers were established through various agencies and projects like IFAD -ILSP, Watershed Directorate, SRLM etc. In 2021, 118 growth centers are expected to be established. An amount of INR 100 million is proposed for 2021-22.</p> <p>Details of the Growth Centers are available at - https://growthcentres.uk.gov.in/</p> <p>Chief Minister Self-employment Scheme – There is a special scheme launched by CM of Uttarakhand for the self employment of youth in the state. An amount of INR 350 million is kept for the purpose.</p> <p>Skill Development Training Scheme – for various skills development in different subsectors an amount of INR 5 million is proposed for the year 2021-22.</p> <p>Source: https://budget.uk.gov.in/files/2021-22_.pdf</p>
Cooperative Department	<p>In 2019-20, Coopertaives purchased 1400 MT Apple (A, B and C Category) and kept in cold storage. Out of the total 944 MT A grade apple was marketed by Feb.2020.</p> <p>With the support of NABARD, out of the total 670 MPACS, 106 have been developed as ‘Mutipurpose Service Centers’ for diversification of activities of PACS and to provide credit to the farmers.</p> <p>Under Deendayal Upadhyay SahKarita Kisan Kalyan Yojana small and marginal farmers of the state are provided loans upto INR 0.1 million for agriculture without interest and without any collaterals. For Animal Husbandary, Horticulture, Dairy, organic farming, Off- Season Vegetables, Poly Houses etc. INR 0.30 million credit is provided. To SHGs this amount of credit is INR 0.50 million.</p> <p>Under this scheme 0.4 Million farmers and 331 SHGs are supported with INR 200 Million credit. In 2020-21 till spetember, 56 thousand farmers and 83 SHGs were benefited with INR 31.0 million credit. The state also has a state level Apple and marketing cooperative Federation. In JICA project districts – Uttarkashi has 35 PACS, Tehri Garhwal -78, Pithoragarh- 74 and Nainital -50. Most of these PACS are having their own Godowns which are not 100% utilised. Hence, there is a scope to utilise the godowns for storage of fruits and vegetables after some renovation.</p> <p>The department is running a project State Integrated cooperative development project. Under the project PACS have been converted into MPACS (Multipurpose). They are undertaking various innovative activities in the state. Collective Coop. Farming is the major activity which is being initiated through MPACS for the upliftment of the Rural population with the support of NCDC Assistance through State Mega Project of Rs. 3,340.00 crore.</p> <p>In horticulture sector, the project has a programme of INR 170.00 million for Apple production and Marketing in Uttarkashi District, Silage unit using Maize in distrioct Dehardun and Haridwar, Flowers production (Damask rose) in Almora, Ginger production in Champawat and Lemon grass in Haridwar. For promotion of apple , Uttarkashi marketing cooperative at Naugaon has started procuring all the grades of apples from the farmers. In 2020 it has procured 1400Mt and in the year 2021-22, the coopertaive will work with 1000 new apple growers supporting in devoping orchards and purcasing about 2000 MT apples.</p> <p>Source : https://des.uk.gov.in/pages/display/163-economic-survey--2020-21</p>

Source: Information based on the websites of the concerned departments of Uttarakhand.

Attachment 3.4.1 Current Position of Uttarakhand

State-wise Area and Production of Apple

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	JAMMU & KASHMIR	136.54	1672.72	12.25	162.97	1725.75	10.59	158.15	1808.33	11.43	1	1	1
2	HIMACHAL PRADESH	110.68	777.13	7.02	111.90	468.13	4.18	112.63	446.57	3.96	2	2	3
3	UTTARAKHAND	24.98	61.94	2.48	25.20	62.06	2.46	25.32	58.66	2.32	3	3	4
4	ARUNACHAL PRADESH	4.68	7.28	1.56	4.55	7.18	1.58	4.66	7.35	1.58	4	4	5
5	KERALA	NA	NA	-	NA	NA	-	0.00	4.00	0.00	7	5	-
6	NAGALAND	0.27	2.01	7.44	0.27	2.00	7.41	0.27	1.99	7.37	5	6	2
7	TAMIL NADU	0.00	0.02	0.00	0.00	0.12	0.00	0.00	0.01	0.00	7	7	-
8	SIKKIM	0.00	0.00	-	NA	NA	-	0.01	0.00	0.00	6	8	-
9	TELANGANA	NA	NA	-	NA	NA	-	0.00	0.00	-	7	8	-

State-wise Area and Production of Walnut

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	JAMMU & KASHMIR	69.24	206.43	2.98	89.34	264.24	2.96	85.62	275.45	3.22	1	1	1
2	UTTARAKHAND	17.24	19.32	1.12	17.37	20.47	1.18	17.56	21.17	1.21	2	2	2
3	HIMACHAL PRADESH	4.47	2.25	0.50	4.45	2.14	0.48	4.44	2.46	0.55	3	3	4
4	ARUNACHAL PRADESH	1.11	0.60	0.54	0.95	0.48	0.51	1.00	0.63	0.63	4	4	3

State-wise Area and Production of Sweet Orange

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	ANDHRA PRADESH	77.94	1265.16	16.23	81.95	1638.94	20.00	82.89	2003.11	24.17	1	1	1
2	ASSAM	0.46	4.76	10.35	0.14	1.89	13.50	0.14	1.98	14.14	16	15	5
3	BIHAR	0.50	5.50	11.00	0.50	5.50	11.00	0.40	4.40	11.00	13	10	8
4	CHHATTISGARH	0.41	2.19	5.34	0.42	2.25	5.36	0.47	2.37	5.04	12	14	12
5	HIMACHAL PRADESH	1.69	2.22	1.31	1.75	2.78	1.59	1.81	2.77	1.53	7	11	16
6	JAMMU & KASHMIR	1.77	2.60	1.47	NA	NA	-	3.16	5.72	1.81	5	8	15
7	KARNATAKA	1.70	27.43	16.14	1.73	25.65	14.83	1.52	25.77	16.95	10	5	3
8	MADHYA PRADESH	3.04	43.48	14.30	12.20	200.73	16.45	6.43	111.72	17.37	4	4	2
9	MAHARASHTRA	54.26	659.15	12.15	32.33	372.81	11.53	55.18	684.80	12.41	2	2	7
10	MIZORAM	1.96	4.55	2.32	1.59	4.94	3.11	1.59	4.94	3.11	9	9	13
11	NAGALAND	0.27	2.06	7.63	0.29	2.25	7.76	0.22	1.65	7.50	14	16	11
12	PUNJAB	2.72	22.42	8.24	2.81	23.25	8.27	3.00	25.09	8.36	6	6	10
13	RAJASTHAN	0.19	2.35	12.37	23.55	499.11	21.19	0.20	2.69	13.45	15	12	6
14	TAMIL NADU	0.13	2.20	16.92	0.11	2.34	21.27	1.67	17.53	10.50	8	7	9
15	TELANGANA	95.30	1420.30	14.90	30.53	423.73	13.88	24.76	368.60	14.89	3	3	4
16	TRIPURA	1.33	1.64	1.23	1.26	3.17	2.52	1.12	2.59	2.31	11	13	14
17	OTHERS	0.08	0.13	1.63	0.08	0.10	1.25	0.08	0.11	1.38	17	17	17

Note: Productivity is calculated as Production divided by Area.

Source : Horticulture Statistics Division, Department of Agriculture, Coopn & Farmers Welfare.

State-wise Area and Production of Tomato

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	ANDHRA PRADESH	59.08	2236.56	37.86	49.79	4481.01	90.00	61.67	2744.32	44.50	5	1	1
2	ARUNCHAL PRADESH	0.23	3.32	14.43	0.23	2.11	9.17	0.25	2.15	8.60	28	28	24
3	ASSAM	17.66	445.02	25.20	18.18	393.60	21.65	18.28	396.24	21.68	15	15	14
4	BIHAR	45.81	1001.01	21.85	46.21	1009.60	21.85	45.01	941.56	20.92	9	10	16
5	CHHATTISGARH	54.91	908.98	16.55	62.33	1082.34	17.36	63.29	1087.33	17.18	4	8	18
6	GUJARAT	46.40	1319.11	28.43	48.76	1411.85	28.96	46.61	1357.52	29.13	7	4	7
7	HARYANA	29.03	675.38	23.26	31.82	643.59	20.23	34.99	753.72	21.54	11	13	15
8	HIMACHAL PRADESH	11.04	485.54	43.98	11.06	473.28	42.79	11.24	481.94	42.88	17	14	2
9	JAMMU & KASHMIR	3.58	88.09	24.61	3.56	92.55	26.00	2.28	52.96	23.23	22	21	12
10	JHARKHAND	18.16	230.19	12.68	19.75	231.46	11.72	20.11	265.26	13.19	14	16	21
11	KARNATAKA	60.98	2046.14	33.55	60.45	1916.86	31.71	64.25	2081.59	32.40	3	3	4
12	KERALA	3.12	58.80	18.85	0.27	3.49	12.93	0.64	12.61	19.70	27	25	17
13	MADHYA PRADESH	73.70	2285.90	31.02	95.40	2719.57	28.51	84.53	2419.28	28.62	2	2	8
14	MAHARASHTRA	44.24	976.58	22.07	50.71	1124.89	22.18	45.50	1086.56	23.88	8	9	11
15	MANIPUR	3.06	31.61	10.33	17.64	65.76	3.73	3.15	33.72	10.70	20	23	23
16	MEGHALAYA	2.15	34.02	15.82	2.16	34.50	15.97	2.20	35.51	16.14	23	22	19
17	MIZORAM	1.09	10.20	9.36	1.29	12.85	9.96	1.47	11.87	8.07	25	26	26
18	NAGALAND	2.87	20.10	7.00	3.10	22.16	7.15	3.12	22.47	7.20	21	24	27
19	ODISHA	90.91	1290.99	14.20	90.99	1311.21	14.41	91.01	1312.07	14.42	1	5	20
20	PUNJAB	7.69	191.18	24.86	8.07	200.38	24.83	9.01	224.26	24.89	19	17	10
21	RAJASTHAN	20.51	83.29	4.06	20.37	90.52	4.44	18.12	88.73	4.90	16	19	28
22	SIKKIM	0.55	4.25	7.73	0.53	4.08	7.70	0.98	8.03	8.19	26	27	25
23	TAMIL NADU	29.80	645.70	21.67	26.34	629.16	23.89	29.08	887.08	30.50	12	11	6
24	TELANGANA	57.97	1475.00	25.44	37.97	520.47	13.71	41.48	1171.50	28.24	10	7	9
25	TRIPURA	1.81	53.81	29.73	1.83	57.33	31.33	1.82	56.50	31.04	24	20	5
26	UTTAR PRADESH	20.75	819.37	39.49	20.99	831.51	39.61	21.24	841.61	39.62	13	12	3
27	UTTARAKHAND	8.55	93.22	10.90	8.63	94.01	10.89	9.20	103.85	11.29	18	18	22
28	WEST BENGAL	57.17	1204.43	21.07	57.35	1233.03	21.50	57.46	1265.25	22.02	6	6	13

State-wise Area and Production of Potato

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	ANDHRA PRADESH	2.61	38.86	14.89	2.85	49.11	17.23	3.93	68.29	17.38	22	21	13
2	ARUNCHAL PRADESH	0.76	5.65	7.43	NA	NA	-	0.00	0.00	-	27	27	-
3	ASSAM	104.83	1037.26	9.89	106.44	777.83	7.31	102.87	720.97	7.01	6	8	25
4	BIHAR	319.13	6345.52	19.88	320.48	6377.71	19.90	304.78	7740.79	25.40	3	3	5
5	CHHATTISGARH	41.95	644.83	15.37	44.08	678.57	15.39	44.87	694.61	15.48	9	9	14
6	GUJARAT	112.40	3549.38	31.58	122.53	3797.82	31.00	133.29	3806.95	28.56	5	4	2
7	HARYANA	34.27	853.81	24.91	34.53	896.95	25.98	34.72	897.58	25.85	11	7	4
8	HIMACHAL PRADESH	18.02	183.25	10.17	21.08	202.44	9.60	15.88	198.66	12.51	16	16	21
9	JAMMU & KASHMIR	6.91	127.24	18.41	5.87	130.84	22.29	5.17	110.24	21.32	20	19	9
10	JHARKHAND	44.93	627.01	13.96	52.73	668.66	12.68	48.21	690.23	14.32	8	10	17
11	KARNATAKA	33.15	455.45	13.74	32.36	507.64	15.69	35.53	509.48	14.34	10	11	16
12	KERALA	1.34	17.92	13.37	0.36	5.30	14.72	0.50	7.50	15.00	25	25	15
13	MADHYA PRADESH	141.05	3161.00	22.41	162.27	3461.09	21.33	136.29	3144.64	23.07	4	5	8
14	MAHARASHTRA	12.50	251.46	20.12	20.80	536.62	25.80	11.09	259.22	23.37	18	15	7
15	MEGHALAYA	18.56	183.82	9.90	18.90	193.68	10.25	18.92	187.95	9.93	15	17	24
16	MIZORAM	0.13	1.44	11.08	0.10	1.00	10.00	0.09	0.93	10.33	26	26	23
17	NAGALAND	4.67	60.94	13.05	4.91	65.59	13.36	4.92	65.02	13.22	21	23	19
18	ODISHA	25.18	278.75	11.07	25.19	302.22	12.00	25.09	298.06	11.88	13	13	22
19	PUNJAB	92.36	2385.26	25.83	97.57	2423.00	24.83	98.52	2571.04	26.10	7	6	3
20	RAJASTHAN	14.32	229.83	16.05	14.55	234.55	16.12	13.82	278.52	20.15	17	14	10
21	SIKKIM	10.94	53.55	4.89	10.94	53.51	4.89	19.14	89.91	4.70	14	20	26
22	TAMIL NADU	3.98	72.23	18.15	6.45	92.73	14.38	3.51	67.66	19.28	23	22	11
23	TELANGANA	4.29	71.63	16.70	3.23	32.78	10.15	3.35	42.44	12.67	24	24	20
24	TRIPURA	7.68	128.51	16.73	7.95	143.58	18.06	7.99	144.53	18.09	19	18	12
25	UTTAR PRADESH	607.32	13851.76	22.81	614.35	15543.00	25.30	614.78	15555.53	25.30	1	1	6
26	UTTARAKHAND	25.89	358.24	13.84	26.04	360.37	13.84	26.31	362.16	13.77	12	12	18
27	WEST BENGAL	427.00	8427.00	19.74	422.00	11052.60	26.19	427.50	12782.50	29.90	2	2	1

State-wise Area and Production of Peas

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	ANDHRA PRADESH	0.01	0.07	7.00	0.46	17.48	38.00	0.01	0.08	8.00	26	26	15
2	ARUNCHAL PRADESH	0.04	0.04	1.00	0.05	0.08	1.60	0.07	0.14	2.00	25	25	24
3	ASSAM	30.81	25.71	0.83	28.68	26.31	0.92	30.97	28.87	0.93	4	16	25
4	BIHAR	10.40	65.70	6.32	10.54	64.24	6.09	9.66	57.77	5.98	12	11	19
5	CHHATTISGARH	9.97	119.46	11.98	10.06	123.78	12.30	11.31	137.16	12.13	11	7	5
6	HARYANA	14.28	111.08	7.78	14.04	114.46	8.15	15.56	135.15	8.69	8	8	14
7	HIMACHAL PRADESH	23.57	276.36	11.73	23.97	291.04	12.14	24.37	294.96	12.10	5	5	6
8	JAMMU & KASHMIR	2.79	58.08	20.82	1.68	22.64	13.48	2.38	30.82	12.95	17	14	3
9	JHARKHAND	13.85	192.21	13.88	15.19	341.88	22.51	15.73	347.14	22.07	7	4	1
10	KARNATAKA	1.54	20.37	13.23	1.76	22.99	13.06	1.85	23.44	12.67	19	17	4
11	KERALA	NA	NA	-	0.68	2.54	3.74	2.27	21.90	9.65	18	18	12
12	MADHYA PRADESH	69.70	707.46	10.15	95.21	957.60	10.06	94.99	961.55	10.12	2	2	10
13	MAHARASHTRA	3.83	16.85	4.40	4.23	59.20	14.00	3.06	30.60	10.00	16	15	11
14	MANIPUR	8.05	82.45	10.24	7.88	80.85	10.26	8.13	84.32	10.37	13	10	9
15	MIZORAM	0.52	2.31	4.44	0.50	2.29	4.58	0.50	2.29	4.58	22	22	20
16	NAGALAND	1.54	9.13	5.93	1.65	10.03	6.08	1.72	10.44	6.07	20	20	18
17	ODISHA	5.50	49.38	8.98	5.50	49.41	8.98	5.59	50.22	8.98	14	12	13
18	PUNJAB	31.30	323.16	10.32	35.38	366.43	10.36	37.62	394.00	10.47	3	3	8
19	RAJASTHAN	14.22	31.28	2.20	13.83	36.38	2.63	12.92	33.36	2.58	10	13	23
20	SIKKIM	2.05	8.85	4.32	2.05	8.85	4.32	4.10	17.70	4.32	15	19	21
21	TAMIL NADU	0.12	1.69	14.08	0.37	5.00	13.51	0.12	1.96	16.33	24	23	2
22	TELANGANA	NA	NA	-	0.22	0.15	0.68	0.20	0.16	0.80	23	24	26
23	TRIPURA	0.62	2.48	4.00	0.62	2.45	3.95	0.62	2.46	3.97	21	21	22
24	UTTAR PRADESH	218.55	2481.07	11.35	220.73	2508.36	11.36	221.00	2511.38	11.36	1	1	7
25	UTTARAKHAND	11.82	83.01	7.02	12.58	87.81	6.98	13.09	93.40	7.14	9	9	16
26	WEST BENGAL	22.04	135.44	6.15	22.10	136.02	6.15	22.15	144.25	6.51	6	6	17

Note: Productivity is calculated as Production divided by Area.

Source : Horticulture Statistics Division, Department of Agriculture, Coopn & Farmers Welfare.

State-wise Area and Production of Garlic

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	ARUNACHAL PRADESH	0.03	0.01	0.33	0.03	0.01	0.33	0.03	0.01	0.33	23	22	23
2	ASSAM	10.39	76.95	7.41	29.71	56.01	1.89	10.35	61.61	5.95	6	6	6
3	BIHAR	4.25	4.00	0.94	1.95	2.94	1.51	1.69	2.56	1.51	13	16	17
4	CHHATTISGARH	1.34	3.60	2.69	1.30	3.50	2.69	1.23	3.45	2.80	15	14	15
5	GUJARAT	40.60	318.20	7.84	10.10	79.15	7.84	19.08	151.01	7.91	4	4	4
6	HARYANA	4.44	35.83	8.07	5.00	32.00	6.40	5.00	32.00	6.40	9	9	5
7	HIMACHAL PRADESH	4.57	9.35	2.05	4.43	7.72	1.74	4.95	8.49	1.72	10	11	16
8	JAMMU & KASHMIR	0.71	0.56	0.79	0.71	0.56	0.79	0.74	0.61	0.82	16	19	21
9	KARNATAKA	4.73	5.19	1.10	4.66	6.28	1.35	6.53	5.42	0.83	7	12	20
10	KERALA	0.06	0.37	6.17	0.76	0.37	0.49	0.07	0.40	5.71	22	20	8
11	MADHYA PRADESH	81.17	424.50	5.23	92.50	405.00	4.38	92.50	405.00	4.38	2	2	12
12	MAHARASHTRA	2.05	12.69	6.19	2.45	14.31	5.84	2.58	13.96	5.41	12	10	9
13	MANIPUR	0.17	0.00	0.00	0.17	NA	-	0.17	0.00	-	21	24	-
14	MEGHALAYA	0.28	1.11	3.96	0.28	1.11	3.96	0.28	1.11	3.96	19	18	13
15	MIZORAM	0.02	0.01	0.50	0.02	0.01	0.50	0.02	0.01	0.50	24	22	22
16	NAGALAND	0.29	2.89	9.97	0.29	2.98	10.28	0.30	3.06	10.20	18	15	2
17	ODISHA	10.90	35.50	3.26	10.90	35.50	3.26	10.90	35.50	3.26	5	8	14
18	PUNJAB	6.46	73.74	11.41	6.46	73.74	11.41	6.46	73.74	11.41	8	5	1
19	RAJASTHAN	69.10	377.49	5.46	107.97	727.50	6.74	112.89	582.08	5.16	1	1	11
20	TAMIL NADU	0.48	2.72	5.67	0.51	2.93	5.75	0.60	3.46	5.77	17	13	7
21	TELANGANA	0.29	1.01	3.48	0.29	1.01	3.48	0.19	0.27	1.42	20	21	19
22	UTTAR PRADESH	33.60	193.62	5.76	35.25	202.30	5.74	35.22	188.61	5.36	3	3	10
23	Uttarakhand	1.29	1.93	1.50	1.49	2.17	1.46	1.49	2.17	1.46	14	17	18
24	WEST BENGAL	3.73	36.07	9.67	3.70	36.10	9.76	3.70	36.10	9.76	11	7	3

State-wise Area and Production of Ginger

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	ANDHRA PRADESH	0.36	0.96	2.67	0.51	1.77	3.47	0.51	1.77	3.47	21	23	1
2	ARNACHAL PRADESH	18.55	56.58	3.05	7.65	56.58	7.40	7.65	56.58	0.14	10	9	19
3	ASSAM	NA	163.13	-	18.73	166.54	8.89	18.79	167.39	0.11	2	1	20
4	BIHAR	0.56	0.84	1.50	0.32	0.59	1.84	0.26	0.49	0.44	24	24	7
5	CHHATTISGARH	1.74	2.14	1.23	1.84	2.21	1.20	1.93	2.36	0.87	16	22	2
6	GUJARAT	4.68	102.58	21.92	6.50	100.50	15.46	4.87	108.25	0.05	11	4	26
7	HARYANA	0.45	5.65	12.56	0.50	6.00	12.00	0.50	6.00	12.00	22	18	24
8	HIMACHAL PRADESH	2.27	14.58	6.42	2.28	14.50	6.36	2.51	15.95	0.17	14	15	14
9	JAMMU & KASHMIR	0.02	0.03	1.50	0.02	0.03	1.50	0.02	0.03	0.67	26	26	3
10	KARNATAKA	30.79	89.44	2.90	29.29	109.34	3.73	23.09	58.39	0.21	1	8	11
11	KERALA	4.88	21.96	4.50	4.98	21.27	4.27	4.37	86.27	0.21	13	5	12
12	MADHYA PRADESH	10.91	18.86	1.73	12.50	20.20	1.62	12.50	20.20	0.62	4	13	5
13	MAHARASHTRA	11.67	209.41	17.94	8.53	125.49	14.71	9.45	140.60	0.08	8	2	25
14	MANIPUR	2.40	3.84	1.60	2.40	3.84	1.60	2.40	3.84	0.63	15	20	4
15	MEGHALAYA	9.85	65.43	6.64	9.94	66.37	6.68	9.94	66.20	0.15	7	6	16
16	MIZORAM	8.07	31.68	3.93	8.21	59.99	7.31	8.55	60.13	0.14	9	7	18
17	NAGALAND	3.74	55.23	14.77	4.84	48.21	9.96	4.87	48.65	0.10	11	11	21
18	ODISHA	15.84	35.00	2.21	16.57	31.99	1.93	16.57	31.99	0.52	3	12	6
19	RAJASTHAN	0.13	0.29	2.23	0.11	0.27	2.45	0.11	0.27	0.41	25	25	8
20	SIKKIM	10.03	54.99	5.48	12.30	55.90	4.54	12.30	55.90	0.22	5	10	10
21	TAMIL NADU	0.31	2.18	7.03	0.34	2.29	6.74	0.39	2.64	0.17	23	21	15
22	TELANGANA	1.83	11.90	6.50	2.50	12.34	4.94	1.84	12.98	0.15	18	17	17
23	TRIPURA	1.80	7.60	4.22	1.80	7.60	4.22	1.88	15.74	0.25	17	16	9
24	UTTAR PRADESH	0.94	4.35	4.63	0.94	4.35	4.63	0.88	4.17	0.20	20	19	13
25	UTTARAKHAND	2.06	19.60	9.51	1.81	19.07	10.54	1.81	19.07	0.09	19	14	22
26	WEST BENGAL	11.89	129.02	10.85	11.99	130.40	10.88	11.99	130.40	0.09	6	3	23

State-wise Area and Production of Turmeric

(Area in '000 Ha, Production in '000 MT)

No.	STATES	2015-16			2016-17			2017-18			Rank among Indian States in 2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1	ANDHRA PRADESH	17.02	121.12	7.12	19.18	79.73	4.16	19.18	79.73	4.16	4	4	11
2	ARUNACHAL PRADESH	0.80	3.84	4.80	0.80	3.84	4.80	0.80	3.84	4.80	23	20	10
3	ASSAM	16.89	16.75	0.99	17.06	17.03	1.00	17.11	19.17	1.12	6	12	22
4	BIHAR	3.00	3.00	1.00	2.44	2.63	1.08	2.72	2.83	1.04	13	22	23
5	CHHATTISGARH	1.10	0.96	0.87	1.08	1.00	0.93	1.15	0.96	0.83	20	24	26
6	GUJARAT	3.55	69.25	19.51	4.10	65.50	15.98	4.01	78.91	19.68	11	5	1
7	HARYANA	1.33	23.84	17.92	1.50	22.00	14.67	1.50	22.00	14.67	18	11	2
8	HIMACHAL PRADESH	0.26	0.43	1.65	0.20	0.11	0.55	0.23	0.12	0.52	26	26	27
9	JAMMU & KASHMIR	0.01	0.01	1.00	0.01	0.01	1.00	0.01	0.01	1.00	27	27	24
10	KARNATAKA	12.82	76.78	5.99	14.99	76.49	5.10	14.99	76.49	5.10	8	6	9
11	KERALA	2.53	6.50	2.57	2.58	6.83	2.65	2.78	8.82	3.17	12	17	16
12	MADHYA PRADESH	1.42	1.61	1.13	1.65	1.61	0.98	10.95	39.05	3.57	9	9	14
13	MAHARASHTRA	9.61	136.87	14.24	10.71	177.85	16.61	15.88	190.09	11.97	7	2	4
14	MANIPUR	1.40	16.40	11.71	1.40	15.40	11.00	1.40	15.40	11.00	19	14	5
15	MEGHALAYA	2.54	15.86	6.24	2.61	16.63	6.37	2.65	16.50	6.23	14	13	6
16	MIZORAM	7.20	27.82	3.86	7.20	27.82	3.86	7.74	29.82	3.85	10	10	13
17	NAGALAND	0.69	9.12	13.22	0.70	10.72	15.31	0.71	10.19	14.35	24	15	3
18	ODISHA	2.48	30.00	12.10	27.86	54.50	1.96	27.86	54.50	1.96	3	7	20
19	PUNJAB	0.90	3.19	3.54	0.90	3.19	3.54	0.90	3.19	3.54	22	21	15
20	RAJASTHAN	0.14	0.37	2.64	0.19	0.64	3.37	0.52	0.47	0.90	25	25	25
21	SIKKIM	1.95	5.68	2.91	1.95	5.68	2.91	1.95	5.68	2.91	16	19	18
22	TAMIL NADU	34.73	132.40	3.81	29.31	112.59	3.84	30.00	116.00	3.87	2	3	12
23	TELANGANA	42.54	184.29	4.33	51.00	294.00	5.76	50.15	294.56	5.87	1	1	8
24	TRIPURA	1.30	6.59	5.07	1.30	6.59	5.07	1.66	10.08	6.07	17	16	7
25	UTTAR PRADESH	2.00	6.00	3.00	2.00	6.00	3.00	2.00	6.00	3.00	15	18	17
26	UTTARAKHAND	0.90	1.74	1.93	0.98	1.74	1.78	0.98	1.74	1.78	21	23	21
27	WEST BENGAL	16.71	42.41	2.54	18.00	45.50	2.53	18.00	45.50	2.53	5	8	19

Note: Productivity is calculated as Production divided by Area.

Source : Horticulture Statistics Division, Department of Agriculture, Coopn & Farmers Welfare.

SUMMARY

States	Fruits			Vegetables			Spices			Flowers		
	Area (Rank)	Production (Rank)	Productivity (Rank)	Area (Rank)	Production (Rank)	Productivity (Rank)	Area (Rank)	Production (Rank)	Productivity (Rank)	Area (Rank)	Production (Rank)	Productivity (Rank)
ANDHRA PRADESH	650.5 (2)	15215.9 (1)	23.39 (1)	243 (14)	6908.3 (11)	28.43 (1)	246.4 (5)	1099.8 (3)	4.46 (8)	25.7 (6)	429 (2)	16.69 (3)
ARUNACHAL PRADESH	48.1 (24)	125.7 (27)	2.61 (27)	2.6 (28)	16.6 (28)	6.38 (26)	11.4 (20)	68.7 (18)	6.03 (3)	0 (26)	0 (24)	0 (23)
ASSAM	147.3 (17)	2123.6 (13)	14.42 (11)	300.2 (11)	3292.9 (15)	10.97 (21)	101.6 (11)	302 (9)	2.97 (12)	5.1 (14)	33.9 (10)	6.65 (10)
BIHAR	296.6 (10)	5117.1 (8)	17.25 (7)	824.6 (4)	15863.2 (4)	19.24 (12)	8.3 (25)	10.5 (25)	1.27 (22)	0.5 (21)	5.5 (19)	11 (6)
CHHATISGARH	229.7 (14)	2666.2 (10)	11.61 (14)	499.4 (8)	7003.2 (10)	14.02 (17)	11.4 (20)	9 (26)	0.79 (25)	13.2 (10)	47.5 (8)	3.6 (16)
GUJARAT	422.4 (5)	8996 (4)	21.3 (3)	613.1 (7)	12254.3 (6)	19.99 (7)	567 (2)	980.4 (4)	1.73 (20)	20.4 (8)	152.2 (5)	7.46 (8)
HARYANA	64 (20)	793.4 (18)	12.4 (13)	447 (10)	7151.7 (9)	16 (16)	17.1 (18)	77.8 (17)	4.55 (7)	5.5 (12)	56.7 (7)	10.31 (7)
HIMACHAL PRADESH	230.9 (13)	565.3 (21)	2.45 (28)	89.3 (20)	1811.8 (18)	20.29 (5)	8.6 (24)	24.9 (23)	2.9 (13)	0.6 (20)	12.3 (16)	20.5 (2)
JAMMU & KASHMIR	327.4 (8)	2355.2 (12)	7.19 (21)	56.3 (21)	1226 (20)	21.78 (4)	5.1 (27)	1 (27)	0.2 (27)	49.6 (1)	29.7 (11)	0.6 (22)
JHARKHAND	104.3 (18)	1081.7 (17)	10.37 (16)	289.2 (12)	3475.2 (14)	12.02 (20)	0 (28)	0 (28)	0 (28)	0.8 (19)	4.5 (20)	5.63 (11)
KARNATAKA	431.6 (4)	7133.9 (6)	16.53 (8)	483.2 (9)	8394.1 (8)	17.37 (13)	245.5 (6)	499.7 (6)	2.04 (19)	31.4 (4)	231 (4)	7.36 (9)
KERALA	309.5 (9)	2045.7 (14)	6.61 (23)	110.8 (18)	2516.5 (17)	22.71 (3)	167.7 (7)	204.7 (11)	1.22 (24)	38.2 (2)	0.1 (23)	0 (23)
MADHYA PRADESH	354.1 (6)	7416.9 (5)	20.95 (5)	889.7 (3)	17545.5 (3)	19.72 (10)	540.8 (3)	1191.8 (1)	2.2 (16)	19.8 (9)	245.5 (3)	12.4 (5)
MAHARASHTRA	753.2 (1)	11728.7 (2)	15.57 (9)	726.2 (5)	12306.7 (5)	16.95 (15)	34.4 (13)	370.7 (7)	10.78 (1)	5.5 (12)	29.1 (12)	5.29 (12)
MANIPUR	47.6 (25)	455.6 (23)	9.57 (20)	45.3 (25)	342.1 (25)	7.55 (25)	10.5 (22)	23.1 (24)	2.2 (16)	0.2 (22)	0.5 (22)	2.5 (18)
MEGHALAYA	32.8 (27)	316.5 (26)	9.65 (18)	49.1 (22)	519.7 (24)	10.58 (22)	18.7 (17)	92 (16)	4.92 (5)	0 (26)	0 (24)	0 (23)
MIZORAM	63.2 (21)	340.5 (25)	5.39 (24)	36.2 (27)	171 (27)	4.72 (28)	27.7 (16)	100.9 (14)	3.64 (9)	0.2 (22)	0 (24)	0 (23)
NAGALAND	39.5 (26)	380.5 (24)	9.63 (19)	46.2 (23)	561.6 (23)	12.16 (19)	9.9 (23)	64.8 (20)	6.55 (2)	0.1 (25)	0 (24)	0 (23)
ODISHA	340.5 (7)	2402.3 (11)	7.06 (22)	639.7 (6)	8766.8 (7)	13.7 (18)	146.6 (8)	202 (12)	1.38 (21)	6.6 (11)	24.9 (13)	3.77 (15)
PUNJAB	90.6 (19)	1908.8 (16)	21.07 (4)	244.4 (13)	4919.7 (13)	20.13 (6)	31.3 (15)	98.9 (15)	3.16 (10)	2.1 (17)	10.7 (17)	5.1 (13)
RAJASTHAN	57.2 (22)	762 (19)	13.32 (12)	163.2 (16)	1674 (19)	10.26 (23)	918.9 (1)	1144.4 (2)	1.25 (23)	3.5 (16)	7.1 (18)	2.03 (20)
SIKKIM	19.4 (28)	54.9 (28)	2.83 (26)	38.4 (26)	229.1 (26)	5.97 (27)	32.3 (14)	66.6 (19)	2.06 (18)	0.2 (22)	16.5 (15)	82.5 (1)
TAMIL NADU	291.4 (11)	5680.5 (7)	19.49 (6)	241 (15)	6396 (12)	26.54 (2)	57 (12)	171 (13)	3 (11)	34.2 (3)	482.5 (1)	14.11 (4)
TELANGANA	167.1 (16)	1939.4 (15)	11.61 (14)	139.3 (17)	2753.8 (16)	19.77 (9)	130.3 (9)	663 (5)	5.09 (4)	3.7 (15)	17.9 (14)	4.84 (14)
TRIPURA	53.8 (23)	547.5 (22)	10.18 (17)	45.9 (24)	795.7 (22)	17.34 (14)	6.6 (26)	32.4 (22)	4.91 (6)	0 (26)	0 (24)	0 (23)
UTTAR PRADESH	476.6 (3)	10539.8 (3)	22.11 (2)	1457.2 (1)	28316.4 (1)	19.43 (11)	386.9 (4)	248.7 (10)	0.64 (26)	21.2 (7)	46.4 (9)	2.19 (19)
UTTARAKHAND	178.7 (15)	669.9 (20)	3.75 (25)	100.1 (19)	989.4 (21)	9.88 (24)	14.6 (19)	36.6 (21)	2.51 (15)	1.5 (18)	2.5 (21)	1.67 (21)
WEST BENGAL	261 (12)	3850.6 (9)	14.75 (10)	1400.3 (2)	27695.3 (2)	19.78 (8)	119.6 (10)	334.4 (8)	2.8 (14)	26.8 (5)	74.9 (6)	2.79 (17)
OTHERS	17.3	143.4	-	38.2	497.7	-	2	4.1	-	7.3	1.2	-
All India Total	6,506.20	97,357.50	-	10,259.10	184,394.30	-	3,877.90	8,123.90	-	324.00	1,962.00	-

Source : Horticulture Statistics Division, Department of Agriculture, Coopn & Farmers Welfare.

Attachment 3.4.2 List of Government Nurseries

No.	District	Nursery	Year of establish ment	above Sea level (m)	Area (ha)	
					Total	in use
1	Almora	State Garden Chobatiya	1869	2200	106.91	
2	Almora	State Drug (medicinal) Farm Sooni	1976	1676	10	
3	Almora	State Nursery Shetlakhet	1972-73	1760	4.8	4.04
4	Almora	State Nursery Nogaun	1977-78	990	2	2
5	Almora	State Nursery Patoriya	1975-76	2180	44.19	13.6
6	Almora	State Nursery Gananath	1972-73	1000	2	0.9
7	Almora	State Nursery Bhasodi	1972-73	1220	7	2.9
8	Almora	State Nursery Garudabaaj	1968-69	1850	17.6	5.8
9	Almora	State Gardan Dunagiri	1949	2200	103.6	
10	Almora	State Gardan Binta	1973-74	1260	2	1.58
11	Almora	State Gardan Dool	1972-73	1700	2	1.58
12	Bageshwer	State Nursery Bageshwer	1949-50	900	2.17	1.95
13	Bageshwer	State Nursery Karmi	1972-73	2670	27.88	10
14	Chamoli	State Primary Gardan Tharali	1964-65	1700	1.7	1.23
15	Chamoli	State Primary Gardan Narayanbagar	1964-65	1100	2.1	1
16	Chamoli	State Primary Gardan Karanparyag	1964-65	760	1.64	0.5
17	Chamoli	State Gardan Ramni	1975-76	2350	10.34	6.7
18	Chamoli	State Gardan Patoli	1978-79	1800	6	5
19	Chamoli	State Gardan Subhai	1956-57	2700	6	0.5
20	Chamoli	State Gardan Singhdhar	1945-46	1875	3.64	0.5
21	Chamoli	State Gardan Gairshan	1964-65	1600	0.36	0.16
22	Chamoli	State Nursery Bacheer	1963-64	1800	2.29	0.5
23	Chamoli	State Patato seed production field Koti	1965-66	3000	20	1.25
24	Chamoli	State Gardan Tunji	1964-65	1900	2	0.5
25	Chamoli	State Gardan Parsari	1955-56	2400	21.5	
26	Champawat	State Nursery Patan	1969-70	1982	4	2.57
27	Champawat	State Nursery Khateda	1975-76	1980	13.5	5.5
28	Champawat	State Nursery Mudiyani	1977	1830	12	8.6
29	Champawat	State Vegetable Seed production field Himalichod	1979-80	1665	8.78	5.51
30	Champawat	State Gardan Champawat	1949	1830	3.2	2.7
31	Champawat	State Primary Gardan Goshni	1966-67	1932	2.66	1.54
32	Dehradun	State Patato Production field Gangalahri		300	17.06	5.78
33	Dehradun	State Gardan Sarkit house	1910	700	7.14	5.6
34	Dehradun	State Gardan Barootha	1974-75	1500-2000	6.8	5
35	Dehradun	State Gardan Dhakrani	1976	900	5.2	4
36	Dehradun	State Gardan Logi Masori	1910	2400	2.29	
37	Dehradun	State Gardan Bhaniyawal	1976	500	0.6	0.5
38	Dehradun	State Gardan Nagau chakrata	1955-56	1800	13.8	2.5
39	Dehradun	State Gardan chosal	1957	2200	2.96	
40	Haridwar	State Industrial expansion Sikandarpur		1000	5.13	4.63
41	Nanital	State Primary Garden Gadgadi	1977-78	1600	12.2	6.18
42	Nanital	State Primary Garden Kaladungi	1973-74	250	5.7	4.52
43	Nanital	State Primary Garden Ramnagar	1973-74	250	1.78	1.23
44	Nanital	State Primary Garden Satbunga	1965	2000	8	7.7
45	Nanital	State Primary Garden Ramgarh	1976	1790	126.5	53
46	Nanital	State Nursery Bheemtaal	1966-67	1450	2	1
47	Nanital	State Gardan Gagar		2100	15.03	4.53
48	Nanital	State Patato production Field Bamathe	1969-70	1000	13.7	6.35
49	Nanital	State Primary Nursery Tanguda		1500	3.1.	
50	Pauri	State Primary Gardan Khirshu	1965-66	1650	9	
51	Pauri	State Primary Gardan Chamali	1976-77	1100	8.9	
52	Pauri	State Primary Gardan Pateliya	1972-73	1150	4	
53	Pauri	State Primary Gardan Dadadamrada	1973-74	1200	3.32	
54	Pauri	State Primary Gardan Kumbhichod	1955-56	1000	1.28	
55	Pauri	State Gardan Chameth	1974-75	1150	6.2	
56	Pauri	State Gardan Kotdwar			3	
57	Pauri	State Gardan Khandusan	1967-68	1850	1.6	1.6
58	Pauri	State Gardan Khaprola	1971-72	1750	2	1.7

No.	District	Nursery	Year of establish ment	above Sea level (m)	Area (ha)	
					Total	in use
59	Pithoragarh	State Primary Gardan Dedihaat	1961-62	2000	2	0.4
60	Pithoragarh	State Primary Gardan Balvakoot	1964-65	1000	2.3	1.8
61	Pithoragarh	State Primary Gardan Kanalicheena	1963-64	1900	2	1.77
62	Pithoragarh	State Primary Gardan Gagolihaat	1964-65	1800	2.5	2
63	Pithoragarh	State Primary Gardan Barinaag	1964-65	1900	2.2	1.6
64	Pithoragarh	State Primary Gardan Kuati	1955-56	1100	8	6
65	Pithoragarh	State Primary Gardan Vishad	1946	1900	11.68	8.2
66	Pithoragarh	State Primary Gardan Bhatka	1956-57	2450	23.2	15
67	Pithoragarh	State Primary Gardan Sandev	1974-75	2000	10	4
68	Pithoragarh	State Patato production Field Balati	1974-75	2600	40	20
69	Pithoragarh	State Nursery Thal	1961-62	1200	1.35	1.25
70	Pithoragarh	State Nursery Tiksan	1963-63	2325	2	1.5
71	Pithoragarh	State Nursery Badalu	1961-62	1200	3.1	1.85
72	Pithoragarh	State Primary Gardan Bhatyuda	1964-65	1800	4.07	3.4
73	Pithoragarh	State Nursery Munakot	1969-70	1600	2.1	1.42
74	Rudarparyag	State Gardan Augstmuni	1964-65	1100	2	1
75	Rudarparyag	Satae Nursery Ukimath	1964-65	1400	2	1.7
76	Rudarparyag	State Nursery Shyari	1977-78	1500	6.25	2.5
77	Tehri	State Reproduction Gardan Dhanorti	1964-65	1600	6.9	6.6
78	Tehri	State Gardan Magra	1959	1700-2200	44	9.2
79	Tehri	State Gardan Khand Chemedra		840	2.66	2.5
80	Tehri	State Gardan Partapnagar	1955-56	2150	1	0.9
81	Tehri	State Patato Field Dhanorti	1965-66	1850	6.4	6.04
82	Tehri	State Gardan Koldiya	1976-77	2000	9.6	
83	U.S. Nagar	State Nursery (Patato)	1974-75	213	12	10
84	U.S. Nagar	State Nursery Rudrapur	1970-71	210	19.03	15.63
85	U.S. Nagar	State Nursery Sitarganj	1959-60	205	5.74	4.04
86	U.S. Nagar	State Nursery Kashipur	1974-75	213	8	5.35
87	Uttarkashi	State Patato field Dwari	1975-76	2000	20	4
88	Uttarkashi	State Nursery Jarmola	1951-52	1800	9.3	7.08
89	Uttarkashi	Satae Nursery Nogaun	1964-65	435	4.8	
90	Uttarkashi	State Gardan Rethal	1957-58	2330	30	
91	Uttarkashi	State Gardan Dunda		1500	4.8	3.05
92	Uttarkashi	State Gardan Dharoli	1963-64	1980	4.5	1.47
93	Uttarkashi	State Gardan Balcha	1963-64	1980		

Source: UKDHFP

Attachment 3.5.1 Traders in APMC Mandies in Uttarakhand

The JICA Survey Team, through its Indian staff, carried out an interview survey to market traders who are doing business in public markets (APMC Mandies) in Uttarakhand in July 2021. The survey was made in Nainital district and Dehradun district where are leading hubs of horticultural produce distribution in Uttarakhand. This report discusses survey findings as shown below.

1. Market Traders Interviewed (Informants)

A series of interviews was made to 10 informants, 5 from each district, as shown in Table 1.

Table 1 Market Traders Interviewed

No	Name of Company	Location	Commodity
1	Mohan Singh Jeevan Center	Haldwani Mandi, Nainital	Vegetables
2	Kailash Joshi	Haldwani Mandi, Nainital	Vegetables
3	Manoj Company	Haldwani Mandi, Nainital	Vegetables
4	KK Fruits	Haldwani Mandi, Nainital	Fruits'
5	Kanhaiya Fruit Company	Haldwani Mandi, Nainital	Fruits'
6	Kohinoor Fruit Company	Sabji Mandi, Niranjanpur Dehradun	Fruits'
7	Sunil Kumar and company	Sabji Mandi, Niranjanpur Dehradun	Vegetables
8	Fareed and Company	Sabji Mandi, Niranjanpur Dehradun	Vegetables
9	Akash Traders	New Sabji Mandi Niranjanpur, Dehradun	Fruits'
10	Shankar Sabji Bhandar	Dehradun	Vegetables

Source: Market Survey, The JICA Survey Team, July 2021

2. Business Activity

Table 2 shows major business activity of the informants.

Table 2 Business Activity of Informants

No	Business Activities	Vegetables			Fruits			Total		
		Yes	No	Total	Yes	No	Total	Yes	No	Total
1	Buying farm produce and selling them	6	0	6	4	0	4	10	0	10
2	Transporting farm produce	1	5	6	4	0	4	5	5	10
3	Organizing an auction of farm produce	6	0	6	4	0	4	10	0	10
4	Grading/sorting/packing farm produce before marketing	6	0	6	4	0	4	10	0	10
5	Storing farm produce for a certain period	6	0	6	4	0	4	10	0	10
6	Processing farm produce (dry, juice, puree, jam, pickles, etc.)	0	6	6	0	4	4	0	10	10
7	Providing market information to farmers (prices, quality needs, etc.)	0	6	6	0	4	4	0	10	10
8	Providing farmers technical assistance to improve crop productivity and quality	1	5	6	1	3	4	2	8	10
9	Providing or arranging farm inputs to farmers	0	6	6	0	4	4	0	10	10
10	Providing or arranging advance payments or a credit to farmers	6	0	6	3	1	4	9	1	10

Source: Market Survey, The JICA Survey Team, July 2021

All informants doing the following business.

- Buying and selling farm produce
- Organizing an auction
- Grading/sorting/packing farm produce before marketing

- Storing farm produce for a certain period

It is reported that most of market traders in APMC Mandies in Uttarakhand are involved not only in organizing an auction, but also in trading as a wholesaler. Such market traders are called as “wholesaler-cum-commission agents”. The reported reality is confirmed by the survey. It is interesting that most of the informants marketing vegetables are not involved in transporting the produce, while all informants marketing fruits are involved in.

All informants except one informant provide advance payments or a credit to farmers though other convenience, i.e., market information, technical assistance and farm inputs arrangements are almost not provided. Such reality implies that the relationship between the informants and farmers might be a patron-client relationship rather than an equal partnership. Transformation from the patron-client relationship to an equal partnership should be a critical challenge to vitalize the agricultural produce supply chain.

3. Procurement

The informants mainly procure horticultural produce directly from producers or from other APMC Mandies in or outside of Uttarakhand as shown in Table 3. The informants mainly marketing vegetables procure much directly from producers, while the informants mainly marketing fruits procure much from other APMC Mandies. Aggregators (middlemen) are a subsidiary procurement source for both kinds of informants.

Table 3 Procurement of Horticultural Produce

No	Procurement Pattern	Vegetables			Fruits			Total		
		Main	Sub	No	Main	Sub	No	Main	Sub	No
1	Producers - Intermediary	5	1	0	2	2	0	7	3	0
2	Producers - Aggregators - Intermediary	2	4	0	0	4	0	2	8	0
3	Other Mandies - Traders - Intermediary	3	1	2	3	1	0	6	2	2

Source: Market Survey, The JICA Survey Team, July 2021

4. Popular Horticultural Produce

Table 4 shows popular horticultural produce among the informants.

Table 4 Popular Horticultural Produce among the Informants

Vegetables (6 informants)			Fruits (4 informants)		
Crops	Number	Reason	Crops	Number	Reason
Beans	4	Good demand always, Easy to sell out	Apples	3	Good demand always
Bottle Guard	1	Easy to sell out	Banana	2	Good demand always, Economical
Cabbage	2	-	Citrus	2	Available in market for many months
Capsicum (Sweet Pepper)	4	Good demand always, Easy to sell out	Grapes	1	-
Garlic	2	Used in almost every dish	Kiwi	2	-
Leafy Veges	1	Easy to sell out	Peach	3	Easy to sell out
Onion	1	Good demand always	Plum	2	Easy to sell out
Peas	2	Good demand always	Mango	3	Popular among people

Vegetables (6 informants)			Fruits (4 informants)		
Potato	5	Good demand always, Stable price	Litchi	2	Easy to sell out
Tomato	6	Good demand always	-	-	-

Source: Market Survey, The JICA Survey Team, July 2021

The popular vegetables are tomato, potato, beans and capsicum, while the fruits are apple, peach and mango. Many informants say that those produce have a stable demand and are easy to sell out. Business stability must be the most important concern of the informants for choosing the produce to market.

5. Origin of the Produce

Table 5 shows origin of the popular horticultural produce.

Table 5 Origin of the Popular Produce

Vegetables			Fruits		
Crops	Uttarakhand (Districts)	Other States	Crops	Uttarakhand (Districts)	Other States
Beans	Nainital, Almora, Pauri Garhwal	-	Apples	Nainital, Uttarkashi	Himachal Pradesh, Jammu Kashmir
Bottle Guard	Pauri Garhwal	Uttar Pradesh	Banana	-	Uttar Pradesh, Maharashtra
Cabbage	Nainital, Almora	Uttar Pradesh	Citrus	Pithoragarh	Himachal Pradesh
Capsicum (Sweet Pepper)	Nainital, Almora, Pauri Garhwal	Himachal Pradesh	Grapes	-	Uttar Pradesh, Maharashtra
Garlic	Nainital, Tehri Garhwal	Haryana	Kiwi	Bageshwar	Delhi (imported), Himachal Pradesh
Leafy Veges	Pauri Garhwal	Uttar Pradesh	Peach	Nainital	Himachal Pradesh
Onion	Tehri Garhwal	Haryana	Plum	Nainital	Himachal Pradesh
Peas	Nainital, Almora	-	Mango	Dehradun	Uttar Pradesh, Maharashtra, Bihar
Potato	Nainital, Almora, Tehri Garhwal	Haryana, Punjab	Litchi	Nainital	Bihar
Tomato	Nainital, Almora, Pauri Garhwal, Uttarkashi	Himachal Pradesh, Maharashtra, Gujarat	-	-	-

Source: Market Survey, The JICA Survey Team, July 2021

Most of the produce are originated not only from districts in Uttarakhand, but also from other states mostly in the northern India. Apple, peach and plum are coming from Himachal Pradesh and Jammu Kashmir though Uttarakhand is famous in producing such fruits. The produce is actively transacted in accordance with various needs of various market segments in terms of season, variety, quality, etc.

6. Promising Horticultural Crops

Table 6 shows promising horticultural crops envisaged by the informants.

Table 6 Promising Horticultural Crops Envisaged by Informants

Vegetables (6 informants)			Fruits (4 informants)		
Crops	Number	Reason	Crops	Number	Reason
Beans	3	Good demand always, Easy to sell out	Apples	4	Good demand always and available in market for many months, Easy to sell out
Bottle Guard	1	Easy to sell out	Apricot	1	Easy to sell out

Vegetables (6 informants)			Fruits (4 informants)		
Cabbage	1	Good demand always	Banana	2	Good demand always and available in market for many months, Easy to sell out
Capsicum (Sweet Pepper)	3	Good demand always, Easy to sell out	Citrus	3	Good demand always and available in market for many months, Easy to sell out
Garlic	1	Used in almost every dish	Grapes	1	Easy to sell out
Ginger	1	Good demand always	Kiwi	1	Health-conscious demand
Leafy Veges	1	Easy to sell out	Peach	2	Easy to sell out
Onion	1	Good demand always	Plum	1	Easy to sell out
Peas	3	Good demand always, Available in market for many months	Mango	2	Popular among people, Available in market for 5 - 6 months
Potato	5	Good demand always, Available in market for many months	Litchi	1	Easy to sell out
Tomato	6	Good demand always, Available in market for many months	-	-	-

Source: Market Survey, The JICA Survey Team, July 2021

The promising crops are overlapped with the popular produce as shown in Table 4. It implies that most informants may have an immobile or conservative view to future trends in the horticultural produce market.

7. Major Customers

Among three (3) categories of customers, i.e., local retailers (vendors & shops), dealers (middlemen & wholesalers from various places) and holes & restaurants, major customers of the informants dealing vegetables are dealers, while the customers of the informants dealing fruits are local retailers. It is assumed that the difference may be due to the difference of major functions of both kind of informants as shown below.

<Informants dealing vegetables>

To aggregate small lots of vegetables from producers and sell them to dealers

<Informants dealing fruits>

To purchase a large lot of fruits from dealers and sell them to local retailers after breaking the lot into a small size.

8. Important Quality Factors of Horticulture Produce

1) Ordinary market (general customers)

Among five (5) quality factors, i.e., fresh/shiny, colour, shape, size and smell/aroma, fresh/shiny is the most considerable factor for all crops, while smell/aroma is the least considerable factor. Colour, shape and size are mid-level factors between them. Many informants consider that the 3 factors are more considerable to evaluate fruits quality comparing to evaluate vegetables quality.

2) High-end market (Hotels/Restaurants)

The priority order of 5 quality factors is same to the order for ordinary market, though more serious consideration is made for colour, shape and size, especially in case of fruits.

9. Difficulties in marketing of Horticultural Produce

Difficulties in marketing horticultural produce experienced by the informants are summarised in Table 7 Each informants made a comment for each popular crop.

Table 7 Difficulties in marketing of Horticultural Produce

No.	Issues	Vegetables		Fruits	
		Serious	Some-times	Serious	Some-times
1	Not fresh	0	0	0	0
2	Much damage due to rough handling	5	4	20	0
3	Improper packing	16	0	9	0
4	Not clean (not washed)	3	1	0	0
5	Not well sorted (various size, shape, maturity, etc.)	28	0	15	0
6	Mixed with foreign matter (intentionally for increasing volume/weight)	0	0	0	0
7	Small lot volume	5	2	0	0
8	Unstable supply	0	11	0	0
Total answers		28	28	20	20

Source: Market Survey, The JICA Survey Team, July 2021

Different comments were made for vegetables and fruits.

In case of vegetables, “Not well sorted” is the most serious issue claimed by the informants. The next serious issue is “Improper packing”. Then, “Much damage due to rough handling”, “Small lot volume” and “Unstable supply” are more than little issues. In case of fruits, “Much damage due to rough handling” is the most serious issue claimed by the informants. The next serious issues are ““Not well sorted” and “Improper packing”. The difference between vegetables and fruits may be caused by the different functions of the informants as discussed in “6. Major Customers”.

“Not well sorted” is the most serious issue as a whole. It implies that producers can expect an added value of their produce by expanding their activity to a primary post-harvest processing, such as sorting and packing. Increased bargaining power is, however, another important challenge for producers, if they will be able to enjoy a due share of the added value. Transformation of the patron-client relationship discussed in “2. Business Activity” into an equal partnership by empowering producers must be a critical challenge to increase their bargaining power.

It is very interesting that no informants made a claim for “Not fresh”, though “fresh/shiny” is the most considerable factor to evaluate quality of horticultural produce as discussed in “7. Important Quality Factors of Horticulture Produce”. It is probable that the informants accept actual level of “fresh/shiny” considering market circumstances at present, even though they are not fully satisfied with the actual level.

10. Post-harvest Losses

No informant exactly figures out the post-harvest losses with numerical data. Among the losses at the three (3) stages, i.e., at storage, at packing (including sorting) and at transportation, many informants consider that the losses at packing are the most serious, while the losses at storage are the least serious. Improving a primary processing (sorting & packing) would be a priority countermeasure to reduce the losses.

11. Economic Feasibility of Cold Chain

Most informants consider that a cold storage for apple and kiwi fruits could be economically feasible, while their evaluation is divided over the feasibility of peas. A cold storage for peas might have a certain economic feasibility if peas are widely distributed after refrigerating or freezing. They make a negative evaluation about economic feasibility of cold storage for other horticultural produce.

Many informants recognize economic feasibility of CA storage for apple, since CA storage is becoming popular for apple at field level. Many informants, mainly marketing fruits, make a positive evaluation about economic feasibility of CA storage for various kinds of fruits. However, it is doubtful whether the evaluation is rationale, considering the evaluation about a cold storage that recognizes economically feasibility only for apple and kiwi fruits. A CA storage needs more costs for operation and maintenance than a cold storage.

About a refrigerated vehicle, the informants marketing fruits consider that the vehicle is economically feasible if it is used for a long-distance transportation, for example Uttarakhand to Maharashtra or Gujarat. On the other hand, all informants marketing vegetables make an opposite evaluation. They are probably involved in relatively a short-distance transportation within the state or between the neighbour states, as well as a unit price of vegetables is too low to generate an enough profit by introducing a refrigerated vehicle.

12. Image of Uttarakhand Produce and the Improvement Measures

Many informants have a positive image to horticultural produce produced in Uttarakhand, especially fruits, e.g., peach, plum, apricot, etc. They consider that the fruits are widely appreciated by the people. They pointed out the following positive and negative images of the produce.

<Positive image>

- Early harvesting season (come to the market earlier than the produce from other states)

<Negative images>

- Short harvesting season (available in the market for a short time)
- Low quality (taste and shape)
- Low price
- Small amount of produce marketed

The informants have suggested the following measures to improve the image of horticultural produce from Uttarakhand.

- Quality improvement (including new improved varieties)

- Increased production
- Streamlined transportation (road networks, simplified police check)
- Development of cold storage facilities
- Improved packaging to mitigate losses during transportation

Attachment 3.5.2 Arrival and Price of APMC Markets (*mandi*) in Uttarakhand (Ave. 2015-19)

1. Arrival

(1) Cabbage

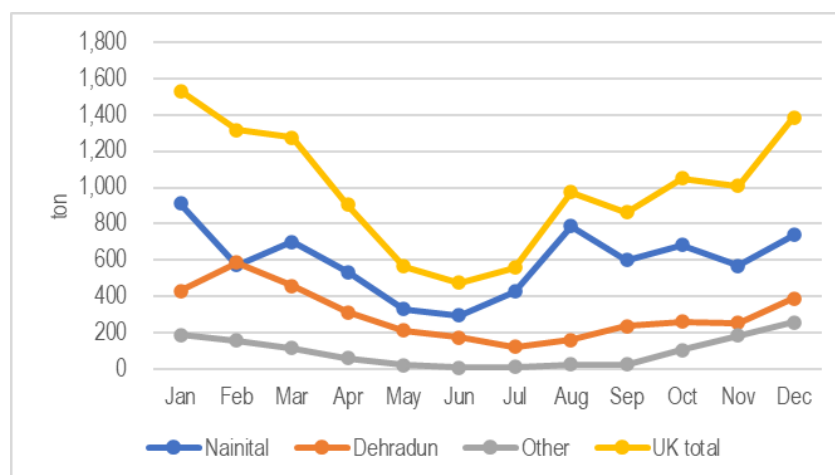
The following table and figure show the average monthly arrival of cabbage in the *mandi* in 2015-19 in Uttarakhand:

Table 1 Monthly Arrival of Cabbage to the *Mandi* in Uttarakhand (Average: 2015-19)

District	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	913.8	573.0	701.4	533.8	330.2	295.4	426.6	788.9	602.1	683.7	569.5	737.9	7,156.4	(60.1)
Dehradun	429.1	585.7	459.7	312.6	213.1	173.1	122.0	159.4	235.8	261.1	254.4	389.8	3,595.8	(30.2)
Other	188.9	158.2	114.5	59.2	21.6	8.3	10.8	26.0	24.9	105.1	186.4	258.1	1,162.0	(9.8)
UK total	1,531.8	1,316.9	1,275.6	905.5	564.9	476.8	559.5	974.3	862.8	1,050.0	1,010.3	1,385.8	11,914.3	(100.0)
(%)	(12.9)	(11.1)	(10.7)	(7.6)	(4.7)	(4.0)	(4.7)	(8.2)	(7.2)	(8.8)	(8.5)	(11.6)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 1 Monthly Arrival of Cabbage to the *Mandi* in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 12,000 tons, while the arrival is about 7,200 tons (60.1%), 3,600 tons (30.2%) and 1,200 tons (9.8%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded in December - March, corresponding with the main harvesting season of cabbage in plain regions. There is another small peak in Nainital in August - September when is the harvesting season in hilly regions. A certain volume of arrival is recorded even during the off-harvesting season in Uttarakhand. It implies that cabbage is commonly supplied from other states during the off-harvesting season, while a part of the harvest is supplied to other states during a harvesting season.

(2) Cauliflower

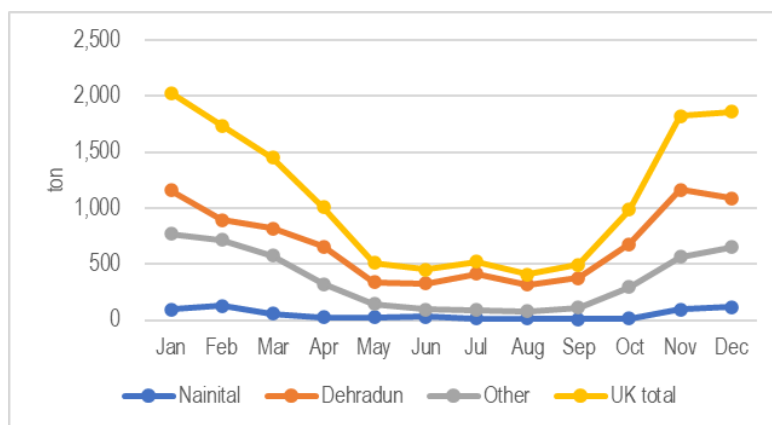
The following table and figure show the average monthly arrival of cauliflower to the *mandi* in 2015-19 in Uttarakhand:

Table 2 Monthly Arrival of Cauliflower to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	97.1	125.5	55.9	26.0	26.9	30.1	14.2	12.2	8.7	12.4	93.0	116.8	618.8	(4.7)
Dehradun	1,160.9	895.9	819.1	656.5	336.0	328.9	414.7	315.6	376.6	679.3	1,161.6	1,090.0	8,235.1	(62.1)
Other	769.4	715.4	577.6	322.9	145.8	92.8	90.1	78.5	111.5	296.2	565.7	651.5	4,417.5	(33.3)
UK total	2,027.4	1,736.9	1,452.6	1,005.4	508.7	451.8	519.0	406.3	496.8	987.9	1,820.2	1,858.4	13,271.4	(100.0)
(%)	(15.3)	(13.1)	(10.9)	(7.6)	(3.8)	(3.4)	(3.9)	(3.1)	(3.7)	(7.4)	(13.7)	(14.0)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 2 Monthly Arrival of Cauliflower to the *Mandi* in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 13,000 tons, while the arrival is about 600 tons (4.7%), 8,200 tons (62.1%) and 4,400 tons (33.3%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded in November - March, corresponding with the main harvesting season of cauliflower in plain regions. There is another exceedingly small peak in Dehradun in August when is the harvesting season in hilly regions. As well as cabbage, a certain volume of arrival is recorded even during the off-harvesting season, especially in Dehradun. It implies that cauliflower is commonly supplied from other states during the off-harvesting season mainly through Dehradun, while a part of the harvest is supplied to other states during a harvesting season.

(3) Onion

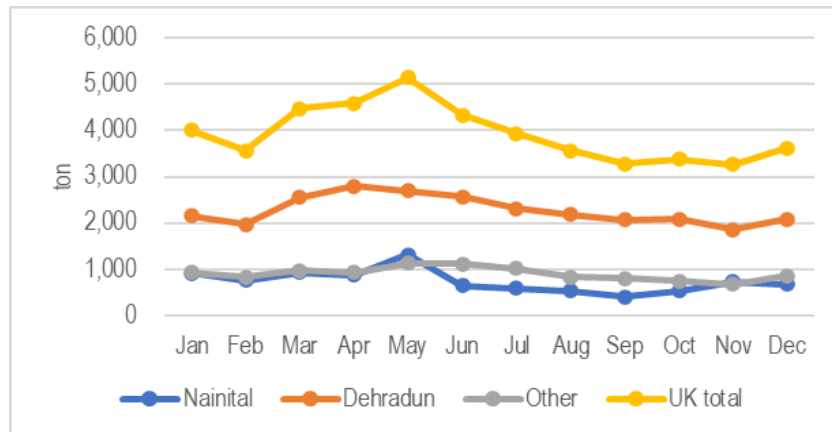
The following table and figure show the average monthly arrival of onion to the *mandi* in 2015-19 in Uttarakhand:

Table 3 Monthly Arrival of Onion to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	919.9	757.5	936.4	870.2	1,312.6	644.6	593.4	537.5	400.8	535.0	737.3	673.1	8,918.4	(18.9)
Dehradun	2,153.2	1,963.1	2,550.1	2,789.0	2,700.7	2,567.8	2,311.8	2,188.4	2,071.7	2,086.8	1,855.2	2,081.1	27,318.9	(58.0)
Other	930.2	838.8	979.4	927.0	1,132.4	1,115.2	1,022.7	834.9	808.2	749.3	678.0	861.4	10,877.5	(23.1)
UK total	4,003.3	3,559.4	4,466.0	4,586.2	5,145.8	4,327.5	3,928.0	3,560.8	3,280.7	3,371.1	3,270.5	3,615.5	47,114.7	(100.0)
(%)	(8.5)	(7.6)	(9.5)	(9.7)	(10.9)	(9.2)	(8.3)	(7.6)	(7.0)	(7.2)	(6.9)	(7.7)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 3 Monthly Arrival of Onion to the Mandi in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 47,100 tons, while the arrival is about 8,900 tons (18.9%), 27,000 tons (58.0%) and 11,000 tons (23.1%) in Nainital District, Dehradun District and other districts, respectively. The peak of the monthly arrival in all Uttarakhand have been recorded around May corresponding with the main harvesting season of onion in Uttarakhand. Different from other crops discussed in this paper, the monthly arrival share is evenly distributed throughout the year, as onion is one of popular and indispensable vegetables in India. It implies that a large part of onion demand in Uttarakhand is satisfied by the supply from other states.

(4) Peas (Wet)

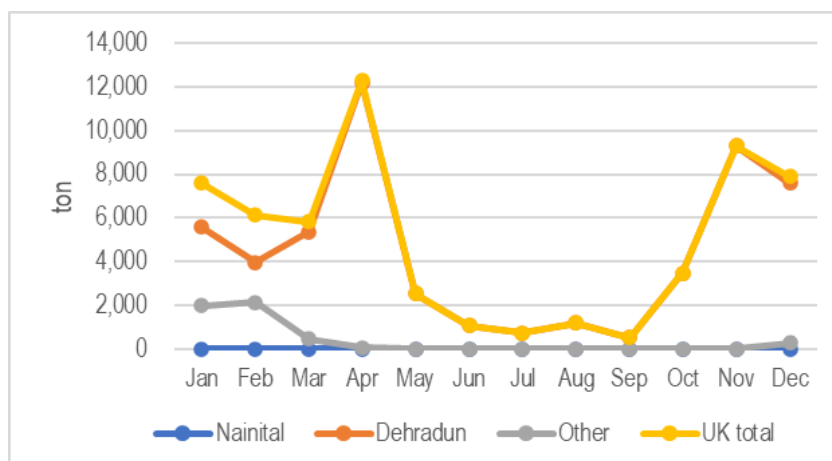
The following table and figure show the average monthly arrival of peas to the *mandi* in 2015-19 in Uttarakhand:

Table 4 Monthly Arrival of Peas to the Mandi in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	4.4	13.3	11.3	2.6	0.0	0.0	0.0	0.0	0.0	0.9	2.4	1.6	36.6	(0.1)
Dehradun	5,597.8	3,983.1	5,378.7	12,214.1	2,548.6	1,075.5	749.4	1,195.2	516.8	3,475.2	9,300.1	7,598.0	53,632.5	(91.5)
Other	1,980.8	2,130.2	450.9	71.6	0.1	0.0	0.0	0.0	0.1	0.3	4.4	289.2	4,927.5	(8.4)
UK total	7,583.0	6,126.7	5,840.8	12,288.3	2,548.7	1,075.5	749.4	1,195.2	516.8	3,476.4	9,307.0	7,888.8	58,596.6	(100.0)
(%)	(12.9)	(10.5)	(10.0)	(21.0)	(4.3)	(1.8)	(1.3)	(2.0)	(0.9)	(5.9)	(15.9)	(13.5)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 4 Monthly Arrival of Peas to the *Mandi* in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 58,500 tons, while the arrival is about 37 tons (0.1%), 53,600 tons (91.5%) and 4,900 tons (8.4%) in Nainital District, Dehradun District and other districts, respectively. As share of the arrival is highly concentrated at Dehradun, monthly distribution of the arrival in Uttarakhand is almost represented by that in Dehradun. The arrival is clearly divided into the high season (November - April) and the lean season (May - October). There 2 peaks of the monthly arrival in November - December and in April, corresponding with the main harvesting season of peas in plain regions and in hilly regions, respectively. A substantial part of the harvest is probably going to other states during the high season.

(5) Potato

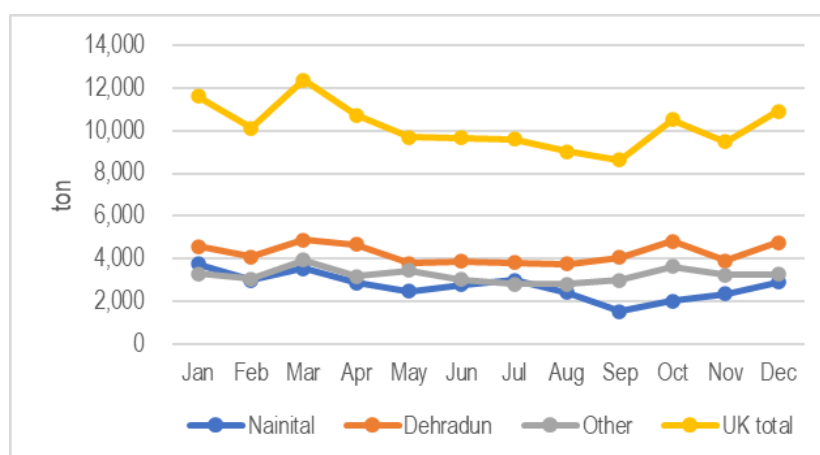
The following table and figure show the average monthly arrival of potato to the *mandi* in 2015-19 in Uttarakhand:

Table 5 Monthly Arrival of Potato to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	3,754.6	2,993.5	3,531.4	2,886.0	2,463.4	2,786.4	3,004.7	2,430.6	1,545.8	2,031.8	2,343.0	2,903.7	32,674.8	(26.7)
Dehradun	4,567.5	4,091.5	4,896.0	4,663.5	3,800.4	3,867.1	3,812.0	3,771.5	4,077.5	4,835.1	3,901.7	4,755.3	51,039.2	(41.7)
Other	3,309.7	3,043.5	3,955.9	3,187.0	3,439.1	3,026.2	2,800.6	2,819.4	3,006.9	3,651.5	3,251.7	3,278.7	38,770.0	(31.7)
UK total	11,631.8	10,128.5	12,383.3	10,736.6	9,702.9	9,679.6	9,617.3	9,021.5	8,630.1	10,518.4	9,496.4	10,937.7	122,484.0	(100.0)
(%)	(9.5)	(8.3)	(10.1)	(8.8)	(7.9)	(7.9)	(7.9)	(7.4)	(7.0)	(8.6)	(7.8)	(8.9)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 5 Monthly Arrival of Potato to the *Mandi* in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 122,500 tons, while the arrival is about 32,700 tons (26.7%), 51,000 tons (41.7%) and 38,800 tons (31.7%) in Nainital District, Dehradun District and other districts, respectively. Like onion, the monthly arrival share is evenly distributed throughout the year. The reasons are probably as follows.

- A staple food crop especially in hill regions (even demand throughout the year)

- Wide adaptability to grow (diverse growing area \Rightarrow diverse cropping/harvesting season)

A large part of potato demand in Uttarakhand is probably satisfied by the supply from other states, as same as onion.

(6) Tomato

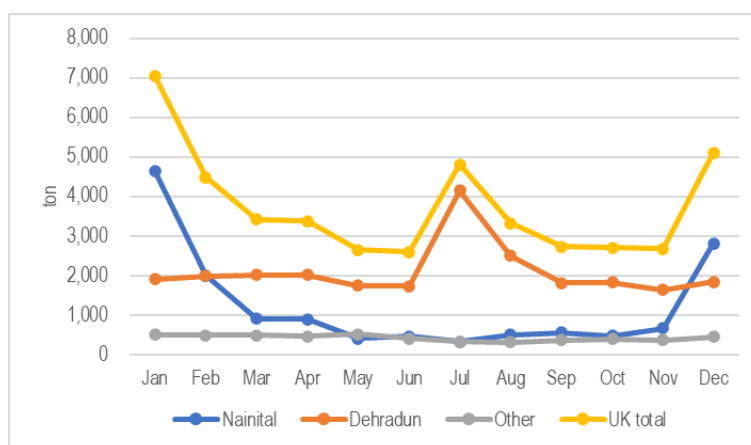
The following table and figure show the average monthly arrival of tomato to the *mandi* in 2015-19 by districts in Himachal Pradesh:

Table 6 Monthly Arrival of Tomato to the Mandi in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	4,644.0	2,005.4	905.1	894.9	402.7	457.4	329.8	497.1	556.1	472.9	667.8	2,815.8	14,648.8	(32.6)
Dehradun	1,903.1	1,989.0	2,019.8	2,017.2	1,741.6	1,733.7	4,152.5	2,505.4	1,811.7	1,830.3	1,632.2	1,840.1	25,176.6	(56.1)
Other	501.0	486.1	488.5	465.2	508.5	408.7	325.5	315.6	366.1	394.4	369.6	452.7	5,082.0	(11.3)
UK total	7,048.2	4,480.6	3,413.4	3,377.3	2,652.8	2,599.7	4,807.8	3,318.1	2,733.8	2,697.6	2,669.7	5,108.6	44,907.4	(100.0)
(%)	(15.7)	(10.0)	(7.6)	(7.5)	(5.9)	(5.8)	(10.7)	(7.4)	(6.1)	(6.0)	(5.9)	(11.4)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 6 Monthly Arrival of Tomato to the Mandi in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 44,900 tons, while the arrival is about 14,600 tons (32.6%), 25,000 tons (56.1%) and 5,100 tons (11.3%) in Nainital District, Dehradun District and other districts, respectively. Two peaks of the monthly arrival in all Uttarakhand have been recorded around January and July corresponding with the main harvesting season in plain regions and in hilly regions, respectively. *Mandi* in Nainital mainly transact the harvest in plain region, while the harvest in hilly regions is gathered in Dehradun according to the record. Even though the two peak seasons, a certain stable transaction is observed during the off-peak seasons in all Uttarakhand. Like onion, tomato is one of popular and indispensable vegetables throughout the year in India. It is considered that a substantial part of tomato demand in Uttarakhand is satisfied by the supply from other states mainly through Dehradun, while a part of the harvest is going to other states during the peak seasons.

(7) Garlic

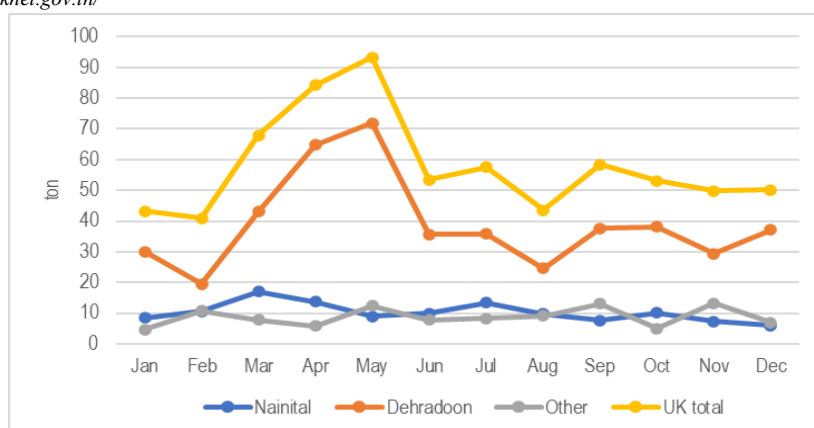
The following table and figure show the average monthly arrival of garlic to the *mandi* in 2015-19 in Uttarakhand:

Table 7 Monthly Arrival of Garlic to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	8.5	10.6	17.0	13.7	9.0	10.0	13.5	9.7	7.7	10.1	7.2	6.1	123.0	(17.7)
Dehradun	30.1	19.5	43.0	64.9	71.8	35.6	35.8	24.7	37.7	38.0	29.5	37.1	467.7	(67.2)
Other	4.7	10.8	7.9	5.8	12.5	7.9	8.3	9.1	13.0	5.0	13.2	7.0	105.1	(15.1)
UK total	43.3	40.9	68.0	84.3	93.3	53.4	57.6	43.5	58.4	53.1	49.9	50.1	695.8	(100.0)
(%)	(6.2)	(5.9)	(9.8)	(12.1)	(13.4)	(7.7)	(8.3)	(6.3)	(8.4)	(7.6)	(7.2)	(7.2)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 7 Monthly Arrival of Garlic to the *Mandi* in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 696 tons, while the arrival is about 100 tons (17.7%), 468 tons (67.2%) and 105 tons (15.1%) in Nainital District, Dehradun District and other districts, respectively. The arrival volume is relatively small. The peaks of the monthly arrival in all Uttarakhand have been recorded in April - May, corresponding with the main harvesting season of garlic in plain regions. There is another small peak in September when is the harvesting season in hilly regions. A certain volume of arrival is recorded even during the off-harvesting season in Uttarakhand. It implies that garlic is commonly supplied from other states during the off-harvesting season.

(8) Ginger

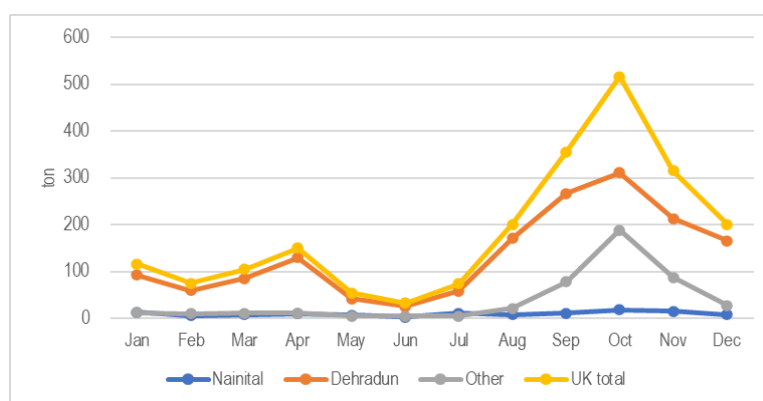
The following table and figure show the average monthly arrival of ginger to the *mandi* in 2015-19 in Uttarakhand:

Table 8 Monthly Arrival of Ginger to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	12.6	5.7	8.0	9.5	7.2	2.3	10.6	7.8	11.0	17.8	15.6	8.0	116.0	(5.3)
Dehradun	92.1	59.7	85.4	129.9	42.2	25.2	58.4	170.7	266.8	310.4	212.6	165.2	1,618.7	(73.7)
Other	11.7	9.8	11.5	10.7	5.0	5.0	4.8	21.7	77.8	188.0	87.2	27.3	460.6	(21.0)
UK total	116.4	75.3	104.9	150.1	54.4	32.5	73.8	200.2	355.6	516.2	315.4	200.6	2,195.4	(100.0)
(%)	(5.3)	(3.4)	(4.8)	(6.8)	(2.5)	(1.5)	(3.4)	(9.1)	(16.2)	(23.5)	(14.4)	(9.1)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 8 Monthly Arrival of Ginger to the Mandi in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 2,200 tons, while the arrival is about 100 tons (5.3%), 1,600 tons (73.7%) and 460 tons (21.0%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded in September - November, corresponding with the main harvesting season of ginger in hilly regions. There is another small peak in Dehradun in March - April when is the harvesting season in plain regions. The transacted volume is small despite ginger is a popular and a high demand spice crop in India. It is considered that ginger is still consumed mainly within a production area in Uttarakhand and/or is marketed through alternative supply chain excluding the *mandi*, as a certain part of ginger is distributed to processors.

(9) Turmeric

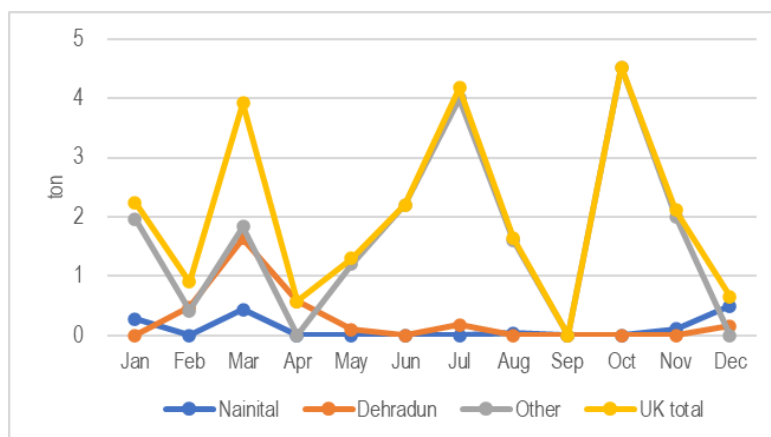
The following table and figure show the average monthly arrival of turmeric to the *mandi* in 2015-19 by districts in Himachal Pradesh:

Table 9 Monthly Arrival of Turmeric to the Mandi in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	0.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.4	(5.6)
Dehradun	0.0	0.5	1.6	0.6	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.2	3.1	(12.9)
Other	2.0	0.4	1.8	0.0	1.2	2.2	4.0	1.6	0.0	4.5	2.0	0.0	19.7	(81.4)
UK total	2.2	0.9	3.9	0.6	1.3	2.2	4.2	1.6	0.0	4.5	2.1	0.7	24.3	(100.0)
(%)	(9.2)	(3.7)	(16.2)	(2.4)	(5.4)	(9.1)	(17.2)	(6.8)	(0.0)	(18.6)	(8.7)	(2.7)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 9 Monthly Arrival of Turmeric to the Mandi in Uttarakhand (Average: 2015-19)

The annual arrival is only 24.3 tons in Uttarakhand. The volume is exceedingly small considering the importance of turmeric to Indian cuisine. It is considered that turmeric is still consumed mainly within a production area in Uttarakhand and/or is marketed through alternative supply chain excluding the *mandi*, as turmeric is generally processed (steaming) before marketing and is used for non-food purpose such as dyeing, medical agent, etc.

(10) Apple

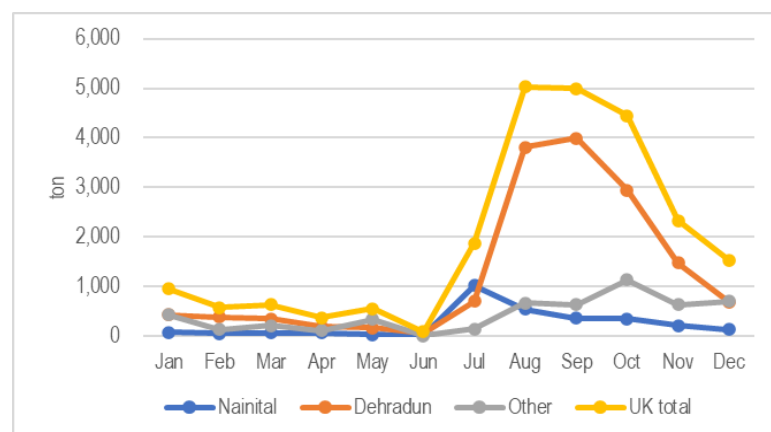
The following table and figure show the average monthly arrival of apple to the *mandi* in 2015-19 in Uttarakhand:

Table 10 Monthly Arrival of Apple to the Mandis in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	81.1	55.9	72.7	63.5	39.4	25.3	1,025.5	545.9	366.3	354.5	213.2	133.0	2,976.2	(12.7)
Dehradun	435.1	388.7	350.0	196.7	176.2	56.9	708.3	3,808.4	3,997.2	2,947.3	1,481.8	695.9	15,242.4	(65.1)
Other	435.1	138.7	211.5	115.2	345.2	11.5	144.9	672.3	636.8	1,143.4	642.4	707.0	5,204.0	(22.2)
UK total	951.3	583.2	634.2	375.4	560.7	93.7	1,878.7	5,026.7	5,000.3	4,445.3	2,337.3	1,535.8	23,422.6	(100.0)
(%)	(4.1)	(2.5)	(2.7)	(1.6)	(2.4)	(0.4)	(8.0)	(21.5)	(21.3)	(19.0)	(10.0)	(6.6)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 10 Monthly Arrival of Apple to the Mandis in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 23,400 tons, while the arrival is about 3,000 tons (12.7%), 15,000 tons (65.1%) and 5,200 tons (22.2%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded in August - October, corresponding with the main harvesting season. Because of CA storage system, the supply season is longer than other fruits crops discussed in this paper. Apple is a famous fruits crop in Uttarakhand. Uttarakhand has relatively advantage over other producing states, Jammu Kashmir and Himachal Pradesh, as the supply season begins about 1 month earlier, i.e., in July. It seems that apple producers in the eastern part (supplying to Nainital) aggressively adopt the advantage, though the annual marketed volume is smaller than the western part.

(11) Mango

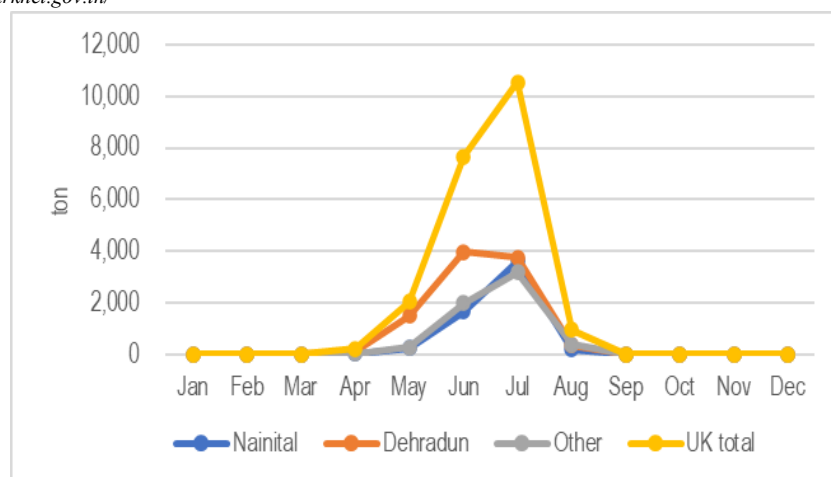
The following table and figure show the average monthly arrival of mango to the *mandi* in 2015-19 in Uttarakhand:

Table 11 Monthly Arrival of Mango to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	0.0	0.0	0.0	31.8	256.4	1,682.1	3,616.5	199.6	0.2	0.1	0.3	0.0	5,786.9	(27.0)
Dehradun	0.0	0.0	0.0	155.0	1,502.7	3,986.0	3,749.3	373.8	0.6	0.0	0.0	0.0	9,767.4	(45.6)
Other	0.6	0.0	0.0	42.0	280.7	1,990.3	3,179.3	389.7	0.4	0.0	0.0	0.0	5,883.1	(27.4)
UK total	0.6	0.0	0.0	228.9	2,039.8	7,658.4	10,545.1	963.1	1.2	0.1	0.3	0.0	21,437.5	(100.0)
(%)	(0.0)	(0.0)	(0.0)	(1.1)	(9.5)	(35.7)	(49.2)	(4.5)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 11 Monthly Arrival of Mango to the *Mandi* in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 21,400 tons, while the arrival is about 5,800 tons (27.0%), 9,700 tons (45.6%) and 5,900 tons (27.4%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded in Jun - July, corresponding with the main harvesting season. The arrival is almost same amount with apple. Different from Apple, no arrival is recorded during off-harvesting months. Then, it seems that mango is widely produced in the whole state while apple is mainly produced in the western regions.

(12) Pear

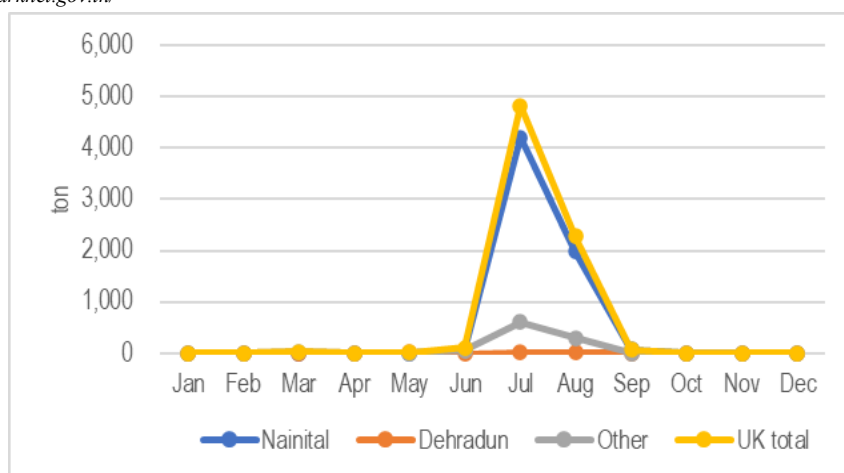
The following table and figure show the average monthly arrival of pear to the *mandi* in 2015-19 in Uttarakhand:

Table 12 Monthly Arrival of Pear to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	0.0	3.8	0.0	0.0	0.0	60.0	4,208.3	1,977.5	64.3	4.1	0.5	1.0	6,319.5	(86.2)
Dehradun	0.4	0.0	1.4	0.0	10.9	0.0	14.7	10.1	0.1	0.2	0.0	0.0	37.8	(0.5)
Other	3.6	0.0	24.1	0.0	0.0	51.6	602.3	292.9	3.2	0.1	0.0	0.0	977.8	(13.3)
UK total	4.0	3.8	25.5	0.0	10.9	111.6	4,825.4	2,280.5	67.7	4.4	0.5	1.0	7,335.2	(100.0)
(%)	(0.1)	(0.1)	(0.3)	(0.0)	(0.1)	(1.5)	(65.8)	(31.1)	(0.9)	(0.1)	(0.0)	(0.0)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 12 Monthly Arrival of Pear to the *Mandi* in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 7,300 tons, while the arrival is about 6,300 tons (86.2%), 40 tons (0.5%) and 980 tons (13.3%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded in July - August, corresponding with the main harvesting season. No arrival is recorded during off-harvesting months. Uttarakhand is the second largest pear production state in India after Jammu Kashmir. It seems that pear is mainly produced in the eastern regions.

(13) Peach

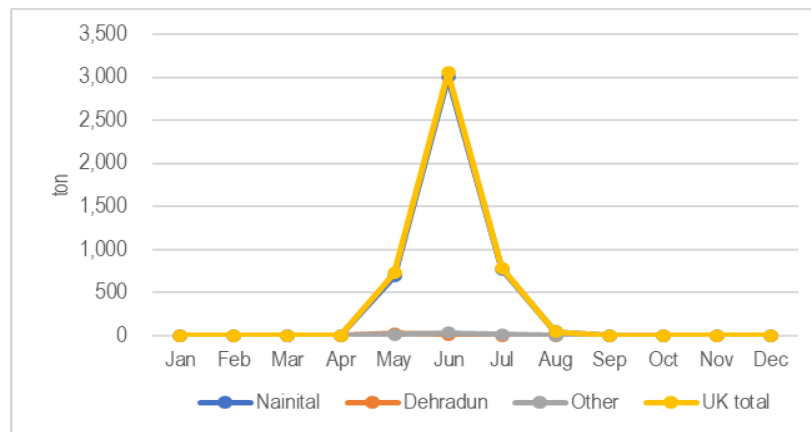
The following table and figure show the average monthly arrival of peach to the *mandi* in 2015-19 in Uttarakhand:

Table 13 Monthly Arrival of Peach to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	0.0	0.0	0.0	0.0	688.6	3,005.9	770.3	44.6	0.0	0.0	0.0	0.0	4,509.5	(97.8)
Dehradun	0.0	0.0	0.0	0.6	25.0	14.8	0.0	0.2	0.0	0.0	0.0	0.0	40.7	(0.9)
Other	0.7	0.1	0.4	2.2	12.8	31.3	12.0	0.8	0.0	0.0	0.1	0.0	60.5	(1.3)
UK total	0.7	0.1	0.4	2.9	726.4	3,052.0	782.4	45.6	0.0	0.0	0.1	0.0	4,610.7	(100.0)
(%)	(0.0)	(0.0)	(0.0)	(0.1)	(15.8)	(66.2)	(17.0)	(1.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 13 Monthly Arrival of Peach to the Mandi in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 4,600 tons, while the arrival is about 4,100 tons (97.8%), 40 tons (0.9%) and 60 tons (1.3%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded around June, corresponding with the main harvesting season. No arrival is recorded during off-harvesting months. Uttarakhand is the largest peach production state in India. It seems that peach is almost exclusively produced in the eastern regions.

(14) Plum

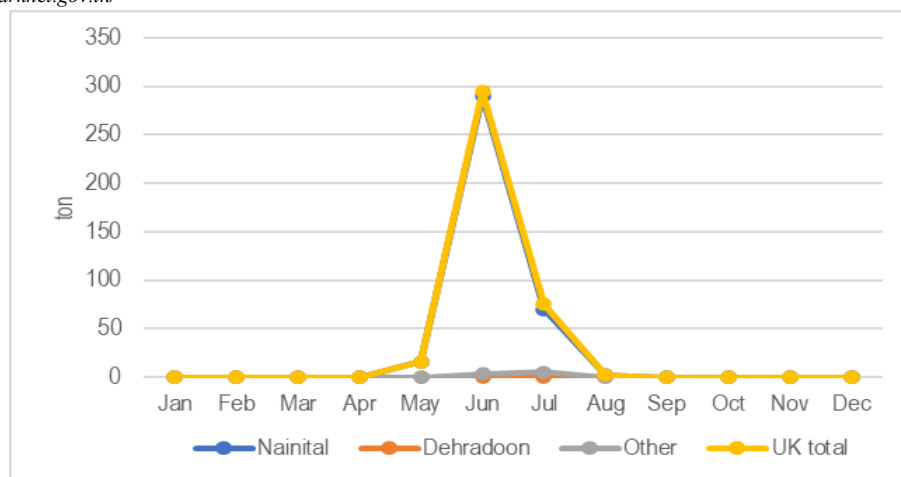
The following table and figure show the average monthly arrival of plum to the *mandi* in 2015-19 in Uttarakhand:

Table 14 Monthly Arrival of Plum to the Mandi in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	0.0	0.0	0.0	0.0	16.0	290.4	70.0	2.1	0.0	0.0	0.0	0.0	378.5	(97.6)
Dehradun	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.8	(0.2)
Other	0.0	0.0	0.0	0.0	0.0	3.3	5.1	0.0	0.0	0.0	0.0	0.0	8.5	(2.2)
UK total	0.0	0.0	0.0	0.0	16.0	294.4	75.2	2.1	0.0	0.0	0.0	0.0	387.8	(100.0)
(%)	(0.0)	(0.0)	(0.0)	(0.0)	(4.1)	(75.9)	(19.4)	(0.5)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 14 Monthly Arrival of Plum to the Mandi in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 400 tons, while the arrival is about 380 tons (97.6%), 1 ton (0.2%) and 9 tons (2.2%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded around June, corresponding with the main harvesting season. No arrival is recorded during off-harvesting months. The arrival concentrates in a short period comparing with other fruits crops due to its short optimum harvesting period. Uttarakhand is the largest plum production state in India as well, while the arrival is limited. It seems that plum is also almost exclusively produced in the eastern regions.

(15) Lichi

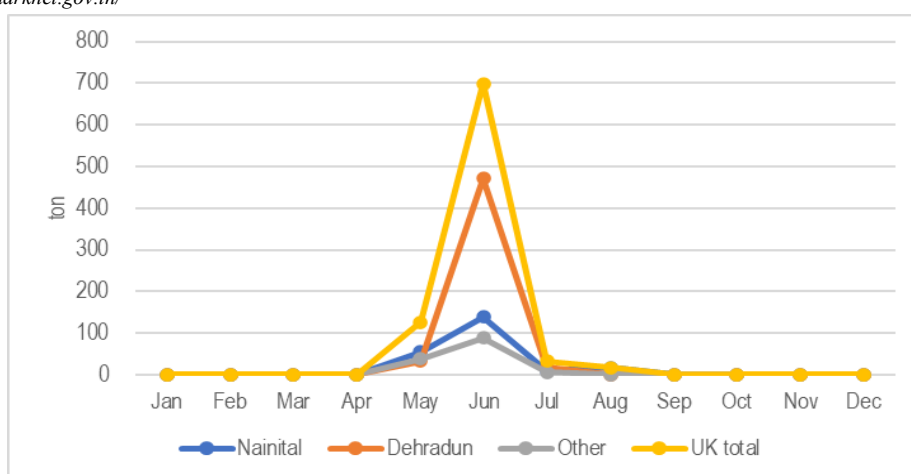
The following table and figure show the average monthly arrival of lichi to the *mandi* in 2015-19 in Uttarakhand:

Table 14 Monthly Arrival of Plum to the *Mandi* in Uttarakhand (Average: 2015-19)

Dist	Month												Total	(%)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Nainital	0.0	0.0	0.0	0.0	54.9	139.3	8.7	16.7	0.0	0.0	0.0	0.0	219.6	(25.1)
Dehradun	0.0	0.0	0.0	0.0	32.4	471.3	17.6	0.0	0.0	0.0	0.0	0.0	521.2	(59.6)
Other	0.0	0.0	0.0	0.0	38.6	88.7	6.0	0.0	0.0	0.0	0.0	0.0	133.4	(15.3)
UK total	0.0	0.0	0.0	0.0	125.9	699.3	32.3	16.7	0.0	0.0	0.0	0.0	874.3	(100.0)
(%)	(0.0)	(0.0)	(0.0)	(0.0)	(14.4)	(80.0)	(3.7)	(1.9)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	

Note: Coloured cell: $\geq 10\%$

Source: <https://agmarknet.gov.in/>



Source: <https://agmarknet.gov.in/>

Figure 14 Monthly Arrival of Lichi to the *Mandi* in Uttarakhand (Average: 2015-19)

The annual arrival in Uttarakhand is about 870 tons, while the arrival is about 220 tons (25.1%), 520 ton (59.6%) and 130 tons (15.3%) in Nainital District, Dehradun District and other districts, respectively. The peaks of the monthly arrival in all Uttarakhand have been recorded around June, corresponding with the main harvesting season. No arrival is recorded during off-harvesting months. The arrival concentrates in a short period comparing with other fruits crops due to its short optimum harvesting period. It seems that lichi is relatively widely produced in Uttarakhand, while the main producing area is in the western regions.

2. Price

(1) Cabbage

The following figure shows the change of the average monthly market price of cabbage in the *mandi* in 2015-19 in Uttarakhand:

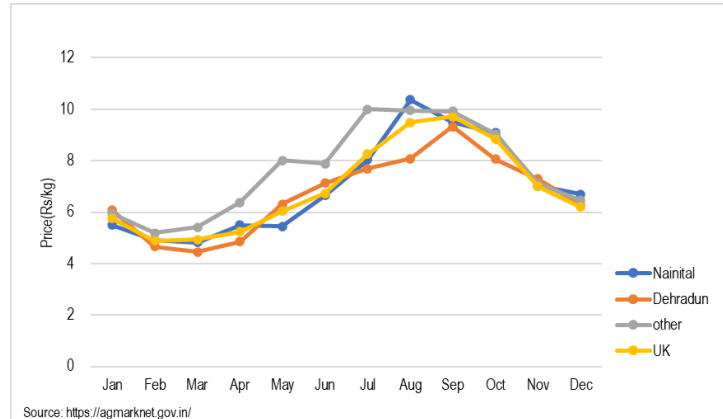


Figure 15 Monthly Market Price of Cabbage in Uttarakhand (Average: 2015-19)

The market price changes between INR 4/kg and INR 10/kg. The price bottoms out in February - March, while it peaks in August - October. The price change shows a similar trend in all districts. The low-price season almost corresponds to the high-arrival season when is the harvesting season in plain regions. The price peak season corresponds to the harvesting season in hilly regions. The price difference against the price in NTC Delhi is small, while it is slightly lower during July - November and slightly higher in other months. It is probable that a certain part of the harvested cabbage in hilly regions is marketed to NTC Delhi and other states, while there is a continuous inflow of cabbage from other states almost throughout the year.

(2) Cauliflower

The following figure shows the change of the average monthly market price of cauliflower in the *mandi* in 2015-19 in Uttarakhand:

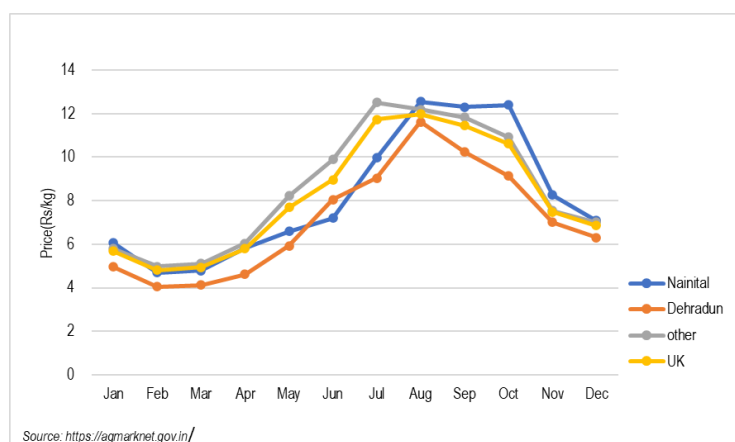


Figure 16 Monthly Market Price of Cauliflower in Uttarakhand (Average: 2015-19)

The market price changes between INR 4/kg and INR 12/kg. The price fluctuation range is a little bit wider than the range for cabbage. The price change pattern is like the pattern for cabbage, whilst the times of the bottom and peak prices are about one month ahead the time for cabbage. The price change also shows a similar trend in all districts. The price is lower than the price in NTC Delhi throughout the year, while the difference is remarkably big around July - August when corresponds to the harvesting season in hilly regions. It is probable that a certain part of the harvested cauliflower is marketed to NTC Delhi and other states, especially from the hilly regions around July - August. On the other hand, there is a certain volume of inflow of cauliflower from other states in the remained months except for the peak harvesting season in the plain regions.

(3) Onion

The following figure shows the change of the average monthly market price of onion in the *mandi* in 2015-19 in Uttarakhand:

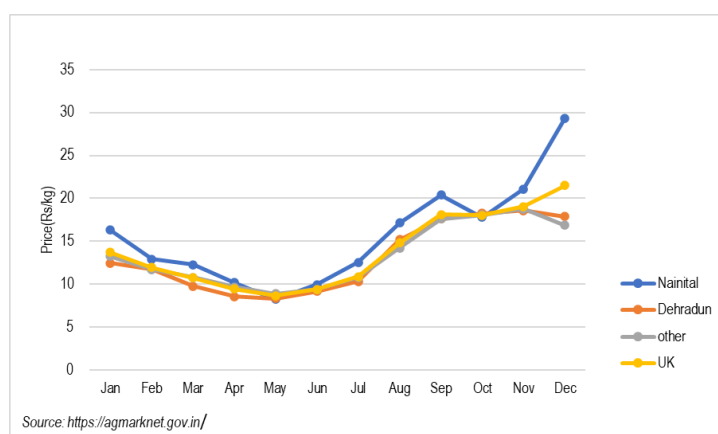


Figure 17 Monthly Market Price of Onion by in Uttarakhand (Average: 2015-19)

The market price changes between INR 9/kg and INR 20/kg. The price change also shows a similar trend in all districts, except for Nainital in December. The price bottoms out in May, while it peaks November - December. The price trend changes obviously in inverse relation to the arrival trend. The price against the price in NTC Delhi is slightly lower almost throughout the year, even though the difference is bigger during the high-price season. It is probable that there is a substantial volume of inflow of onion from other states throughout the year, as the onion supply chain in Uttarakhand is integrated with an extensive distribution network.

(4) Peas (Wet)

The following figure shows the change of the average monthly market price of peas in the *mandi* in 2015-19 in Uttarakhand:

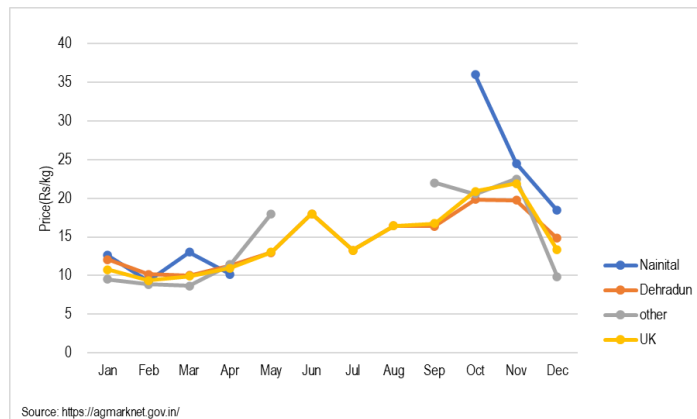


Figure 18 Monthly Market Price of Peas by in Uttarakhand (Average: 2015-19)

The market price changes between INR 10/kg and INR 20/kg, except for during October - November in Nainital. The price fluctuation range is not much throughout the year. The price bottoms out in February - March when is the harvesting season in plain regions and peaks in November when is the early-harvesting season in the plain regions. Then, the price is slightly jumped in June when is the harvesting season in the hilly regions. While the price is lower than the price in NTC Delhi throughout the year, the difference is bigger during April - November. It is probable that peas to be marketed to NTC Delhi and other states are widely produced in the western part, as peaks of the arrival are recorded in Dehradun in April and in November (see the Figure 4).

(5) Potato

The following figure shows the change of the average monthly market price of potato in the *mandi* in 2015-19 in Uttarakhand:

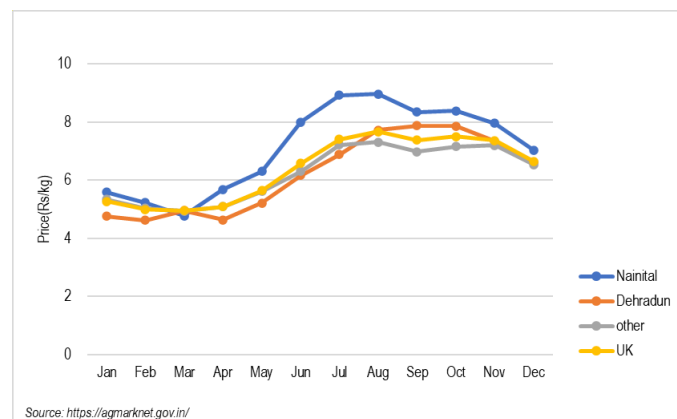


Figure 19 Monthly Market Price of Potato in Uttarakhand (Average: 2015-19)

The market price changes between INR 5/kg and INR 8/kg. The price fluctuation range is exceedingly small compared with the other selected vegetables. The price bottoms out in February - March, while it peaks around August. The price trend changes in inverse relation to the arrival trend. Like onion, the price against the price in NTC Delhi is slightly lower throughout the year, even though the difference is bigger during the high-price season. It is probable that there is a substantial volume of inflow of potato from other states throughout the year, as the potato supply chain in Uttarakhand is integrated with an extensive distribution network.

(6) Tomato

The following figure shows the change of the average monthly market price of tomato in the *mandi* in 2015-19 in Uttarakhand:

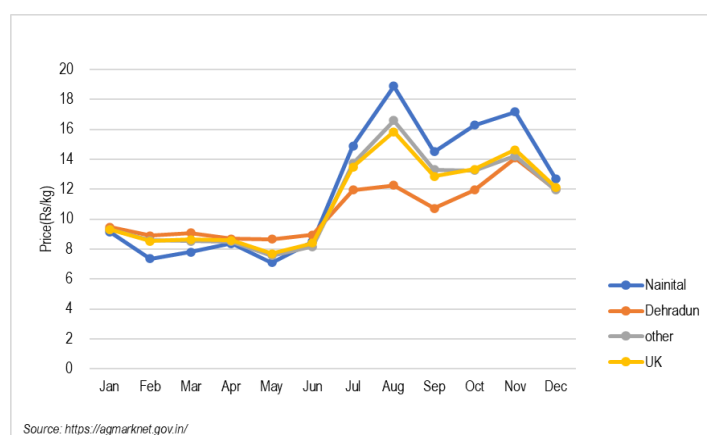


Figure 20 Monthly Market Price of Tomato in Uttarakhand (Average: 2015-19)

The market price changes between INR 8/kg and INR 16/kg. The price drops in January when the harvesting in the plain regions reaches the high season and hovers at the bottom level by June, while it peaks around August. Like onion and potato, the price against the price in NTC Delhi is slightly lower throughout the year, even though the difference is bigger during the high-price season. It is probable that there is a substantial volume of inflow of tomato from other states almost throughout the year except during the peak harvesting season, as the tomato supply chain in Uttarakhand is integrated with an extensive distribution network. However, the arrival around July (see Figure 6) harvested in the hilly regions is largely marketed to NTC Delhi and other states due to a bigger price difference.

(7) Garlic

The following figure shows the change of the average monthly market price of garlic in the *mandi* in 2015-19 in Uttarakhand:

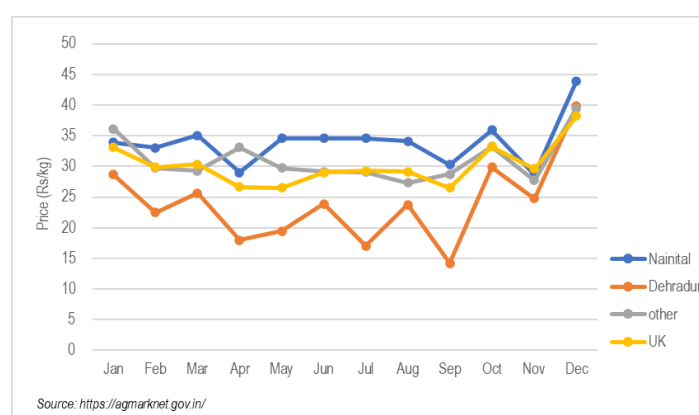


Figure 21 Monthly Market Price of Garlic in Uttarakhand (Average: 2015-19)

The market price changes between INR 14/kg and INR 40/kg (referring the data of Dehradun as it has the largest share of the arrival though the price changes differently from other districts). The price

fluctuation range is relatively high compared with the selected vegetables. The price frequently moves up and down throughout the year without correlation with the arrival trend and the harvesting season.

(8) Ginger

The following figure shows the change of the average monthly market price of ginger in the *mandi* in 2015-19 in Uttarakhand:

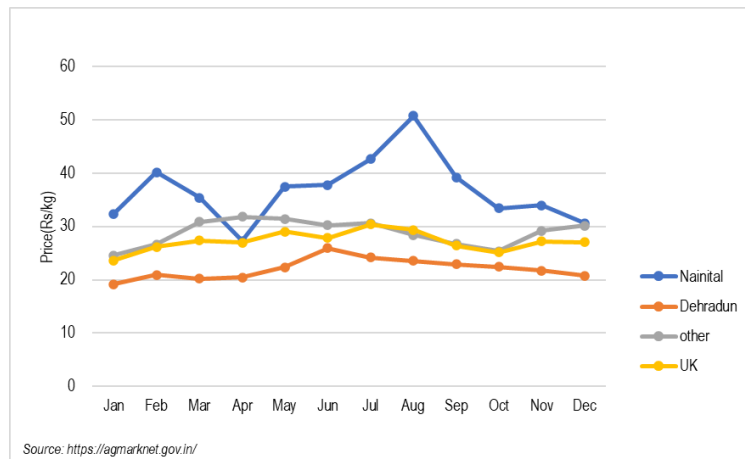


Figure 21 Monthly Market Price of Ginger in Uttarakhand (Average: 2015-19)

The market price changes between INR 20/kg and INR 30/kg except for Nainital which has only 5.3% of the share of the arrival. The price is relatively stable throughout the year except for Nainital. The price against the price in NTC Delhi is lower throughout the year except during November. It is probable that a part of the harvest in the hilly regions is marketed to NTC Delhi and other states due to a bigger price difference during the harvesting season.

(9) Turmeric

The following figure shows the change of the average monthly market price of turmeric in the *mandi* in 2015-19 in Uttarakhand:

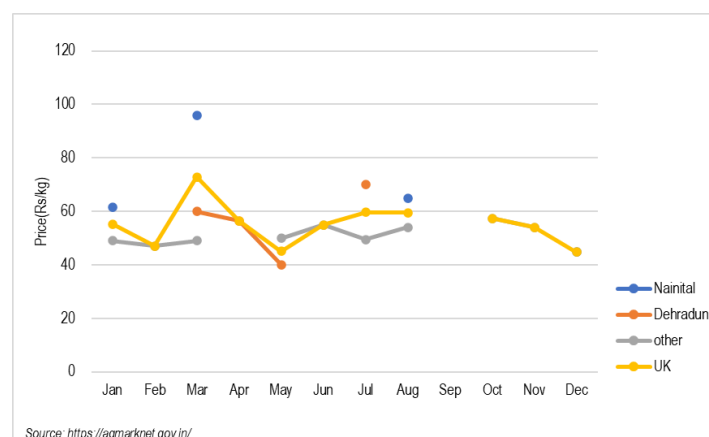


Figure 22 Monthly Market Price of Turmeric in Uttarakhand (Average: 2015-19)

The market price changes between INR 40/kg and INR 70/kg (data in Nainital is not counted as it has only 5.6% of the share of the arrival). The price is relatively stable throughout the year while the arrival

moves up and down. It is uncertain that Figure 22 is representing the actual market price in Uttarakhand considering a quite limited volume of the arrival (see Table 9).

(10) Apple

The following figure shows the change of the average monthly market price of apple in the *mandi* in 2015-19 in Uttarakhand:

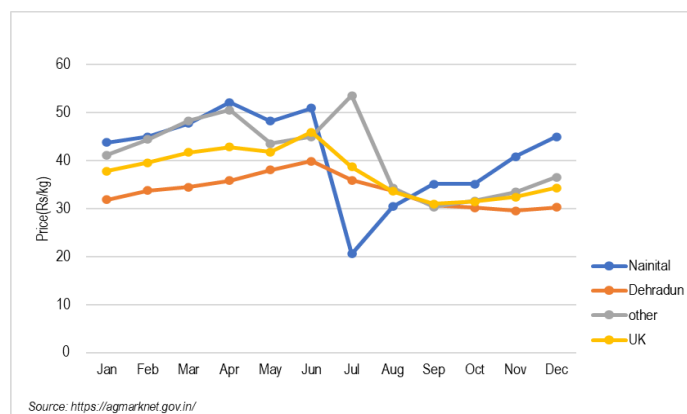


Figure 22 Monthly Market Price of Apple in Uttarakhand (Average: 2015-19)

The market price changes between INR 20/kg and INR 50/kg. The price peaks during April - June when is immediately before the harvesting season, and it starts to decrease after starting the harvesting up to September - October. The price against the price in NTC Delhi is sufficiently lower throughout the year. It is probable that a substantial part of the harvest is marketed to NTC Delhi and other states. As apple has an extensive distribution network covering the whole country, a certain volume of apple inflow may exist mainly during the high-price season.

(11) Mango

The following figure shows the change of the average monthly market price of mango in the *mandi* in 2015-19 in Uttarakhand:

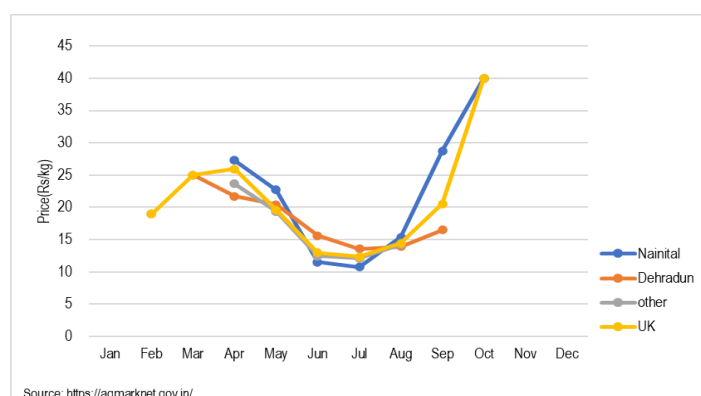


Figure 23 Monthly Market Price of Mango in Uttarakhand (Average: 2015-19)

The almost mango arrival is recorded during June - August. The market price changes between INR 10/kg and INR 20/kg during the season. The price bottoms out in June - July when is the peak harvesting season, as well as the peak arrival season. The price against the price in NTC Delhi is sufficiently lower

throughout the year. It is probable that a substantial part of the harvest is marketed to NTC Delhi and other states. Different from apple, inflow of mango may not be much due to a quite limited volume of the arrival during the off-harvesting season.

(12) Pear

The following figure shows the change of the average monthly market price of pear in the *mandi* in 2015-19 in Uttarakhand:

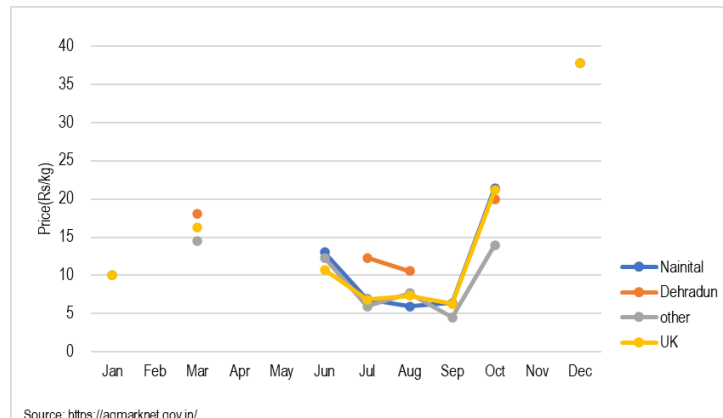


Figure 24 Monthly Market Price of Pear in Uttarakhand (Average: 2015-19)

The almost pear arrival is recorded only in July - August corresponding with the peak harvesting season in Uttarakhand. The market price is around INR 7/kg during the season, while the price is more than INR 10/kg in the early harvesting season, i.e., June.

(13) Plum

The following figure shows the change of the average monthly market price of plum in the *mandi* in 2015-19 in Uttarakhand:

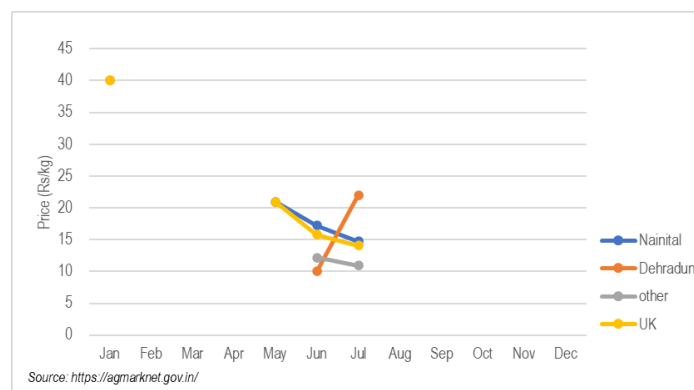


Figure 25 Monthly Market Price of Plum in Uttarakhand (Average: 2015-19)

The almost pear arrival is recorded only in June - July corresponding with the peak harvesting season in Uttarakhand. The market price changes between INR 10/kg and INR 20/kg which is higher in the early harvesting season and continues to decrease up to the end of the season (data in Dehradun is not counted as it has only 0.2% of the share of the arrival).

(14) Lichi

The following figure shows the change of the average monthly market price of lichi in the mandi in 2015-19 in Uttarakhand:

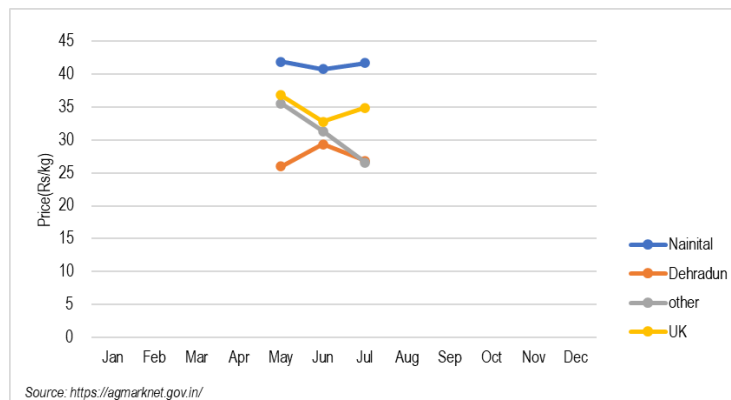


Figure 26 Monthly Market Price of Lichi in Uttarakhand (Average: 2015-19)

The almost pear arrival is recorded only in June corresponding with the peak harvesting season in Uttarakhand. The market price ranges between INR 25/kg and INR 42/kg. It is interesting that the price difference among locations, especially between Nainital and Dehradun is excessively big different from other selected fruits.

Attachment 3.5.3 High-end Market in Uttarakhand

The JICA Survey Team, through its Indian staff, carried out an interview survey to retailers (shops and a supermarket) and Restaurants/Hotels in Uttarakhand in July 2021. The survey was taken in Dehradun where is the capital of Uttarakhand. This report discusses survey findings as shown below.

1. Informants

A series of interviews was made to 20 informants, consisting of 9 retailers (including a supermarket), 9 restaurants and 2 hotels, as shown in Table 1. According to collected information, retail shops in the area play a complementary role in retailing horticultural produce, since the people mainly depend their demand on local cart vendors or Mandies nearby.

Table 1 Market Traders/Shops Interviewed

No	Name of Business Operator	Business	Position of Respondent
1	Pal Stores	Retail shop	Owner
2	Prabhat general store	Retail shop	Owner
3	Shiva Traders	Retail shop	Owner
4	Bahukhani traders	Retail shop	Owner
5	Chauhan Vegetable Store	Retail shop	Owner
6	Shri Ram general store	Retail shop	Owner
7	Lakshmi Vegetables	Retail shop	Owner
8	Café Bistro	Restaurant	Owner
9	Sangam Restaurant	Restaurant	Head of Sales
10	Hotel Moon In	Hotel	Procurement manager
11	Bigbazar	Supermarket chain	Department manager
12	Pant Daily needs	Retail shop	Owner
13	Fresh Mart	Restaurant	Owner
14	Haveli	Restaurant	Owner
15	Kebab King	Restaurant	Owner
16	Café Road side	Restaurant	Chef/Procurement in charge
17	Café Pinocchio	Restaurant	Owner
18	Phoenix Restro	Restaurant	Owner
19	Orchid	Restaurant	Owner
20	Hotel Solitare	Hotel	Owner

Source: Market Survey, The JICA Survey Team, July 2021

2. Popular Horticultural Produce

Table 2 shows popular horticultural produce among the informants. They declare the best 5 crops individually.

Table 2 Popular Horticultural Produce among the Informants

No	Crop	Retail shop/ Supermarket	Restaurant/ Hotel	Total
1	Beans	0	4	4
2	Cabbage	2	1	3
3	Capsicum	0	7	7
4	Carrot	0	7	7
5	Corn	0	3	3
6	Cucumber	1	2	3
7	Garlic	4	5	9
8	Ginger	1	0	1

No	Crop	Retail shop/ Supermarket	Restaurant/ Hotel	Total
9	Green Chili	2	0	2
10	Onion	4	7	11
11	Potato	9	8	17
12	Tomato	9	11	20
13	Seasonal Veges	1	0	1
14	Apple	5	0	5
15	Banana	3	0	3
16	Citrus	1	0	1
17	Mango	3	0	3

Source: Market Survey, The JICA Survey Team, July 2021

The popular vegetables are tomato, potato, onion and garlic, while the fruits are apple, banana and mango. Many informants say that those produce have a stable demand and are used for wide variety of cuisines. Capsicum (sweet paper), carrot and beans are also popular among informants running restaurants/hotels, while none of the informants declares fruits.

3. Major Suppliers

Table 3 shows major suppliers of horticultural produce to the informants.

Table 3 Major Suppliers of Horticultural Produce

No.	Suppliers	Retail shop/ Super-market	Restaurant/ Hotel	Total
1	Middleman/Wholesaler	9	10	19
2	Retailer	0	0	0
3	Farmers/FPO	0	1	1
4	Others	0	0	0

Source: Market Survey, The JICA Survey Team, July 2021

The informants procure the produce from middlemen/wholesalers except for one who procedure the produce from farmers with contract farming.

The most important concern of the informants to choose the supplier is “stable supply”, while informants running restaurants/hotels tend to value it much. Restaurants/hotels also relatively value “long relationship”, while the retailers don’t pay much attention to it.

Table 4 Major Reason to Choose the Suppliers

No	Reason	Retail Shop/Super-market			Restaurant/Hotel			Total		
		Highly Yes	Yes	No	Highly Yes	Yes	No	Highly Yes	Yes	No
1	Stable supply	2	7	0	7	4	0	9	11	0
2	Reasonable price	0	9	0	0	11	0	0	20	0
3	High quality produce	1	8	0	2	9	0	3	17	0
4	Long relationship	2	2	5	5	6	0	7	8	5

Source: Market Survey, The JICA Survey Team, July 2021

4. Dissatisfaction with Suppliers

The informants do not express seriously dissatisfaction with suppliers in general. Not a small number of them, however, are sometimes frustrated with “high price and “failure in agreement”. Some informants

running restaurants/hotels are also sometimes frustrated with “late supply”, though most retailers are not. They are basically satisfied with quality of produce supplied.

Table 5 Dissatisfaction with Suppliers

No	Reason	Retail Shop/Super-market			Restaurant/Hotel			Total		
		Yes	Some	No	Yes	Some	No	Yes	Some	No
1	Late supply	0	1	8	0	6	5	0	7	13
2	High price	0	8	1	0	10	1	0	18	2
3	Low quality	0	0	9	0	2	9	0	2	18
4	Failure in agreement	0	6	3	0	7	4	0	13	7

Source: Market Survey, The JICA Survey Team, July 2021

5. Important Quality Factors of Horticulture Produce

The informants are asked to declare considerable quality factors, i.e., “fresh/shiny”, “colour”, “shape”, “size” and “smell/aroma” for each popular crop listed in Table 2.

Table 6 Important Quality Factors

No	Crop	No. of Respondents	Total				
			Fresh/Shiny	Color	Shape	Size	Smell/Aroma
1	Beans	4	4	0	1	0	0
2	Cabbage	3	4	3	3	4	0
3	Capsicum	7	7	7	5	3	0
4	Carrot	7	7	6	3	4	0
5	Corn	3	3	1	0	0	0
6	Cucumber	3	2	2	1	1	0
7	Garlic	9	9	4	4	1	6
8	Ginger	1	1	0	0	0	0
9	Green Chili	2	2	1	0	0	0
10	Onion	11	11	0	4	7	0
11	Potato	17	17	2	6	16	0
12	Tomato	20	19	20	18	17	0
13	Seasonal Veges	1	1	1	1	0	0
14	Apple	5	5	5	5	4	0
15	Banana	3	3	3	3	2	0
16	Citrus	1	1	1	1	1	1
17	Mango	3	2	2	2	1	1

Source: Market Survey, The JICA Survey Team, July 2021

“Fresh/shiny” is the most considerable factor for all crops. Retailers and restaurants/hotels share similar concern for the quality factors. The informants almost evenly value the other factors except for “smell/aroma” for cabbage, capsicum, tomato and fruits. “Smell/aroma” is a considerable factor only for garlic, citrus and mango.

6. Promising Crops

Table 7 shows promising horticultural crops envisaged by the informants. They are asked to declare the best 5 promising crops.

Table 7 Promising Horticultural Produce

No	Crop	Retail shop/ Supermarket	Restaurant/ Hotel	Total
1	Beans	1	6	7
2	Broccoli	1	4	5
3	Cabbage	0	5	5
4	Capsicum	3	6	9
5	Carrot	1	0	1
6	Cauliflower	3	4	7
7	Corn	0	3	3
8	Cucumber	1	0	1
9	Garlic	2	4	6
10	Ginger	0	1	1
11	Green Chili	0	2	2
12	Onion	7	0	7
13	Peas	6	1	7
14	Potato	8	4	12
15	Tomato	2	2	4
16	Seasonal Veges	1	0	1
17	Apple	2	3	5
18	Banana	1	3	4
19	Citrus	3	1	4
20	Grapes	1	0	1
21	Papaya	1	0	1
22	Mango	1	2	3
23	Melon	0	1	1
24	Mushroom	0	3	3

Source: Market Survey, The JICA Survey Team, July 2021

While relatively diversified crops are declared, potato and capsicum are relatively highly valued vegetables and apple, banana and citrus are the valued fruits. Those line-upped crops are almost equal to the poplar crops as shown in Table 2, though cauliflower and peas are newly spotlighted crops. Some restaurants/hotels value mushroom as an exotic foodstuff.

7. Contract Farming

Only one (1) informant managing a restaurant procures horticultural produce with a contract farming. As shown in Table 8, most informants have a positive image to contract farming in general. However, the present status that only one (1) informant exploits a contract farming would represent real intention of the informants that they are still suspicious about the benefit from a contract farming.

Table 8 Important Quality Factors

No	Image	Highly	Slightly	No	Total
1	Low procurement cost	10	9	1	20
2	High quality of produce	12	7	1	20
3	Stable procurement	16	4	0	20
4	Social contribution (good reputation in running business)	13	7	0	20
5	Many troubles with farmers in managing the contract	0	9	11	20

Source: Market Survey, The JICA Survey Team, July 2021

8. Market Information Source

Popular market information sources for the informants are shown in Table 9.

Table 9 Market Information Sources

No	Sources	Popularity			
		Very much	To some extent	Less/no	Total
1	People in the same business	15	5	0	20
2	Commission agents	13	7	0	20
3	Traders/Middlemen	16	4	0	20
4	APMC	0	14	6	20
5	Websites (AGMRAKNET, etc.)	0	9	11	20
6	TV/Radio programs	0	6	14	20
7	Newspapers/Magazines	0	18	2	20

Source: Market Survey, The JICA Survey Team, July 2021

Colleagues and traders are the major information sources for the informants. The information is usually exchanged through the personal networks. While APMC and newspapers/magazines are complementary information sources for them, a limited number of them consider AGMRAKNET and TV/radio programs as a popular information source.

9. Interested Policy Measures

Interest level of the informants in the government policy measures to develop a supply chain of horticultural produce is shown in Table 10.

Table 10 Interest in the Government Policy Measures

No	Policy Measures	Interest			
		Highly	Slightly	No	Total
1	Introducing/developing new crops or new varieties	5	11	4	20
2	Improving farmers' skills in growing crops	6	6	8	20
3	Improving post-harvest handling skills of farmers	0	2	18	20
4	Promoting a contract-farming	0	0	20	20
5	Promoting to organize farmers in FPOs/FPCs, cooperatives, etc.	1	1	18	20
6	Improving post-harvest handling skills of traders/middlemen	1	5	14	20
7	Disseminating market information among stakeholders	1	1	18	20
8	Building a workable quality standard & inspection system	4	10	6	20
9	Facility construction & renovation of APMC markets to streamline the distribution	1	1	18	20
10	Promoting private operated markets	5	7	8	20
11	Promoting cold chain networks	10	6	4	20
12	Improving road networks and facilities	9	2	9	20
13	Disseminating information of new technologies	1	5	14	20
14	Enhancing capacity development programs/services for the private sector to promote their business operation	7	3	10	20
15	Enhancing financial support programs for the private sector to promote their investment	12	7	1	20
16	Promoting business partnership between local companies and outside companies including international companies	0	0	20	20
17	Introducing capital inflow from other states/countries	0	0	20	20

Source: Market Survey, The JICA Survey Team, July 2021

The most interested policy measure by the informants is “enhancing financial support programs for the private sector to promote their investment” followed by “promoting cold chain networks”, “introducing/developing new crops or new varieties” and “improving road networks and facilities”. A certain level of attention is paid to “improving farmers’ skills in growing crops”, “building a workable quality standard & inspection system”, “promoting private operated markets” and “enhancing capacity development programs/services for the private sector to promote their business operation”.

None of the informants pay attention to “promoting a contract-farming”, “promoting business partnership between local companies and outside companies including international companies” and “introducing capital inflow from other states/countries”. It is probable that the informants have feelings of resistance toward a partnership business with the third-party outsider.

Many informants recognize a lot of schemes implemented by the government supporting the supply chain, especially targeting farmers. They have made the following suggestion to the schemes.

- Delayed execution
- Complicated procedures
- A lot of departments concerned
- Generous support to farmers, but not much to other sectors

10. Investment Plan

Only one (1) informant (a retail shop) has a concrete plan to open a new shop within 2 years. Other informants are focusing on surviving themselves under the difficult business conditions caused by COVID-19.

Attachment 3.5.4 Market Survey in Delhi

(1) Survey outline

The survey was conducted in NCT Delhi. The informants were selected from various categories of the market stakeholders handling vegetables and fruits. The survey was conducted over the phone using the check list attached in section (3) below.

(2) List of Informants

The survey team targeted for 15 informants for the survey. The category wise list of informants is given in the table below.

No	Category	Location
1	Vegetable - Commission Agent	Azadpur Mandi Delhi
2	Vegetable - Commission Agent	Azadpur Mandi
3	Vegetable - Wholesaler	Azadpur Mandi Delhi
4	Vegetable - Commission Agent	Azadpur Mandi Delhi
5	Fruits - Wholesaler	Azadpur Mandi Delhi
6	Fruits - Wholesaler	Azadpur Delhi
7	Fruits - Commission Agent	Azadpur Mandi
8	Fruits - Commission Agent	Azadpur Mandi
9	Super Market	Delhi
10	Vegetables - Wholesaler	Azadpur, Delhi
11	Super Market	Delhi
12	Vegetables -Commission Agent	Azadpur, Delhi
13	Fruits & Veg High End Supermarket	Gurgoan
14	Fruits - Commission Agent	Azadpur Mandi
15	Vegetables -Commission Agent	Azadpur Delhi

Source: JICA Survey Team

(3) Survey Questionnaire

Check list for Key Informant Interview: Supply Chain Stakeholders

Informant ID:

Enumerator:	Date:
-------------	-------

1. Informant

Name of the Company/ Office/ Organization:

Location (District/ Block/ G. Panchayat or Municipality):

Name of the Informant:

Mobile Phone No:

2. Business Profile

Please tell us the type of business activities that your company/ office/ organization are engaged. (Please tick where applicable.)

No	Type of business activities	Please tick if Yes
1	Buying farm produce and selling or processing them	
2	Transporting farm produce	
3	Organizing an auction of farm produce	
4	Grading/sorting/packing farm produce before marketing	
5	Storing farm produce for a certain period	
6	Processing farm produce (dry, juice, puree, jam, pickles, etc.)	
7	Providing market information to farmers (prices, quality needs, etc.)	
8	Providing farmers technical assistance to improve crop productivity and quality	
9	Providing or arranging farm inputs to farmers	
10	Providing or arranging advance payment or credit to farmers	
<Describe other services if you have>		

3. Popular Commodities with Your Business

Please tell us the best five popular crops (vegetables & fruits & spices) in the market and their reasons.

No	Names of the Crops	*Reasons to Sell/Buy Much	Major Producing Areas (State/District), if you know
1			
2			
3			
4			
5			

Note: Information about the “reasons” shall be deeply analyzed through a dialogue with an interviewee in various aspects, such as, market demands, profitability, relationship with specific producers/customers, etc.
Marketing Channels

3.1 Please tell us from whom do you procure the crops (the best 5) from

No	Crops handled	*Seller 1		*Seller 2		*Seller 3	
1			%		%		%
2			%		%		%
3			%		%		%
4			%		%		%
5			%		%		%

- *Seller: 1. Producers/Producers' Group (direct procurement)
2. Local Collectors/Aggregators (buying the produce from local producers)
3. Inter-state traders (buying the produce from other states)
4. Commission agents of mandi in NCT Delhi
5. Commission agents of mandi outside NCT Delhi
6. Wholesalers (buying the produce from Commission agents/Local collectors/Inter-state traders)
7. Other (specify, if any)

3.2 Please tell us whom do you sell the crops (the best 5)

No	Crops handled	*Buyer 1		*Buyer 2		*Buyer 3	
1			%		%		%
2			%		%		%
3			%		%		%
4			%		%		%
5			%		%		%

- *Buyer: 1. Inter-state traders (selling the produce to other states)
2. Exporters (selling the produce to other countries)
3. Wholesalers (selling the produce to local Retailers/Supermarkets/Other wholesalers/Processors)
3. Retailers/Supermarkets (selling the produce to local consumers)
4. Restaurants/Hotels
5. Processing factories
6. Local consumers
7. other (specify, if any)

4. Quality

4.1 What are important quality factors of the best 5 crops?

No	Crop	Target Market	Quality Factor Please indicate the code below.					
			Fresh /Shiny	Color	Shape	Size	Smell/ Aroma	Other Important Factor (Specify)
1		General						
		High end						
2		General						
		High end						
3		General						
		High end						
4		General						
		High end						
5		General						
		High end						

Code: 1. Critically important 2. Important 3. Pay a little attention 4. No attention

*If any more crops are identified, please use overleaf.

4.2 What are the critical issues do you find when you procure the best 5 crops?

No	Crop	Quality Factor		
		(Please indicate the code below where applicable)		
		Serious	Some-times	Not Serious
1				
2				

3				
4				
5				

Code: 1 Not fresh, 2 Much damage due to rough handling, 3 Improper packing, 4 Not clean (not washed), 5 Not well sorted (various size, shape, maturity, etc.), 6 Mixed with foreign matter (intentionally for increasing volume/weight), 7 Small lot volume, 8 Unstable supply,
9. Others (Please specify:)

5. Economic Implication of Improvement in Cold Chain System

5.1 In your view, are the values of the commodity enhanced by introducing the following facilities and equipment?

Facilities/Equipment	Commodities				
Cold Storage					
CA Storage					
Refrigerated Vehicle					

Code: 1. Highly likely, 2. Not likely, 3. Not needed, 4. No point in investing, 5. Already proper storage available,
6. Others (Please specify:)

5.2 In the above, if you feel the values of a particular commodity can be enhanced by improving the cold chain system, please tell us to what extent it will enhance the value. For instance, % increment from the current profit margin.

Commodity	% added to the current profit margin	Other points to be noted

6. Promising Agricultural Produce in Delhi Market

6.1 Please tell us your evaluation of the demand for vegetables & fruits & spices in Delhi area.

No	Crop	Market Demand Evaluation (tick applicable one)					
		Present Demand			Future Prospects		
		High	So -So	Low	Increase	No change	Decrease
1	Brinjal (Eggplant)						
2	Cabbage						
3	Capsicum						
4	Cauliflower						
5	Chili (red)						
6	French beans						
7	Garlic						
8	Ginger						
9	Okra (Ladies Finger)						

10	Onion						
11	Peas						
12	Potato						
13	Radish						
14	Tomato						
15	Turmeric						
16	Apple						
17	Apricot						
18	Citrus						
19	Kiwi fruit						
20	Litchi						
21	Mango						
22	Peach						
23	Pear						
24	Plum						
25	Walnut						
	(Specify, if any others)						
26							
27							

6.2 Please tell us the best 5 promising vegetables & fruits & spices in Delhi area.in your expectation

No	Crops	*Reasons for the Expectation for High Market Demands
1		
2		
3		
4		
5		

Note: Information about the “reasons” shall be deeply analyzed through a dialogue with an interviewee in various socio-economic aspects, such as, demography, income, lifestyle, GOI’s policy, exporting, processing, etc.

7. Intention for Value Addition

If you have any plans to invest in facilities./ equipment for adding value of commodities, please briefly tell us.

8. Agricultural Produce from Uttarakhand State

8.1 Please tell us the popularity of the produce from Uttarakhand State in Delhi market

No	Crop	Popularity (tick applicable one)		
		High	Some	No/Less
1	Brinjal (Eggplant)			
2	Cabbage			
3	Capsicum			
4	Cauliflower			
5	Chili (red)			
6	French beans			
7	Garlic			
8	Ginger			

9	Okra (Ladies Finger)			
10	Onion			
11	Peas			
12	Potato			
13	Radish			
14	Tomato			
15	Turmeric			
16	Apple			
17	Apricot			
18	Citrus			
19	Kiwi fruit			
20	Litchi			
21	Mango			
22	Peach			
23	Pear			
24	Plum			
25	Walnut			

8.2 Please tell us a reputation of the produce from Uttarakhand State in Delhi market

No	Crop	Reputation (indicate the code below)				
		Taste	Appearance	Hygiene	Price	Supply Reliability
1	Brinjal (Eggplant)					
2	Cabbage					
3	Capsicum					
4	Cauliflower					
5	Chili (red)					
6	French beans					
7	Garlic					
8	Ginger					
9	Okra (Ladies Finger)					
10	Onion					
11	Peas					
12	Potato					
13	Radish					
14	Tomato					
15	Turmeric					
16	Apple					
17	Apricot					
18	Citrus					
19	Kiwi fruit					
20	Litchi					
21	Mango					
22	Peach					
23	Pear					
24	Plum					
25	Walnut					

Code: 1. Positive, 2. Neutral, 3. Negative, 4. No idea/Not see in Delhi market

9. Brand

9.1 Do you see the advantage in Uttarakhand as a brand in Delhi market? ☐ Yes ☐ No

If yes, what are the advantages?

9.2 What are the current image/ assessment of Uttarakhand as a brand?

9.3 What can be improved to gain better value as a brand? What are your expectations on Uttarakhand as brand?

10. Views on Supply Chain Promotion Policy of the Government, mainly focusing on the 2020 Farm Bills.
Please tell us your view on the supply chain promotion policy for fruits and vegetables of the Government.

END

Attachment 3.5.5 Traders of Horticultural Produce in Delhi

The JICA Survey Team, through its Indian staff, carried out an interview survey to 15 informants who are doing trading business of horticultural produce in Delhi in June 2021. This report discusses survey findings as shown below.

1. Informants

Table 1 is a list of informants. They are categorized into 3 groups, i.e., commission agents, wholesalers, and supermarkets. Commission Agents base in Azadpur Mandi (public market), Delhi. They either procure from big farmers, interstate traders or other commission agents outside Delhi. However, wholesalers may have a setup in Azadpur mandi or elsewhere in Delhi. They do not hold a commission agent license. These wholesalers mostly procure horticultural produce from commission agents and big farmers.

Table 1 Informants List

No	Category	Location
1	Vegetable - Commission Agent	Azadpur Mandi Delhi
2	Vegetable - Commission Agent	Azadpur Mandi Delhi
3	Vegetable - Wholesaler	Azadpur Mandi Delhi
4	Vegetable - Commission Agent	Azadpur Mandi Delhi
5	Fruits - Wholesaler	Azadpur Mandi Delhi
6	Fruits - Wholesaler	Azadpur Mandi Delhi
7	Fruits - Commission Agent	Azadpur Mandi Delhi
8	Fruits - Commission Agent	Azadpur Mandi Delhi
9	Super Market	Delhi
10	Vegetables - Wholesaler	Azadpur Mandi Delhi
11	Super Market	Delhi
12	Vegetables - Commission Agent	Azadpur Mandi Delhi
13	Fruits & Veg High End Supermarket	Gurgoan
14	Fruits - Commission Agent	Azadpur Mandi Delhi
15	Vegetable - Commission Agent	Azadpur Mandi Delhi

Source: Market Survey, The JICA Survey Team, June 2021

2. Business Activity

Table 2 shows major business activity of the informants. The table reveals that most of commission agents in Azadpur Mandi are not involved in organizing an auction, though one wholesaler is involved in. It is probable that there are many traders called as “wholesaler-cum-commission agents” in Azadpur Mandi who play a dual function in trading, one as a commission agent while the other as a wholesaler. Then, auction trading of horticultural produce is not prevailing in Azadpur Mandi at present.

More than a half of the informants are not involved in transporting and storing the produce.

Many informants, especially commission agents and supermarkets provide advance payments or a credit to farmers though other convenience, i.e., market information, technical assistance and farm inputs arrangements are almost not provided. Such reality implies that the relationship between the informants and farmers might be a patron-client relationship rather than an equal partnership.

Table 2 Business Activity of Informants

No	Business Activities	Commission Agents (8)			Wholesalers (4)			Supermarkets (3)			Total (15)		
		Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
1	Buying farm produce and selling them	8	0	8	4	0	4	3	0	3	15	0	15
2	Transporting farm produce	3	5	8	1	3	4	2	1	3	6	9	15
3	Organizing an auction of farm produce	1	7	8	1	3	4	0	3	3	2	13	15
4	Grading/sorting/packing farm produce before marketing	0	8	8	0	4	4	0	3	3	0	15	15
5	Storing farm produce for a certain period	2	6	8	3	1	4	2	1	3	7	8	15
6	Processing farm produce (dry, juice, puree, jam, pickles, etc.)	0	8	8	0	4	4	0	3	3	0	15	15
7	Providing market information to farmers (prices, quality needs, etc.)	1	7	8	2	2	2	0	3	3	3	12	15
8	Providing farmers technical assistance to improve crop productivity and quality	0	8	8	0	4	4	0	3	3	0	15	15
9	Providing or arranging farm inputs to farmers	0	8	8	0	4	4	0	3	3	0	15	15
10	Providing or arranging advance payments or a credit to farmers	7	1	8	0	4	4	2	1	3	9	6	15

Source: Market Survey, The JICA Survey Team, July 2021

3. Popular Horticultural Produce

Table 3 shows popular horticultural produce for the informants at present. Informants are asked to name up to the best-5 crops. The horticultural produce comes to the Delhi Market from different regions of the country depending upon the harvesting time of the different states & regions. The popular vegetables are onion, potato and tomato, potato, while the fruits are apple and citrus. Uttarakhand is recognized as a production area of 11 crops out of the 20 popular crops.

Major reasons for the popularity of the above crops are:

- Availability throughout the year
- The vegetables are used in almost all meals in Indian household
- The vegetables are used in multi cuisines throughout the year and therefore the demanded is much and stable comparing to seasonal vegetables
- The fruits are 1st choice of people, especially apple
- Citrus and Banana are preferred due to its low to moderate price as compared to other fruits and health benefits

Table 3 Popular Horticultural Produce at Present

No	Crop	Number of Informants	Major Production Area
1	Brinjal (Eggplant)	2	Bihar, Uttar Pradesh, Uttarakhand

2	Broccoli	2	Himachal Pradesh
3	Cabbage	3	Haryana, Punjab, Uttarakhand , Himachal Pradesh
4	Capsicum	3	Himachal Pradesh, Punjab
5	Carrot	2	Haryana, Punjab
6	Cauliflower	1	Haryana, Punjab, Uttarakhand
7	Lettuce	1	-
8	Onion	9	Maharashtra, Haryana, Gujrat, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, Rajasthan
9	Potato	9	Uttar Pradesh, Himachal Pradesh, Uttarakhand , Punjab, Bihar
10	Tomato	8	Himachal Pradesh, Haryana, Uttar Pradesh, Maharashtra, Uttarakhand
11	Garlic	3	Haryana, Rajasthan, Uttarakhand , Madhya Pradesh, Uttar Pradesh
12	Apple	8	Himachal Pradesh, Jammu Kashmir, Uttarakhand
13	Banana	3	Uttar Pradesh, Karnataka, Andhra Pradesh, Bihar, Maharashtra
14	Citrus	6	Gujrat, Karnataka, Maharashtra, Uttar Pradesh, Andhra Pradesh
15	Guava	1	Uttar Pradesh, West Bengal
16	Kiwi fruit	3	Arunachal Pradesh, Import
17	Litchi	3	Bihar, West Bengal, Uttarakhand
18	Mango	4	Uttar Pradesh, Maharashtra, Uttarakhand , Bihar
19	Peach	1	Himachal Pradesh, Jammu Kashmir, Uttarakhand
20	Plum	1	Himachal Pradesh, Jammu Kashmir, Uttarakhand

Source: Market Survey, The JICA Survey Team, June 2021

4. Major Customers

Table 4 shows customers of the informants.

Table 4 Customers of Informants				
<Commission Agents: 8>				
No	Customers	1 st important	2 nd important	3 rd important
1	Wholesalers	7	0	0
2	Retailers/Supermarkets	0	4	3
3	Restaurants/Hotels	1	3	1
4	Customers	0	0	0
5	Exporters	0	0	1
<Wholesalers: 4>				
No	Customers	1 st important	2 nd important	3 rd important
1	Wholesalers	0	0	0
2	Retailers/Supermarkets	2	2	0
3	Restaurants/Hotels	2	1	0
4	Customers	0	1	3
5	Exporters/Processors	0	0	0

Note: All supermarkets only sell to customers

Source: Market Survey, The JICA Survey Team, June 2021

All commission agents except one agent sell the produce mainly to wholesalers, while retailers/supermarkets and restaurants/hotels are their 2nd customers. One commission agent sells a small part of the produce to exporters.

In case of wholesalers, they sell the produce mainly to retailers/supermarkets or restaurants/hotels, depending on their business circumstances. Most of them sell a small part of the produce directly to customers. None of them sells the produce to exporters or processors.

5. Quality of the Produce

Table 5 shows quality evaluation of the horticultural produce marketed by the informants.

Table 5 Quality Evaluation of the Horticultural Produce Marketed

Crop	No of Answered Informants	Serious Problem								Sometimes Problem							
		a	b	c	d	e	f	g	h	a	b	c	d	e	f	g	h
Brinjal (Eggplant)	2	-	2	-	-	1	-	-	-	1	-	-	-	-	-	-	-
Broccoli	2	-	1	-	1	1	-	1	-	-	1	-	1	-	-	-	1
Cabbage	3	-	2	-	2	1	-	-	-	1	-	-	1	2	-	-	-
Capsicum	3	-	2	-	1	3	-	1	-	-	1	1	-	-	-	1	1
Carrot	2	-	1	-	-	2	-	-	-	-	1	-	-	-	-	1	-
Cauliflower	1	-	1	-	-	1	-	-	-	1	-	-	-	-	-	1	1
Lettuce	1	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-
Onion	9	-	8	-	1	5	-	-	1	5	-	-	3	3	1	1	4
Potato	9	-	6	1	4	4	-	-	-	3	-	-	1	3	-	1	2
Tomato	8	-	8	-	-	4	-	-	-	5	-	1	3	4	-	1	2
Garlic	3	-	3	-	-	2	-	-	-	2	-	-	1	-	-	1	2
Sub-total	43	0	34	1	10	24	0	2	1	18	4	2	10	12	1	7	13
Apple	7	2	4	-	-	1	-	1	-	-	1	-	1	5	-	-	-
Banana	3	-	3	-	-	1	-	-	-	-	-	-	1	1	-	-	-
Citrus	5	-	5	-	-	1	-	-	-	1	-	-	-	5	-	-	1
Guava	1	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Kiwifruit	2	-	2	-	-	1	-	-	-	-	-	-	-	1	-	1	-
Litchi	3	-	3	-	1	1	-	-	-	-	-	-	1	2	-	-	-
Mango	4	-	4	-	-	-	-	-	-	-	-	-	-	3	-	-	-
Peach	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plum	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total	25	2	22	0	1	6	0	1	0	1	1	0	3	17	0	1	1
Total	68	2	56	1	11	30	0	3	1	19	5	2	13	29	1	8	14

Note: a. Not fresh, b. Much damage due to rough handling, c. Improper packing, d. Not clean (not washed), e. Not well sorted (various sizes, shapes, maturity degrees, etc.), f. Mixed with foreign matter, g. Small volume of a lot, h. Unstable supply

Source: Market Survey, The JICA Survey Team, June 2021

The most serious quality issue for the informants is “Much damage due to rough handling” followed by “Not well sorted (various sizes, shapes, maturity degrees, etc.). In case of vegetables, nearly a half of the answered informants concern about “Not clean (not washed) and “Not fresh”. “Improper packing” and “Mixed with foreign matter” are not issues for most of them.

Usually, all the factors are important for a crop to be sold in the market at good rates. Mostly Freshness, colour, shape and size are equally importance for any crop, according to the informants. In case of fruits, size and colour are major important factors. Crunchiness is also an important factor for apples. Perishable shelf life is also considered while they procure the produce, especially in case of tomato and delicate seed fruits like apricot and plum.

6. Demand of Horticultural Produce in Delhi Market

Table 6 shows demand for major horticulture crops in Delhi Market envisaged by the informants. The table shows that Delhi Market has a high demand for almost major horticultural commodities except for egg plant, okra and radish. This means that Delhi Market is still expanding and diversifying due to concentration of the population and has a big capacity to absorb various kind of horticultural produce, if the price and the quality are reasonably balanced. The table also shows a prospective demand for the horticultural crops in the market. A lot of market informants are expecting a high potential of increased market demand for several spices (garlic, ginger and turmeric) which receive a wide recognition to medicinal benefits and fruits (apple, kiwifruit and mango) in future. They consider that the demand for vegetables does not have a high potential to increase in future though it keeps a steady trend. Exotic vegetables like broccoli, bell pepper (coloured), lettuce, etc. are, however, in the spotlight recently influenced by a health-conscious diet trend in line with the economic growth.

The following horticultural crops are relatively highlighted as promising crops by the informants considering the market circumstances.

Vegetables & Spices: Broccoli, Capsicum, Onion, Potato, Tomato and Garlic

Fruits: Apple, Banana, Citrus, Kiwifruit, Litchi and Mango

Table 6 Demand of Horticultural Produce in Delhi Market

No	Crop	Present Demand		Future Demand		No Answer /No Idea	Total Answers
		High	No-high	Increase	No-change		
1	Cabbage	7	2	4	5	6	15
2	Capsicum	9	0	5	4	6	15
3	Cauliflower	7	2	2	7	6	15
4	Chili (red)	7	2	0	9	6	15
5	Egg plant	4	5	0	9	6	15
6	French beans	7	2	3	6	6	15
7	Onion	9	1	3	7	5	15
8	Okra	3	6	0	9	6	15
9	Peas	8	1	2	7	6	15
10	Potato	9	1	3	7	5	15
11	Radish	0	9	0	9	6	15
12	Tomato	8	1	3	6	6	15
13	Garlic	10	0	8	2	5	15
14	Ginger	9	0	8	1	6	15
15	Turmeric	9	1	9	1	5	15
16	Apple	12	0	10	2	3	15
17	Apricot	10	2	2	10	3	15
18	Citrus	10	2	5	7	3	15
19	Kiwi fruit	10	1	11	0	4	15
20	Litchi	10	0	4	6	5	15
21	Mango	11	0	8	3	4	15
22	Peach	11	1	1	11	3	15
23	Pear	11	0	3	8	4	15

No	Crop	Present Demand		Future Demand		No Answer /No Idea	Total Answers
		High	No-high	Increase	No-change		
24	Plum	11	0	2	9	4	15
25	Walnut	7	1	6	2	7	15

Source: Market Survey, The JICA Survey Team, June 2021

7. Popularity of Horticultural Produce from Uttarakhand in Delhi Market

Table 7 shows popularity of major horticultural crops from Uttarakhand in Delhi Market recognized by the informants. Garlic and turmeric, and selected seasonal fruits (apricot, litchi, peach and plum) are well recognized by them, while no vegetables are included in the well-recognized commodities. The unfortunate thing is that apple, which is a representative horticultural produce from Uttarakhand, is not included in the commodities, as well.

The table implies that many market intermediaries in Delhi Market evaluate horticultural crops from Uttarakhand as the second or the third favourites, though they have recognized that Uttarakhand is a production area of many horticultural crops as shown in Table 3.

Table 7 Popularity of Horticultural Produce from Uttarakhand in Delhi Market

No	Crop	High	So-so	No/Less	No Answer	Total
1	Cabbage	1	7	1	6	15
2	Capsicum	1	7	1	6	15
3	Cauliflower	0	6	3	6	15
4	Chili (red)	5	3	0	7	15
5	Egg plant	0	3	6	6	15
6	French beans	0	2	6	7	15
7	Onion	0	1	8	6	15
8	Okra	0	0	8	7	15
9	Peas	6	3	0	6	15
10	Potato	4	6	0	5	15
11	Radish	0	2	6	7	15
12	Tomato	3	5	1	6	15
13	Garlic	10	0	0	5	15
14	Ginger	1	8	0	6	15
15	Turmeric	10	0	0	5	15
16	Apple	4	9	1	1	15
17	Apricot	13	0	0	2	15
18	Citrus	0	6	7	2	15
19	Kiwifruit	0	11	2	2	15
20	Litchi	13	0	0	2	15
21	Mango	3	7	3	2	15
22	Peach	11	2	0	2	15
23	Pear	0	9	4	2	15
24	Plum	12	0	0	3	15
25	Walnut	0	2	8	5	15

Source: Market Survey, The JICA Survey Team, June 2021

8. Suggestions to Uttarakhand Horticultural Produce to Gain Better Value

Many of the informants suggested that Uttarakhand should pay more attention to increase the volume of the marketed horticultural produce by the increased production to enhance their

presence in Delhi Market, as well as to improve the quality of the produce, especially by replacing old varieties of fruits with new ones as shown in Table 8. Many of them indicated that quality of the produce from Uttarakhand usually inferior to the produce from Himachal Pradesh and Jammu Kashmir in terms of taste, appearance, damage, and size. They, however, consider that Uttarakhand has a potential of early harvesting because of its advantageous agro-climate conditions over Himachal Pradesh & Jammu Kashmir.

Improvement of the post-harvest handling and treatment system such as careful sorting and packaging & handling are other critical technical issues to be addressed, since many of the informants are seriously concerned about damages of horticultural produce due to rough handling and mixture of various sizes, shapes and maturity degrees in a lot of the produce as shown in Table 5.

Table 8 **Suggestions to Uttarakhand Horticultural Produce to Gain Better Value**

No	Suggestion	Number
1	Increased volume of the marketed produce	9
2	Introduce new varieties/crops (for improving the quality)	8
3	Quality improvement	3
4	Improve logistics/transportation	2

Source: Market Survey, The JICA Survey Team, June 2021

9. Investment to Cold Storage Facilities & Refrigerated Truck

Table 9 shows the informants' recognition to economic feasibility of cold storage facilities for horticultural crops. It was observed that most of the wholesalers and commission agents prefer renting or leasing cold storage space for certain produce only. The table shows their divided expectation for investing in cold storage facilities except for the investment in apple storage. Someone has a positive expectation, while the other has a negative expectation. The dichotomous views imply that they are not confident of a certain benefit from the investment except for apple, due to relatively high operation costs of the facilities, a fickle market circumstance of horticultural produce and unaccomplished technology applicable for many horticultural produces at field level. Many of the informants have a positive image of CA (Controlled Atmosphere) storage, as they believe that a CA storage keeps the produce 100% fresh with an absolute texture. However, CA storages are expensive as compared to an ordinary cold storage system. Only limited wholesalers or supermarkets use CA storages depending upon their budget availability.

A refrigerated truck is needed for long distance transportation when the informants produce the produce from Bihar, Kolkata, Maharashtra, and the Southern States of India. It keeps a shelf life of the produce better and fresh. Mostly commission agents hire a refrigerated truck service on contract basis.

Table 9 Expected Economic Value Improvement by Cold Storage Facilities

No	Crop	Total Answers	Cold Storage			CA Storage		
			Highly likely	Not likely	No need/ No Answer	Highly likely	Not likely	No need/ No answer
1	Broccoli	2	0	2	0	2	0	0
2	Cabbage	3	0	3	0	1	1	1
3	Capsicum	3	0	3	0	1	1	1
4	Carrot	2	0	2	0	1	1	0
5	Cauliflower	1	0	0	1	1	0	0
6	Egg plant	2	0	2	0	0	0	2
7	Lettuce	1	1	0	0	1	0	0
8	Onion	9	1	5	3	3	4	2
9	Potato	8	0	5	3	2	4	2
10	Tomato	8	5	3	0	4	2	2
11	Garlic	3	0	1	2	1	2	0
12	Apple	8	8	0	0	7	1	0
13	Banana	3	0	3	0	2	1	0
14	Citrus	6	1	5	0	1	5	0
15	Guava	1	0	1	0	0	1	0
16	Kiwi Fruit	3	1	2	0	2	1	0
17	Litchi	3	0	3	0	1	2	0
18	Mango	3	0	3	0	1	2	0
19	Peach	1	0	1	0	1	0	0
20	Plum	1	0	1	0	1	0	0

Source: Market Survey, The JICA Survey Team, June 2021

10. GOI's Agricultural Market Reform Policies

The informants are generally reticent on GOI's agricultural market reform policies, often referred to as the 2020 Farm Bills. Their views on the policies slit equally into 3 groups, i.e., positive, negative and neutral. Commission agents tend to have negative views while supermarkets tend to have the opposite views.

Table 10 Views on Market Reform Policies of GOI

No	Category	Positive	Negative	Neutral
1	Commission Agents (8)	1	4	3
2	Wholesalers (4)	2	1	1
3	Supermarkets (3)	2	0	1
Total		5	5	5

Source: Market Survey, The JICA Survey Team, June 2021

Attachment 3.5.6 Agribusiness Industriesin Uttarakhand

Large Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Nature of Enterprise/Product
1	PARLE AGRO PRIVATE LIMITED kapil.kumar@parleagro.com	U S nagar	Sector 3 Integrated Industrial Estate Village Lalarpatti and Lalarkhas	Wine, cider, fruit juices etc.
2	CORBETTIGER BEVERAGES PRIVATE LIMITED amitjain_27@yahoo.com	U S nagar	GRAM NAULI, KICHHA SITARGANJ ROAD, NEAR LAL KUAN STONE CRUSHER, AJITPUR, KICHHA, UTTARAKHAND	Beer
3	ZIPPY EDIBLE PRODUCTS PRIVATE LIMITED accounts@zippyedibles.com	U S nagar	VILLAGE TALABPUR, THAKURDWARA ROAD, JASPUR	Macaroni, noodles, couscous and similar farinaceous products
4	MEGHDOOT PACKAGING UTTARANCHAL skapoor@mcpindia.co.in	U S nagar	KHATA NO. 00214, KHASRA NO. 90K, VILLAGE JAFARPUR, DINESHPUR ROAD, POST KHANPUR-01TEHSIL RUDRAPUR	Corrugated paper board containers
5	Devarpan foods private limited dfpl@kvspremier.com	U S nagar	narain nagar industrial estate,bazpur road	Cereal breakfast foods obtained by roasting or swelling cereal grains
6	GUJARAT AMBUJA EXPORTS LTD ua@ambujagroup.com	U S nagar	Plot no c37c, c60G and C60H ESIP Sitarganj	Starch products n.e.c.
7	Microbrew Bistro Private Limited anil@kejri.com	U S nagar	Uttar Industrial Estate, Vill Mahuakheraganj	Distilled alcoholic beverages such as whisky, brandy, gin, "mixed drinks" etc.
8	ACHINT AND APARNA AGRO PRODUCTS PRIVATE LIMITED rahuul.jethi@gmail.com	U S nagar	HIMALAYAN FOOD PARK, MAHUAKHERA GANJ	Macaroni, noodles, couscous and similar farinaceous products
9	DWARIKA FOOD PRODUCTS dwarikafoodproducts@gmail.com	U S nagar	Khet No.622, Village-Simla Pistaour, RUDRAPUR	Macaroni, noodles, couscous and similar farinaceous products
10	Shanti Frozen Foods shantifrozenfoods@gmail.com	U S nagar	Himalayan Food Park, Mahuakhera-ganj	Preservation of fruit and vegetables n.e.c.
11	ANAND FOODS himanshuarora1979@yahoo.com	U S nagar	jagatpur patti	Preservation of fruit and vegetables n.e.c.
12	JAI KISSAN FOODS canaveenarora@gmail.com	U S nagar	VILLAGE NIJHRA	Preservation of fruit and vegetables n.e.c.
13	STELLAR COLD CHAIN INC apurvjindal@jvpl.in	U S nagar	khasra no 15/1,New Khasra No 66 Min Vill. Hempur Ismail Narayan Nagar I.E. Bazpur Road Kashipur	Warehousing of refrigerated (cold storage)
14	Shivanya Frozen Food products uksharma88@yahoo.com	U S nagar	VILL.PAIGA ALIGANJ ROAD KASHIPUR	Fruit or vegetable juices and their concentrates, squashes and powder
15	AGARWAL FROZEN FOODS agarwalfrozenfoods@gmail.com	U S nagar	VILLAGE SHIMLA PISTOUR MALSA ROAD RUDRAPUR	Canning of fruits and vegetables
16	S K FROZEN FOODS jindal@hotmail.com	U S nagar	Village Mahuakheraganj	Preservation of fruit and vegetables n.e.c.
17	Drink Tek LLP anil@varahi.in	U S nagar	Plot 25A Sector 2 IIE SIIDCUL Pantnagar	Mineral water
18	Parle Agro Private Limited compliance@parleagro.com	U S nagar	Sector 3, Phase II, SIDCUL, Sitarganj	Fruit or vegetable juices and their concentrates, squashes and powder
19	ROQUETTE INDIA PRIVATE LIMITED ANSHUMAN.KUSHWAHA@roquette.com	U S nagar	IIE Panatnagar	Starch products n.e.c.
20	Parle Agro Private Limited compliance@parleagro.com	U S nagar	Sector 3 Phase II SIDCUL Sitarganj	Fruit or vegetable juices and their concentrates, squashes and powder
21	Skuas Breweries And Beverages Private Limited skuas.breweries@gmail.com	U S nagar	IIE SITARGANJ PHASE 2	Beer
22	TOMAR FOODS PRIVATE LIMITED saurabh.kashipur64@gmail.com	U S nagar	HIMALAYAN FOOD PARK, MAHUAKHERA GANJ, KASHIPUR	Bakery products n.e.c.
23	GUPTA AGRO PRODUCTS sushil@gapmail.in	U S nagar	GUPTA AGRO PRODUCTS Vill - Bichpuri Tesh- Bazpur	Other semi-processed, processed or instant foods n.e.c., egg powder, sambar powder etc.
24	Mbev Spirits Private Limited anil@mbevs.com	U S nagar	Khasra no. 933, 934, 936, 937, 938, 940, village- Mahuakheraganj, Tehsil- Kashipur	Malt liquors and malt n.e.c.
25	R.K.FOOD PRODUCTS rkfoodproductskashipur@gmail.com	U S nagar	R.K.FOOD PRODUCTS VILL.PAIGA ALIGANJ ROAD KASHIPUR	Preservation of fruit and vegetables n.e.c.
26	BAHL PAPER MILLS LIMITED bahlprojects@gmail.com	U S nagar	Khasra No. 11,13,14,16K,16D,443,450 452, Vill- Banskhera Khurd& Girdhai, 5 Km. Stone, Aliganj Road,Kashipur	Corrugated paper and paperboard
27	PSB PAPERS PRIVATE LIMITED psbpapers@gmail.com	U S nagar	Beria Road\r\nBazpur	Corrugated paper and paperboard

Large Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Nature of Enterprise/Product
28	Texas Breweries & Beverages Private Limited corp@texas-breweries.com	U S nagar	S4-3 IIE ESCORT FARM KASHIPUR	Beer
29	Nature Frozen Foods natureffstore@gmail.com	U S nagar	Bannakhera, Bazpur	Preservation of fruit and vegetables n.e.c.
30	RADICO KHAITAN LIMITED sharmad@radico.co.in	U S nagar	PLOT NO B-2, SIDC KASHIPUR	Malt liquors and malt n.e.c.
31	WAFAT AGRO INDUSTRIES PRIVATE LIMITED waftagroindustries@gmail.com	U S nagar	VILL - NADEHI, JASPUR	Glucose, glucose syrup, maltose etc.
32	Kiran Foods office.kiranfoods@gmail.com	U S nagar	Kiran Foods\r\nKhet no. 49, Gram Bhanga, Tehsil- Kichha, Block Rudrapur	Preservation of fruit and vegetables n.e.c.
33	GIR Dairy Farming Products Private Ltd girdairyfarming@gmail.com	Haridwar	kharsa no. 219 to 225, vill nalheri, deveeharan	Dairy products
34	Uttam Sugar Mills Limited Distillery Division jiteshgupta201516@gmail.com	Haridwar	Uttam Sugar Mills Limited Libberheri Roorkee Haridwar Utrrakhand	Organic and inorganic chemical compounds n.e.c.
35	Uttam Distilleries Limited uttamdistilleryahmedpur@gmail.com	Haridwar	Ahmedpur Grant Bhadrabad Haridwar Utrrakhand	Organic and inorganic chemical compounds n.e.c.
36	Saiswaram Paper Products moeen@saiswaram.in	Haridwar	KHALATIRA	Paper cups, saucers, plates, hoops, cones and other similar products
37	ABDOS LAMITUBES PRIVATE LIMITED (UNIT-III) joshi@abdosindia.com	Haridwar		Plastics products n.e.c
38	GIR DAIRY FARMING PRODUCTS PRIVATE LIMITED binushukla@hotmail.com	Haridwar	Khasra number 219-223 & 225, Village Nalheri Deveeharan, Tehsil Roorkee	Retail sale of cereals and pulses, tea, coffee, spices and flour
39	Individual Quick Frozen for Green Pea dgmduem@gmail.com	Haridwar	Naveen mandi Sthal, Manglore Mandi, Near village- Kurdi	Preservation of fruit and vegetables n.e.c.
40	GREENDOT HEATH FOODS PVT LTD hr@greendotfoods.com	Haridwar	KHASRA NO. 64 SHIV GANGA INDUSTRIAL ESTATE LAKESHWARI BHAGWANPUR	Bakery products n.e.c.
41	Gir Jaggery unit of Gir Dairy Farming products Private Limited binushukla@hotmail.com	Haridwar	Village Nalheri Deeveeharan, Tehsil Roorkee	Gur' from sugarcane
42	Uttarakhand Forest Resource Management Society divineengineers4@gmail.com	Dehradun		Activities of extraterritorial organizations and bodies
43	India Glycols Limited hem.k.sanwal@indiaglycols.com	Dehradun	Plot 2-5 Pharmacy Selaqui	Essential oils; modification by chemical processes of oils and fats (e.g. by oxidation, polymerization etc.)
44	Kimaya Himalayan Beverages LLP abhinav@kimayahimalayan.com	Tehri garhwal	Vill Khairar, Patti Laloor	Beer
45	Shri Dev Suman Agri Cluster dgmduem@gmail.com	Tehri garhwal	Village- Nautha, Tehsil- Dhanaulti	Fruit or vegetable juices and their concentrates, squashes and powder
46	Uttarakhand Agriculture Produce Marketing Board dgmduem@gmail.com	Uttarkashi	Vill-Jhala (Harsil) , Block- Bhatwari	Warehousing of refrigerated (cold storage)
47	BHARAT ELECTRONICS LIMITED akvashisth@bel.co.in	Pauri garhwal	VILLAGE BALBHADRAPUR, KOTDWARA Pauri	Treatment of waste water or sewer by means of physical, chemical or biological processes
48	Always Fresh Fruits CA Store alwaysffca@gmail.com	Nainital	Village Naya Goan Zulfikar, Tehsil Kaladunghi	Preservation of fruit and vegetables n.e.c.

Source : Directorate of Industries, Uttarakhand

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1	surat singh chauhan atta chakki Email: dineshchauhandinu5@gmail.com	Dehradun	vill vyas bhood, kalsi gate, po. kalsi uttarakhand	MICRO	Flour milling
2	SHRI BALA JI TRADING COMPANY Email: shribalaji2017@rediffmail.com	Dehradun	KHASRA NUMBER 1272 MI, VILLAGE LANGA ROAD INDUSTRIAL AREA, VILLAGE CHARBBA, TEHSIL VIKASNAGAR	SMALL	Wholesale of cereals & pulses
3	Banwari Lal Bakhtawer Singh Email: sarvajay.6.9@gmail.com	Dehradun	Bhimawala	MICRO	Rice milling
4	SHAAD PACKERSEmail: shaadpackers86@gmail.com	Dehradun	Khasra Number 122/13 Mauza Central Hope Town pargana pachwa Doon Distt Dehradun	SMALL	Manufacture of corrugated paper board containers
5	Jyoti plastic industry Email: hemant976046039@gmail.com	Dehradun	Ranipokhri, Dehradun	MICRO	Manufacture of structural wooden goods
6	MAC INDUSTRY Email: vishalmonga24@gmail.com	Dehradun	Vill Haripur, Pargana-jaunsar babar, Tehsil Kalsi	SMALL	Flour milling
7	AFS DEHRADUN IOCL Email: ansarim@indianoil.in	Dehradun	JOLLY GRANT AIRPORT, JOLLY GRANT	SMALL	Storage and warehousing n.e.c.
8	Maa Shakumbhari Enterprises Email: rakeshgpai@yahoo.com	Dehradun	Plot No A-16	MICRO	Grinding and processing of spices
9	PACKLABS Email: packlabsindia@gmail.com	Dehradun	VILLAGE RAMPUR SARA INDUSTRIAL ESTATE LTD	MEDIUM	Manufacture of corrugated paper and paperboard
10	ASTRATEQ ENTERPRISE Email: astrateqent@gmail.com	Dehradun	E-09, Government Industrial Estate,Patel Nagar	SMALL	Packaging activities
11	NEUTRAWELL HEALTHCARE PRIVATE LIMITED Email: neutrawell@gmail.com	Dehradun	KHASRA NO.-323 , CENTRAL HOPE TOWN , SELAQUI	SMALL	Manufacture of cocoa products
12	Uttarakhand Printer & Packers Email: uttarakhandpp@gmail.com	Dehradun	Langha Road, selaqui dehradun	SMALL	Manufacture of packing paper
13	Quanto agroworld private limited Email: shreebalaji454@gmail.com	Dehradun	Langha Road, Industrial Area, Sahaspur	SMALL	Growing of plants used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes
14	RIDERO PRODUCTS Email: rideroproducts@gmail.com	Dehradun	Twin Industrial Area, Central Hope Town	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
15	High Altitude Center for Wellness Tourism with Aromatic and Medicinal plants Email: jmarwah01@yahoo.in	Dehradun	Duggal Villa Library, Mussoorie	SMALL	Growing of perennial and non-perennial spices and aromatic crops
16	Esh Aroma Farm Tourism Email: chamolirohan12@yahoo.com	Dehradun	2, Bullawala near Rajaji Tiger Reserve, Bullawala, Doiwala	SMALL	Growing of perennial and non-perennial spices and aromatic crops
17	Sumidh Organic Agro Life Email: rajesh.pandey.k@gmail.com	Dehradun	Dehradun	MICRO	Growing of mushrooms and truffles
18	S.K.Industries Email: narayanasaka@gmail.com	Dehradun	Khasra no.225, Shed no.3, Dhalwala, Rishikesh Dehradun	SMALL	Manufacture of corrugated paper and paperboard
19	PRO PACKAGING Email: mishrad596@gmail.com	Dehradun	Khasra no.225, Dhalwala, Rishikesh,Dehradun-249137 Dehradun	SMALL	Packaging activities
20	Shree Ganesh Roller Flour Mills Email: shreeganeshrfm@yahoo.in	Dehradun	Shree Ganesh Roller Flour Mills\r\nMohebewala Industrial Area, \r\nSubhash Nagar, Dehradun Dehradun	MICRO	Flour milling
21	Bhagwati Dal Mill Email: amitjuly02@gmail.com	Dehradun	Plot A-10 mini industrial area, vikasnagar, Dehradun Dehradun	MICRO	Dal (pulses) milling
22	Mochiko Shoes Pvt Ltd - Ware house-1 Email: avinash.jaiswal@mochiko.in	Dehradun	Khasra no. 3946, 3947, 3962 & 3963\r\nLal Tappar,\r\nDehradun - 248140 Dehradun	MICRO	Warehousing non-refrigerated
23	Mochiko Shoes Pvt Ltd - Warehouse-2 Email: avinash.jaiswal@mochiko.in	Dehradun	Khasra no. 3946, 3947, 3962 & 3963\r\nLal Tappar \r\nDehradun -248140 Dehradun	MICRO	Warehousing non-refrigerated
24	UTTRA NATURAL PHADI PRODUCT Email: suraj5538rauthan@gmail.com	Dehradun	MOJA KUANWALA DEHRADUN Dehradun	MICRO	Growing of pulses (dal) and other leguminous crops
25	Shanti Spawn Lab and Farms Email: shantispawnlab@gmail.com	Dehradun	Khasra No. 1029, Central Hope Town, Selaqui, Dehradun. 248011 Dehradun	MICRO	Growing of mushrooms and truffles
26	Secure Technopack Private Limited Email: accounts.manager@zircontech.com	Dehradun	Plot No- 15, Twin Industrial Estate Industrial area Selaqui. Dehradun	SMALL	Manufacture of packing paper
27	rice mill Email: rajnisaini3337@gmail.com	Dehradun	RAJNI SAINI W\O VARUN SAINI VILL- BHIMAWALA VIKASNAGAR DEHRADUN UTTARAKHAND Dehradun	MICRO	Rice milling
28	S S Industries Email: surendra231978@gmail.com	Dehradun	Plot No. F-27, Industrial Area, Selaqui, Dehradun Dehradun	SMALL	Packaging activities
29	Madhu Ahluwalia Email: madhu.ahluwalia@marwahaassociates.com	Dehradun	D-7, Industrial Area,\r\nSelaqui, Dehradun- 248011 Dehradun	MICRO	Warehousing non-refrigerated
30	Sadhuram Email: vinitpegwal@gmail.com	Dehradun	Hno-133 Village- Dharmuchak - Po. Doiwala DEhradun Dehradun	MICRO	Grinding and processing of spices
31	S.V. BOND MANUFACTURERES PRIVATE LIMITED Email: svbond@marwahaassociates.com	Dehradun	F-88, Industrial Area, Selaqui, Dehradun- 248011 Dehradun	MICRO	Warehousing non-refrigerated
32	NITYA PACAKAGING Email: sugupta.dit@gmail.com	Dehradun	KHAIRI KALAN\KHURD SHYAMPUR, HARIDWAR ROAD 249201 Dehradun	SMALL	Manufacture of corrugated paper board containers
33	KAMAL PACKAGING Email: kamalpackaging30@gmail.com	Dehradun	1347/22 NEW KHASRA NO. 556 KHA MAUJA CHHABRA LANGHA ROAD VIKAS NAGAR DEHRADUN Dehradun	SMALL	Manufacture of corrugated paper board containers
34	pitambara flour and oil mill Email: vish21singh@gmail.com	Dehradun	vill. chotuwala, gramsabha badamawala, vikas nagar road, tehsil vikas nagar dehra dun 248198 Dehradun	MICRO	Growing of wheat

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
35	New Shakti Traders Email: aryanchaudhary001@yahoo.com	Dehradun	Main Chakrata Road, Line Jeevanganrh (Bamanpur), Teh.- Vikas Nagar Dist.- Dehradun. Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
36	CHAUHAN BEEJ BHANDAR Email: ps0272482@gmail.com	Dehradun	MANDI ROAD VIKASNAGAR DEHRADUN UK Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
37	CHICHI ATTA CHAKKI Email: parvez_siddiqui786@yahoo.com	Dehradun	Sanskriti Lok Colony, Brahmanwala, Haridwar Bypass Road, Dehradun Dehradun	MICRO	Grinding and processing of spices
38	SH ENTERPRISES Email: yash4986@gmail.com	Dehradun	Near Kalptaru Asharam, Near Nepali Farm Shyampur Rishikesh . Dehradun	MICRO	Whole sale of other agriculture raw materials n.e.c.
39	NIRMAL JK INDUSTRIES Email: sanjeevkgupta1970@rediffmail.com	Dehradun	A-7, GOVT INDUSTRIAL ESTATE VIKAS NAGAR JEEVAN GARH DEHRADUN UTTARAKHAND Dehradun	SMALL	Grinding and processing of spices
40	Himalyee Udyog Email: himalayeeudyog@gmail.com	Dehradun	1-2, Basement, Vanshika Tower, GIC Road, Phoolchaur, Haldwani Dehradun	MICRO	Flour milling
41	RANA PESTISIDE KATHIYAN Email: manishsinghrana321@gmail.com	Dehradun	RETAIL OF PESTICIDE AND FURTILISER Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
42	LBM Associates Email: mohanlalit7119@gmail.com	Dehradun	Habanswala, telpur chowk , mehuwala dehradun Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
43	S.S. PACKAGING Email: sspackagingddn@gmail.com	Dehradun	G 49-50, Industrial Area, Selaqui, Dehradun. Uttarakhand Dehradun	SMALL	Manufacture of corrugated paper and paperboard
44	Arceli Agribiz Private Limited Email: accounts@arceli.in	Dehradun	305/307, MOJA CENTRAL HOPE TOWN, SELAQUI INDUSTREAL AREA,UTTARAKHAND, DEHRADUN, Dehradun, Uttarakhand, 248011 Dehradun	SMALL	Other post harvest crop activities, n.e.c.
45	m/s Shubham Foods Email: shubhamfoods001@gmail.com	Dehradun	Khasra no. 1036 Central hope town,Selaqui Dehradun	MICRO	Dal (pulses) milling
46	Termokil Email: moniyaldayal1993@gmail.com	Dehradun	TRIVENI VIHAR,SEWLA KALAN,NEAR TRANSPORT NAGAR Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
47	BHARAT PESTICIDES AVAM BEEJ BHANDAR Email: pravesghasauti@gmail.com	Dehradun	VILL JASOWALA, PO JASOWALA, VIKASNAGAR, DEHRADUN Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
48	Sanjeevani Agrofoods Pvt Ltd Email: vijaykannojiya@gmail.com	Dehradun	Khasra No. 148Cha, Mohabbewala Industrial Area, Dehradun Dehradun	SMALL	Flour milling
49	R KED GROUP OF COMPANY Email: nsc.northen@live.in	Dehradun	Near Dinyali Devi Mandir ,Kheri Kala , Shyampur , P O S N Tample Rishikesh Dehradun	MICRO	Grinding and processing of spices
50	Athgaon phal awam sabzi utpadak swayat sahkarita Email: aathgaon123@gmail.com	Dehradun	Athgaon phal awam sabzi utpadak swayat sahkarita, village and post- Punah pokhri, gairidhar, chakrata, dehradun Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
51	KRISHI SEVA KENDRA Email: muneshchauhan19@gmail.com	Dehradun	MANDI GATE VIKASNAGAR DEHRADUN U.K Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
52	REDHILL HERBALS PRIVATE LIMITED Email: srirajkota@gmail.com	Dehradun	G-87 U.P.S.I.D.C INDUSTRIAL AREA \r\nDEHRADUN Dehradun	MICRO	Grinding and processing of spices
53	UTTARAKHAND PESTICIDES Email: pardeepkumar251259@gmail.com	Dehradun	UTTARAKHAND PESTICIDES\r\nMANDI GATE\r\nVIKASNAGAR 248198 Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
54	Gupta Beej Bhandar Email: A9634288796@gmail.com	Dehradun	Gupta Beej Bhandar C/o Amit kumar Gupta\r\nVill - Tiparpur (Dandipur) , PO: Sabhawala Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
55	DASHMESH TRADERS Email: kulvinder.singh1616@gmail.com	Dehradun	Signiwala chowk near shivalik collage Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
56	HLV AGRI INDUSTRIES Email: pradeepkumar99972@gmail.com	Dehradun	VILL LAXMIPUR, JHANJRA, PO. UMEDPUR, DEHRADUN Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
57	Sheri-Punjab Agencies Email: tech21@acplgroupindia.com	Dehradun	74-B, Race Course, Dehradun-248001 Dehradun	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
60	Shyama Bhog Agro Products Email: rishabh Bansal2603@gmail.com	Nainital	Kishanpur Sarkulia, Motinagar	MICRO	Flour milling
61	KUMAR SEEDS Email: sanjay.kumaragarwal@yahoo.com	Nainital	RAMNAGAR	MICRO	Seed processing for propagation
62	shri siddhi vinayak flour mill & rice mill Email: sk291113@gmail.com	Nainital	peerumadara kashipur roadramnagar	SMALL	Growing of wheat
63	KAUSHLYA FOOD PRODUCTION Email: mohanlalsharma.fmll@gmail.com	Nainital	parwati kunj udaipuri chopra phase 1 peerumdara	MICRO	Flour milling
64	DURGA HYGENIC FOOD PARK Email: tcjoshi78@gmail.com	Nainital	udaipuri bailparo tehsil-kaladhungi	SMALL	Preservation of fruit and vegetables n.e.c.
65	Royal Oak Bakery Email: tarun.kanjolia@gmail.com	Nainital	vill khabrar, ramgarh, mukteshwar road, nainital	MICRO	Manufacture of biscuits, cakes, pastries, rusks etc.
66	manak agro Email: ssachin_mittal@rediffmail.com	Nainital	manak agro village - naya gao chandan sing	SMALL	Flour milling
67	JAI SHRI ATTA CHAKKI Email: ck501.works@gmail.com	Nainital	JAMRANI ROAD JAWAHAR JYOTI DAMUWADHUNGA	MICRO	Flour milling
68	ANSH SEED AGRO Email: rahulkamboj1816@gmail.com	Nainital	narottampur post bail pokhra	SMALL	Growing of vegetable seeds (except beet seed)
69	bisht atta chakki Email: bisht.fl@gmail.com	Nainital	vill kamlwaganja ganja gaur post kamlwaganja ganja	MICRO	Flour milling
70	A B FOOD Email: HIMANSHUTIWARI770@GMAIL.COM	Nainital	VILL- HARIPUR DHAMOLA TEHSIL KALADHUNGI	SMALL	Flour milling
71	SAV engeering Email: joshi.of.amit7@gmail.com	Nainital	guljarpur banki kaladhungi	SMALL	Packaging activities
72	hsr enterprises Email: hsrflexipack@rediffmail.com	Nainital	guljarpur banki kaladhungi	SMALL	Packaging activities
73	anandi traders Email: jodhasingh8090@gmail.com	Nainital	vill and post anwlakot kotabagh	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
74	Dura SHG Email: durgashgn@gmail.com	Nainital	h.no 32 , Naul , Naukuchiyatal road	MICRO	Other grain milling and processing n.e.c.
75	A B FOOD Email: himanshutiwari770@gmail.com	Nainital	VILL- HARIPUR DHAMOLA TEHSIL KALADHUNGI	SMALL	Growing of wheat
76	RUDRA FOODS INDUSTRIES Email: arjungoyal114@gmail.com	Nainital	padampur sodiya	SMALL	Grain milling other than wheat, rice and dal
77	ABHINAV FOODS PRODUCTS Email: hctiwari8@gmail.com	Nainital	JOSHI KHOLA DABUR BADI BETALGHAT NAINITAL	SMALL	Manufacture of biscuits, cakes, pastries, rusks etc.
78	satpal singh Email: satpalsinghhld6@gmail.com	Nainital	vill lalpur nayak	MICRO	Growing of other oil seeds
79	baankee packaging unit Email: kirtipatwal@gmail.com	Nainital	vill;puchadi ramnagar	MICRO	Packaging activities
80	shivam masala company Email: goel.mahesh0007@gmail.com	Nainital	dvelchaur bandobasti rampur road haldwani	MICRO	Grinding and processing of spices
81	RASHI FLOUR AND MASALA UNIT Email: tamta.bhuvan@gmail.com	Nainital	VILLAGE VIDRAMPUR	MICRO	Flour milling
82	M S DURGA GRAMIN AANWLA UTPAD Email: dgau.kaladhungi@gmail.com	Nainital	vill mankantpur po pawalgarh	MICRO	Preservation of fruit and vegetables n.e.c.
83	SHIV SAI INDUSTRIES Email: deepak.ssp@gmail.com	Nainital	SIIDCUL BHIMTAL	SMALL	Manufacture of corrugated paper and paperboard
84	BHAGWATI PACKAGING Email: prakashsbisht.uk@gmail.com	Nainital	vill dhanpur	SMALL	Packaging activities
85	Ms sonu agro products Email: mmgoraya@gmail.com	Nainital	vill-vijaypur dhamola	MICRO	Flour milling
86	Dhanveer roller flour mill Email: dhanveerroller@gmail.com	Nainital	Dharia	SMALL	Growing of wheat
87	Adbhut Udyam Email: adbhutudyam@gmail.com	Nainital	Saliakot Talla,	SMALL	Growing of apples
88	HARI LAGHU UDYOG Email: harilaghuudyog@gmail.com	Nainital	VILL BHATLANI POST KOTABAGH TEH KALADHUNGI	MICRO	Flour milling
89	Gauri shankar budhlakoti Email: gauribudhlakoti@gmail.com	Nainital	kamola	MICRO	Flour milling
90	dhanveer roller flour mill Email: dhanveerroller@gmail.com	Nainital	haldwani	SMALL	Growing of wheat
91	Devlok Packaging Industries Pvt Ltd Email: devlokbhimal777@gmail.com	Nainital	s 13 14 industrial area cidkul bhimal	SMALL	Manufacture of corrugated paper and paperboard
92	CHAUDHARY AGRO FOODS INDUSTRIES Email: chaudharyagrofoodsindustry@gmail.com	Nainital	VILL BIDRAMPUR TEH KALADHUNGI	SMALL	Manufacture of vegetable oils and fats excluding corn oil
93	MARUTI OVERSEAS Email: rateeshagarwal@gmail.com	Nainital	SIIDCUL INDUSTRIAL AREA	SMALL	Bee-keeping and production of honey and beeswax
94	A R N FLOUR MILLS Email: ARNFLOURMILLS@GMAIL.COM	Nainital	HARIPUR DHAMOLA, KALADHUNGI	SMALL	Flour milling
95	Mushroomers Agritech Limited Email: totalstart@totalstart.org	Nainital	IIE-BHIMTAL, Industrial Area	SMALL	Other post harvest crop activities, n.e.c.
96	FRESH BANANA ENTERPRISES Email: asif.kool3263@gmail.com	Nainital	manpur uttar rampur road haldwani	MICRO	Warehousing of refrigerated (cold storage)
97	M B FOODS Email: rvbora4@gmail.com	Nainital	VILL NARPATPUR SANGATPUR	SMALL	Flour milling
98	KRISHNA PACKAGING INDUSTRIES Email: csjoshi255@gmail.com	Nainital	SINGHAL FARM NEAR RAILWAY CROSSING HALDUCHAUR HALDWANI	MICRO	Manufacture of card board boxes
99	POLY HOUSE GERBERRA Email: jasbirsinghsethi9@gmail.com	Nainital	Village Gaujajali south Tahsil Lalkuan Dist Nainital Uttarakhand	SMALL	Growing of other flowers, including production of cut flowers, flower buds and flower seeds
100	SHRI HARI ANNA BHANDAR Email: prabhat2010bameta@gmail.com	Nainital	108 jaggi bangar post halduchour lalkuan	MICRO	Flour milling
101	BBORA ATTA CHAKKI Email: bachisingh8057249936@gmail.com	Nainital	VILL DAULA BAJPUR POST OFFICE CHORGALIA HALDWANI	MICRO	Flour milling
102	CHANDAN FOOD AGRO INDUSTRIES Email: chandanagroindustries@gmail.com	Nainital	VILLAGE DOHANIYA, TEHSHIL KOTABAG,	SMALL	Flour milling
103	S A FLOUR MILL Email: saflourmill321@gmail.com	Nainital	VILL- HARIPUR DHAMOLA TEHSIL KALADHUNGI	SMALL	Growing of wheat
104	Mr COCO BAKERY Email: krishnabaskheti@gmail.com	Nainital	Shree Kedarpuram, OLD I.T.I, Talli Haldwani	MICRO	Manufacture of flour mixes and prepared blended flour and dough for bread, cakes, biscuits
105	DIVA LAGHU UDYOG Email: narayanrikhari@gmail.com	Nainital	VILL. PUCHRI TAHSIL RAMNAGAR	MICRO	Flour milling
106	YOGESH CHANDRA ATTA CHAKKI Email: ychandra457@gmail.com	Nainital	bharatpur lamachaour haldwani	MICRO	Flour milling
107	Oyster mushroom production Email: er.chandanadhlakari@gmail.com	Nainital	Chandan Singh Adhlakari, S/O Late Shri Jasod Singh Adhlakari, Village & Post- Pawalgarh, Tehsil- Kaladhungi, Distt. Nainital Uttarakhand. Nainital	MICRO	Growing of mushrooms and truffles
108	GANPATI FOOD FARM Email: ganpatifoodfarm2019@gmail.com	Nainital	PRODUCTION OF MASHROOM Nainital	MICRO	Growing of mushrooms and truffles
109	DEEPAK ATTA CHAKKI Email: dnbhatt4@gmail.com	Nainital	Nainital	MICRO	Flour milling
110	LAKSHITA PRINT N PACK Email: nandacracker@gmail.com	Nainital	vill Hathidanar post Peerumdara Nainital	MICRO	Manufacture of corrugated paper board containers
111	Shree Neelkanth Flour Mill Email: joshinitin373@gmail.com	Nainital	west khera golapar near idbi bank po. kathgodam Nainital	MICRO	Flour milling
112	SHIVANSH LAGHU UDYOG Email: deepkavidayal.dk@gmail.com	Nainital	JAIPUR KHEEMA PO MOTAHALDU TEHSIL LALKUAN Nainital	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
113	Harsh Enterprises Email: hrshbisht@yahoo.co.in	Nainital	Bindukhatta Indra Nagar II, Lalkuan District Nainital Uttarakhand Pin code: 262402 Nainital	MICRO	Grinding and processing of spices
114	GAYATRI FLOUR MILL Email: CSBHUPENDRASINGH@GMAIL.COM	Nainital	VILL.. LACHMAPUR TARANAWAR GOLAPAR HALDWANI Nainital	SMALL	Flour milling
115	A R FOODS ENTERPRISES Email: dharmendrakumar2561@gmail.com	Nainital	MITRA VIHAR GOPINATH FARM DAHRIYA MUKHANI MANPUR PASHCHIM HALDWANI 263139 Nainital	MICRO	Grinding and processing of spices
116	Mahamaya aata chakki Email: manojbisht2786@gmail.com	Nainital	pilikhoti road, badi mukhani, haldwani Nainital	MICRO	Flour milling
117	SS ENTERPRISES Email: ssenderprises_hld@rediffmail.com	Nainital	GAUJAJALI BARIELLY ROAD HALDWANI Nainital	MICRO	Warehousing of refrigerated (cold storage)
118	DBL PAARAMPARIK UTPAD KENDRA Email: mohan.losnali@gmail.com	Nainital	VILL FATTABANGER PO ARJUNPUR HALDWANI Nainital	MICRO	Growing of mustard oil seed
119	SHRI BALAJI MINI FLOUR MILL Email: BALAJIFLORMILL@GMAIL.COM	Nainital	VILLAHE MUKHANI KHARKU CHORGALIYA NAINITAL Nainital	MICRO	Flour milling
120	MAHAVIR ROLLER FLOUR MILLS PVT LTD Email: mrfm040@gmail.com	Nainital	VILLAGE HARIPUR PURNANAND , HALDWANI , UTTARAKHAND Nainital	MICRO	Growing of wheat
121	SARSAWATI ATTA CHAKKI Email: Rinku_kandpal@rediffmail.com	Nainital	HAIRAGAJAR ARJUNPUR HALDWANI Nainital	MICRO	Flour milling
122	JAFAR ATTA CHAKKI Email: zishanmohd387@gmail.com	Nainital	SHAMSHAN GHAT ROAD ADARSH COLONY SHANKARPUR BHOOL RAMNAGAR RANGE Nainital	MICRO	Flour milling
123	UNI DISASTER MANAGEMENT AND RURAL DEVELOPMENT SOCIETY Email: udmrd.society@rediffmail.com	Nainital	VILLAGE HARIPUR DHAMOLA KALADHUNGI Nainital	MEDIUM	Flour milling
124	kumar seeds Email: shivekjindals@gmail.com	Nainital	chilkiya,ramnagar Nainital	MICRO	Seed processing for propagation
125	RAWAT AATA CHAKKI Email: grawat415@gmail.com	Nainital	UNIT ADDRESS VILL HARIPUR KUNWARSIGNH BLOCK HALDWANI Nainital	MICRO	Flour milling
126	JOSHI AATA CHAKKI Email: girishjoshi86000@gmail.com	Nainital	BAIDA POKHRA PANCHAYAT GHAR RAMPUR ROAD HALDWANI Nainital	MICRO	Flour milling
127	DURGA DUTT AATA CHAKKI Email: msunil706@gmail.com	Nainital	APPLYING UPCL NEW CONNECTION 8 KW FOR FLOUR MILLING AATA CHAKKI Nainital	MICRO	Flour milling
128	POOJA PACKEGING INDUSTRIES Email: ARUNPANDEY327@GMAIL.COM	Nainital	5 KM STONE RAMPUR ROAD MANPUR PASCHIM HALDWANI Nainital	SMALL	Manufacture of corrugated paper and paperboard
129	MOTISHWARI FLOUR MILL Email: GPC.RDR140@GMAIL.COM	Nainital	VILLAGE GOVINDPUR CHORGALIYA NAINITAL Nainital	MICRO	Flour milling
130	PRAKASH AATA CHAKKI Email: pankajkumar5176797@gmail.com	Nainital	APPLYING FOR NEW UPCL CONNECTION FLOUR MILLING AATA CHAKKI Nainital	MICRO	Flour milling
131	Mittal Enterprise Email: mukulag1112@gmail.com	Nainital	Shivlalpur Pandey Kashipur Road Ramnagar Distt. Nainital (UK) 244715 Nainital	MICRO	Grinding and processing of spices
132	GEETA AATA CHAKKI Email: narayansingh52602@gmail.com	Nainital	BEDIKHATTA JAWAHAR JYOTI DAUADHUNGA HALDWANI Nainital	MICRO	Flour milling
133	MB FOODS Email: rvbora4@gmail.com	Nainital	NARPATPUR SAKATPUR BLOCK KOTABAGH TAHSIL KALADHUNGI Nainital	SMALL	Grain milling other than wheat, rice and dal
134	TIWARI BHOG AATA CHAKKI Email: chandatiwari731@gmail.com	Nainital	APPLY FOR NEW UPCL CONNECTION ESTABLISH A NEW FLOUR MILL MINI AATA CHAKKI Nainital	MICRO	Flour milling
135	UPRETI AATA CHAKKI Email: harishkaran171108@gmail.com	Nainital	MAA GIRIJA VIHAR PHASE \u2013 7 KAMLUGANHA NARSINGH TALLA HALDWANI Nainital	MICRO	Flour milling
136	GOVIND AATA CHAKKI Email: govindbhatt3844@gmail.com	Nainital	VILL. KISHANPUR SAKULIYA POST MOTAHALDU HALDWANI Nainital	MICRO	Flour milling
137	SHRI GANAPATI FLOUR MILLS Email: racag1096@gmail.com	Nainital	KHASRA NO. 19\1 V MIN, VILL. HIMMATPUR, BLOK RAMNAGAR, NAINITAL, UTTARAKHAND Nainital	SMALL	Flour milling
138	SHARMA AATA CHAKKI Email: Sureshsharma538@gmail.com	Nainital	HALDUCHAUR SINGHAL FARM GOPIPURAM HALDWANI Nainital	MICRO	Flour milling
139	NATURAL FROZEN Email: naturalfrozen20@gmail.com	Nainital	KHET NO 25 VILL HIMMATPUR POST BAILPARAO TEHSIL KALADHUNGI DISTRICT NAINITAL UTTRAKHAND 263140 Nainital	MEDIUM	Retail sale of fresh or preserved fruit and vegetables
140	ANAND ENTERPRISES Email: aansinghgaida37452@gmail.com	Nainital	WARD NO.-02, KALADHUNGI Nainital	MICRO	Grinding and processing of spices
141	kHIMANAND Email: singhkhimanand832@gmail.com	Nainital	S/O PADMA DUTT, PREMPUR,LAMACHAUR Nainital	MICRO	Flour milling
142	MAHESH AATA CHAKKI Email: mahesh89ra@gmail.com	Nainital	VILL NANDPUR POS.CHILKIA RAMNAGAR Nainital	MICRO	Flour milling
143	DWARIKA AATA CHAKKI Email: vikash9917354850@gmail.com	Nainital	I AM ESTABLISH A NEW AATA CHAKKI AND APPLYING UPCL CONNECTION 10 KW Nainital	MICRO	Flour milling
144	Wildherb Naturals Private Limited Email: info.wildherb@gmail.com	Nainital	Basgaon, Jeolikote, Tallital, Nainital, Uttarakhand, 263127 Nainital	MICRO	Bee-keeping and production of honey and beeswax
145	NAYAL AATA CHAKKI Email: jiwannayal21@gmail.com	Nainital	187 MAA GIRIJA VIHAR NARSINGH TALLA PO.KAMLUGANJA Nainital	MICRO	Flour milling
146	Pathak Aata Chakki Email: naresh.pathak1111@gmail.com	Nainital	Pathak Aata Chakki,Bacchi Nagar No. 1,lamachaur Nainital	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
147	BHATT AATA CHAKKI Email: bhattrajesh246@gmail.com	Nainital	BHATT AATA CHAKKI , BHAGWANPUR JAY SINGH,HARIPUR NAYAK Nainital	MICRO	Flour milling
148	M/S Satya Oil Mills Email: gaursurya33@gmail.com	Nainital	F19 Industrial Area bhimtal Nainital Nainital	MICRO	Growing of other flowers, including production of cut flowers, flower buds and flower seeds
149	JAY MAHA KALI AATA CHAKKI AND SELLER Email: devendrasingh200690@gmail.com	Nainital	VILLAGE BAJWALPUR POST-DEWALCHAUR HALDWANI Nainital	MICRO	Flour milling
150	M/S CHANDRA INDUSTRY Email: pandeysubham7510@gmail.com	Nainital	VILLAGE- DHAMOLA KALADHUNGI, BLOCK-KOTABAG DISTRICT- NAINITAL Nainital	MICRO	Growing of edible nuts (almonds, cashew nuts, chestnuts, hazelnuts pistachios, walnuts and other nuts)
151	Ram Kutir-Hariyali Kheti Email: contact@wayfieldag.com	Nainital	House No-56,Ram Kutir-Hariyali Kheti,Village-Anarpa\r\n(Motiyapathar),Tehsil-Dhari,District-Nainital\r\nPin code- 263132,Uttarakhand Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
152	MAA BHAGWATI LAGHU UDYOG Email: amitchhimwal1997@gmail.com	Nainital	VILL MANKANDPUR PO.PAWALGARH KALADHUNGI Nainital	MICRO	Flour milling
153	Himalayee Udyog Email: himalayeeudyog@gmail.com	Nainital	1-2, Basement, Vanshika Tower\r\nGIC Road, Phoolchaur, Haldwani Nainital	MICRO	Flour milling
154	HIMAKSHI PACKAGING INDUSTRY Email: info.arjunbisht17@gmail.com	Nainital	VILL GUSAINPUR PO.ANANDPUR GRAMSABHA HIMMATPUR BAIJNAHT HALDWAI (OUT OF NAGARNIGAM AREA) Nainital	SMALL	Manufacture of corrugated paper board containers
155	kishan fertlizer and pesticides Email: dinesh.kandpal0@gmail.com	Nainital	kishan fertlizer and pesticides Nainital	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
156	KISAN SEVA KENDRA Email: gangwar029@gmail.com	Nainital	SHASTRI NAGAR BINDUKHATTA LALKUAN Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
157	Kisan Khad Bhandar Email: narveersafex@gmail.com	Nainital	Gayatri Colony, Halduchaur, Lalkua Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
158	CS mushroom products Email: arpit.bagdwal@gmail.com	Nainital	CS plaza near HP petrol pump RTO road Nainital	MICRO	Growing of mushrooms and truffles
159	SHREE NAULING FLOUR MILL Email: bdjoshi1112@gmail.com	Nainital	VILL KAMLUWA GANJA KABDAL PO.KATGHARIYA HALDWANI Nainital	MICRO	Flour milling
160	Jindal Seeds Email: jindalseeds.ua@gmail.com	Nainital	Vill. Chilkia\r\nRamnagar\r\n(Distt: Nainital) Nainital	MICRO	Seed processing for propagation
161	NORTHERN AGRO SEED PRODUCTS Email: sjindal552@gmail.com	Nainital	5TH KM STONE , RAMNAGAR ROAD , CHILKIA Nainital	MICRO	Seed processing for propagation
162	PANDEY SEEDS AND FERTILIZER Email: RHTPANDEY008@GMAIL.COM	Nainital	SHOP NO.1 KISAN MARKET NEW SABZI MANDI HALDWANI Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
163	ansh seed agro Email: dinesh0kandpal0@gmail.com	Nainital	narrotampur bailpokhra kaladhungi nainital Nainital	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
164	YASH AATAA CHAKKI Email: devimalti19710000@gmail.com	Nainital	PREMPUR LOSHYANI GAS GODAM ROAD HALDWANI Nainital	MICRO	Flour milling
165	Krishi Udyan Seva Kendra Email: bckandpal811@gmail.com	Nainital	Kaladhungi Road, Mukhani, Haldwani, Nainital Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
166	MALWA TRADERS Email: malwaseed2016@gmail.com	Nainital	BAILPARAO KALADHUNGI NAINITAL Nainital	SMALL	Seed processing for propagation
167	M/s Bhatt Flour Mill Email: bhuwanpandey.archana@gmail.com	Nainital	Flour Mill Nainital	SMALL	Flour milling
168	GOPAL KAHD BHANDAR Email: dipanshutiwari48@gmail.com	Nainital	TIWARI NAGAR 1 BINDUKHATA lalkuan Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
169	VASHNAVI AATA CHAKKI Email: neerajsuyal18@gmail.com	Nainital	VILL DEWAL CHAUR BANDOBASTI PUNCHAYAT GHAR RAMPUR ROAD Nainital	MICRO	Flour milling
170	FOUNDATION FOR SUSTAINABLE DEVELOPMENT Email: fsdorganic@gmail.com	Nainital	Vill. Bhaguwa Bangar, Manglar Road, near Kalu saiyad Mandir, Ramnagr, Distt. Nainital\r\nUttarakhand - 244715 Nainital	MICRO	Grinding and processing of spices
171	DARAMWAL CHAKKI Email: lalitdarmwal.1989.ld@gmail.com	Nainital	VILL DHANPURI PO. ANANDPUR RAMPUR ROAD HALDWANI Nainital	MICRO	Flour milling
172	Puran Singh Email: agrimagoel18@gmail.com	Nainital	Naripur Lamachaur Nainital	MICRO	Flour milling
173	Mahendra Singh Email: msingh1011970@gmail.com	Nainital	Haldwani Nainital	MICRO	Flour milling
174	NIGALTIA AATA CHAKKI Email: rahulnigaltia79@gmail.com	Nainital	66 HALDU POKHRA NAYAK ANANDPUR Nainital	MICRO	Flour milling
175	BHATT AATA CHAKKI Email: bhattchandand20@gmail.com	Nainital	VILL DURGAPAL PUR MOTIRAM HALDUCHAUR HALDWANI Nainital	MICRO	Flour milling
176	JAUNSAR ORGANICS Email: naveensahiya@gmail.com	Nainital	NAVAR SAILANI TEHSIL HALDWANI NAINITAL Nainital	MICRO	Growing of mushrooms and truffles
177	Surjeet Khad and Beej Bhandar Email: surjeetkhandandbeejbhandar@gmail.com	Nainital	khand and seeds Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
178	Pawan Agro Seeds Email: 1985joshilalit@gmail.com	Nainital	seeds Nainital	MICRO	Growing of wheat
179	up phal avam bhesaj sahkari sangh ltd Email: fruitfedhaldwani@gmail.com	Nainital	LINE NO. 1 HALDWANI Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
180	KISAN FERTILIZER AND PESTICIDES Email: dinesh.kandpal0@gmail.com	Nainital	BAILPOKHRA NAINITAL Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
181	global green services Email: ggvs2013@gmail.com	Nainital	charayal naya bad haldwani Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
182	UTTARAKHAND AGRO FOODS Email: aminhussain94kld@gmail.com	Nainital	VILL BACHIPUR DHAMOLA KALADHUNGI 263140 Nainital	MICRO	Preservation of fruit and vegetables n.e.c.

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
183	GLOBAL GREEN SERVICES Email: ggvs2013@gmail.com	Nainital	CHARAYAL NAYA BAD HALDWANI NAINITAL Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
184	M/S MALWA TRADERS Email: malwaseed2016@gmail.com	Nainital	VILL.+PO.--BAILPARAO\r\nTEHSIL- KALADHUNGI,DISTT.- NAINITAL\r\nUTTARAKHAND Nainital	MICRO	Seed processing for propagation
185	SHREE NAULING BEEJ BHANDAAR Email: joshientertainment388@gmail.com	Nainital	VILL DEVPUR DEVKA KAMLUAGANJA HALDWANI 263139 Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
186	HINDUSTAN SEEDS & PASTISIDE Email: dkpandey5867@gmail.com	Nainital	NEAR NEW SABJI MANDI OLD DHAN MILL BAREILLY ROAD HALDWANI Nainital	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
190	Ganpati Atta Chakki Email: dkonweb79@gmail.com	Haridwar	Devnagar Colony Rawali Mehdood Distt Haridwar Uttarakhand	MICRO	Flour milling
191	Shatyapal Atta chaki Email: dhaniram00213@gmail.com	Haridwar	dhaniram s/o Kapoora, vill-Daulatpur Hazaratpur Banwala,post-Buggawala, District- Haridwar	MICRO	Flour milling
192	SWASTIK ENTERPRISES Email: SWASTIK.ENTERPRISES0606@GMAIL.COM	Haridwar		SMALL	Manufacture of corrugated paper board containers
193	R K FOOD PRODUCTS Email: raghavfoodproducts@gmail.com	Haridwar	Akbarpur Udd Pargana Jwalapur Distt - Haridwar	SMALL	Rice milling
194	Vanshika aata chaki Email: devendrakumar19928@gmail.com	Haridwar	village- Mundiayaki , Post -Gurukul narsan , Haridwar	MICRO	Dal (pulses) milling
195	Reno atta chaki Email: reno7607@gmail.com	Haridwar	Vijaypal S/o mangal singh,Laam Garnt Haridwar	MICRO	Flour milling
196	komal atta chakki Email: komaldevi863@gmail.com	Haridwar	vill ismailpur, sultanpur, haridwar	MICRO	Flour milling
197	Avadhesh Atta chaki Email: avadheshkumar55220@gmail.com	Haridwar	Budhawa shaheed ,Buggawala Roorkee Haridwar,Uttarakhand	MICRO	Flour milling
198	Prinzip Enterprises Email: vandanasaini1511@gmail.com	Haridwar	Khasra No- 38 M, Village- Bandakheri , Pargana- Bhagwanpur Roorkee Distt- Haridwar	MICRO	Grain milling other than wheat, rice and dal
199	shakti atta chkki Email: bablidevi983@gmail.com	Haridwar	Subhash nagar Jwalapur Haridwar	MICRO	Flour milling
200	shiv atta chakki Email: rajkumar987449@gmail.com	Haridwar	Deevnagar rawali mahdood Haridwar, Distt- Haridwar	MICRO	Flour milling
201	Dinesh Atta Chakki Email: dineshkumar18995@gmail.com	Haridwar	Village- khanpur manglaur , Distt - Haridwar	MICRO	Flour milling
202	Shree Jee Foods Email: deeparani2489@gmail.com	Haridwar	polt n0- 63, gayatri enclave near ekta gas agency salempur rajputana roorkee	MICRO	Rice milling
203	saini atta chakki Email: mohar3874@gmail.com	Haridwar	Mohar singh S/o Dayaram , Halloomanara Bhagwanpur, Distt -Haridwar	MICRO	Flour milling
204	MAYANK ATTA CHAKKI Email: mayankank202@gmail.com	Haridwar	VILLAGE- FARRUPUR RAMKHERA, POST- DHANPURA, BAHADARABAD, HARIDWAR	MICRO	Flour milling
205	kamal gramodhog flour mill Email: satishchandra26530@gmail.com	Haridwar	19A Raj Ghat, Kankhal, Haridwar	MICRO	Grain milling other than wheat, rice and dal
206	ISLAM ATTA CHAKKI Email: islam989705@gmail.com	Haridwar	VILLAGR-HALAWAHERI, MARGHOOBPUR, ROORKEE, HARIDWAR	MICRO	Flour milling
207	fahim atta chakki Email: fahin119@gmail.com	Haridwar		MICRO	Flour milling
208	Meghraj Atta chakki Email: meghrajsingh984@gmail.com	Haridwar	Salempur mahdood, post - Bahadrabad distt - Haridwar	MICRO	Flour milling
209	Asha atta chakki Email: dimleshkumar@yahoo.com	Haridwar	Atmalpur Bangla Bahadrabad Distt - Haridwar	MICRO	Flour milling
210	Brajesh devi atta chakki Email: brajeshdevi32@gmail.com	Haridwar	Shahpur Bhagwanpur,Roorkee, Haridwar	MICRO	Flour milling
211	Bountiful Foods Private Limited Email: bountifulfoods@live.com	Haridwar	Lakeshwari Village	SMALL	Artificial dehydration of fruit and vegetables
212	Satyaveer Atta Chakki Email: satyaveerc194@gmail.com	Haridwar	Village- Duragagadh, Post - Sultanpur Kunhari Laksar Distt - Haridwar	MICRO	Flour milling
213	Panwar Atta Chakki Email: panwarsandeep671@gmail.com	Haridwar	Sukhvire Singh, New Subhash Nagar, Trimurti Nagar, C - 5 PAC Road Jwalapur Haridwar. Uttarakhand	MICRO	Flour milling
214	Arshi Atta Chakki Email: arshi55586@gmail.com	Haridwar	Arshi Islam S/o Shamshul Islam, Mohalla - choudhariyan Jhabrera Roorkee, Haridwar	MICRO	Flour milling
215	Aarna Atta Chakki Email: anuragsharmadj@gmail.com	Haridwar	Dhanderla lakshar Road Roorkee Distt - Haridwar	MICRO	Flour milling
216	Shiv Atta Chakki Email: sanjay364589@gmail.com	Haridwar	Sanjay S/o Mamchand , Village - Jhabaredi Khurd , Post - Jhabreda Distt- Haridwar	MICRO	Flour milling
217	krishanpal Atta Chakki Email: krishanpal554466@gmail.com	Haridwar	krishanpal S/o Jagdish, H no -84 Dahiyaki , Post -Gurukul narsan Distt - Haridwar	MICRO	Flour milling
218	Uma Devi Atta Chakki Email: uma68163@gmail.com	Haridwar	Durga Colony Roorkee Distt - Haridwar	MICRO	Flour milling
219	Avinash Atta Chakki Email: avinash445522@gmail.com	Haridwar	Village - Sahadevpur Sahabajpur, pathari Distt - Haridwar	MICRO	Flour milling
220	Kartik Aatta Chakki Email: narendra554411@gmail.com	Haridwar	Q - 77 , Shivalik nagar, BHEL Haridwar	MICRO	Flour milling
221	Ikbal Atta Chakki Email: ikbal998844@gmail.com	Haridwar	Village - Zaurasi , Post - Landhaura, Distt - Haridwar	MICRO	Flour milling
222	Pavan Atta Chakki Email: pavan3335544@gmail.com	Haridwar	Village- Dhanauri , Post - Dhanauri ,Distt- Haridwar	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
223	Dharmendra Atta Chakki Email: d402482@gmail.com	Haridwar	A- 25 Shafipur Roorkee Distt - Haridwar	MICRO	Flour milling
224	Pritam Atta Chakki Email: pritam224455@gmail.com	Haridwar	Salempur Rajputana Roorkee	MICRO	Flour milling
225	Nanha Atta Chakki Email: nanha336699@gmail.com	Haridwar	Village - Kunja Bahadurpur , Iqbalpur Distt - Haridwar	MICRO	Flour milling
226	Demigod Agro Food Pvt Ltd Email: mohan.lalit471@gmail.com	Haridwar	Plot No -63, Sector 8A , Sidcul, Haridwar	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
227	Jagdamba Mini Rice Mill Email: rajuk887766@gmail.com	Haridwar	Village - Udalheri, Post - Manglour,Roorkee, Distt - Haridwar	MICRO	Flour milling
228	Naresh Atta Chakki Email: naresh335544@gmail.com	Haridwar	Village - Gaindi Khata, Post - Gaindi Khata Distt - Haridwar	MICRO	Flour milling
229	Girdhar Gopal Rice Mill Email: kusum4863@gmail.com	Haridwar	H.NO-46, laharpur Chidiyapur, Post - Gaindi Khata, Distt- Haridwar	MICRO	Flour milling
230	Umar Atta Chakki Email: sipaten5544@gmail.com	Haridwar	Village - Rasolpur, Post - Salempur Rajputana,Roorkee	MICRO	Flour milling
231	Bhagirati Flour Mills Email: susheelc99@gmail.com	Haridwar	Village- sultanpur manjri, Ekata Vihar colony Pargana- Jawalapur, Distt- Haridwar	MICRO	Flour milling
232	Shiv Traders Email: sachin4455666@gmail.com	Haridwar	Village- Ahamadur Grant , Bahadrabad, Haridwar	MICRO	Flour milling
233	Harun Atta Chakki Email: harunm7785@gmail.com	Haridwar	Village - Jalalpur Dada, Hallu Mazara, Bagwanpur Roorkee	MICRO	Flour milling
234	kamlesh flour mill & Rice mills Email: bundaram138@gmail.com	Haridwar	Village& Post - Subhashgarh, Distt- Haridwar	MICRO	Grain milling other than wheat, rice and dal
235	Farman Atta Chakki Email: mf395530@gmail.com	Haridwar	Village- khanpur Pargana Bagwanpur, Roorkee , Distt - Haridwar	MICRO	Flour milling
236	Jagvant Atta Chakki Email: jagvant664433@gmail.com	Haridwar	Villaga - Chidiyapur, Post Gaindi Khata , Distt - Haridwar	MICRO	Flour milling
237	Nitin Atta Chakki Email: nitin337788@gmail.com	Haridwar		MICRO	Flour milling
238	Parbhat Atta Chakki Email: charan88774@gmail.com	Haridwar	H.No. 193 K, Jamalpur Kalan, Jwalapur Distt - Haridwar	MICRO	Flour milling
239	Baba JI Flour mill Email: xxx.k.raj.xxx@gmail.com	Haridwar	Village - jamalpur Khurd, Bahadrabad, Distt- Haridwar	MICRO	Flour milling
240	Sitaram Atta Chakki Email: sitaramram498@gmail.com	Haridwar	Village - Imlikhera Dharampur, Roorkee	MICRO	Flour milling
241	Martin and Harris Private Limited Email: roorkee@martinandharris.com	Haridwar	NH-58 VILL.-LIBBERHEDI PARGANA MANGALORE TEHSIL ROORKEE DISTT. HARIDWAR UTTARAKHAND	SMALL	Manufacture of corrugated paper and paperboard
242	NAV NIRMAN FERTILIZERS Email: navnirmanrd@gmail.com	Haridwar	Vill-Chandpuri Kahadar, Post-Chandpuri Kalan	SMALL	Manufacture of other fertilizers n.e.c.
243	ORCHID PACKAGING Email: s4tyagi@gmail.com	Haridwar	Khasra No - 451, Village - Tansipur, Roorkee, Dist - Haridwar (U.K.)	MICRO	Manufacture of corrugated paper board containers
244	SK AGRO & FOODS Email: dmohandhruv@gmail.com	Haridwar	VPO NANHERA ANANTPUR	MICRO	Flour milling
245	NAINA AATA CHAKKI Email: rohitaskumarbegpur@gmail.com	Haridwar	VILL MOHAMMEDPUR BEGPUR URF TAKABHARI	MICRO	Flour milling
246	KISAN AGRO PRODUCT Email: mohdahasan263@gmail.com	Haridwar	village Kotwal Alampur , post office Jhabrera , Roorkee , DIstt. Haridwar Uttarakhand 247665	SMALL	Growing of mushrooms and truffles
247	Rana Frozen Foods Email: ranafrozenfoods@gmail.com	Haridwar	village sundhari jorasi, roorkee	MEDIUM	Preservation of fruit and vegetables n.e.c.
248	Badri Packers and Printing Email: badripackaging@gmail.com	Haridwar	Village Gadarjudda, Manglor Jhabrera road roorkee	SMALL	Manufacture of corrugated paper and paperboard
249	Max Enterprises Email: vscca1@gmail.com	Haridwar	vill tansipur	SMALL	Manufacture of corrugated paper and paperboard
250	AROMA CRAFT AND TISSUES PRIVATE LIMITED Email: aromacraft@gmail.com	Haridwar	5KM, MANGLORE JHABREDA ROAD, LATHERDEVA HOON, VILLAGE - NOORPUR BUDPUR, ROORKEE	MICRO	Manufacture of corrugated paper and paperboard
251	BSSI PACKAGING Email: raoirfan33@gmail.com	Haridwar	KH NO - 453, VILLAGE - GADHMEERPUR, POST - GADHMEERPUR, HARIDWAR	SMALL	Manufacture of corrugated paper and paperboard
252	GOPAL JI AATA CHAKKI Email: surendrakumar1979rke@gmail.com	Haridwar	175,CHAWMANDI ROORKEE	MICRO	Flour milling
253	RASID ATTA CHAKKI Email: dilshadalirke65@gmail.com	Haridwar	366/4 RAMPUR ROORKEE	MICRO	Flour milling
254	Parmod Atta Chakki Email: sainisumit777@gmail.com	Haridwar	Village- Kota Muradnagar, Post- Khas Kota Muradnagar, Roorkee	MICRO	Flour milling
255	Nature Wellness Food Products Email: gdpahwa2007@rediffmail.com	Haridwar	CHAK NO. 49, GATA NO. 142/2, GRAM DULATPUR ROORKEE	SMALL	Warehousing of refrigerated (cold storage)
256	Mubarik Atta Chakki Email: mubarikhura@gmail.com	Haridwar	Mhohla Islamnagar Roorkee	MICRO	Flour milling
257	TARIF ATTA CHAKKIEmail: tarifalirke@gmail.com	Haridwar	VILL PIRAN KALIYAR POST PIRAN KALIYAR	MICRO	Flour milling
258	SHARMA AATA CHAKKI Email: braham.spr@gmail.com	Haridwar	VILL BHANGERI MAHAWATPUR POST MILAP NAGAR,ROORKEE	MICRO	Flour milling
259	IRSHAD ATTA CHAKKI Email: sk15005672@gmail.com	Haridwar	VILL SAJANPUR PEELI,POST SHYAMPUR	MICRO	Flour milling
260	UMAR ATTA CHAKKI Email: bpsingh09041984@gmail.com	Haridwar	VPO DHANDERA,TEHSIL ROORKEE	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
261	VINEET ATTA CHAKKI Email: vineetkumarrke112017@gmail.com	Haridwar	VILL BAHADARPUR KHADAR,POST LAKSAR	MICRO	Flour milling
262	Gir Commodities Unit of Gir Dairy Farming Products Pvt Ltd Email: binushukla@hotmail.com	Haridwar	vill nalheri deevaharan (puhana iqbalpur road)	SMALL	Manufacture of essential oils; modification by chemical processes of oils and fats (e.g. by oxidation, polymerization etc.)
263	DHEEMAN ATTA CHAKKI Email: dataramdheeman1936@gmail.com	Haridwar	gughal road pandewala jawalapur	MICRO	Flour milling
264	GURU KIRPA ATTA CHAKKI Email: sohansinghtantwala@gmail.com	Haridwar	VILL DUDHLADAYALWALA URF TANTWALA POST SHYAMPUR	MICRO	Flour milling
265	JAGMOHAN ATTA CHAKKI Email: rajansingh7417845801@gmail.com	Haridwar	VILL BHANGERI MAHAWATPUR POST MILAP NAGAR,ROORKEE	MICRO	Flour milling
266	RAJPAL ATTA CHAKKI Email: braham.spr@gmail.com	Haridwar	MOHALLA KUMHARAN,TOWN JHABRERA	MICRO	Flour milling
267	SAINI ATTA CHAKKI Email: veervati29071955@gmail.com	Haridwar	67,NEW DHEERWALI JAWALAPUR	MICRO	Flour milling
268	Gulanaj Atta chakki Email: gulanaj9917@gmail.com	Haridwar	Village - Akbarpur dhadaki, Post - Maglour, Roorkee	MICRO	Flour milling
269	PALAK ATTA CHAKKI Email: rajkumari57151@gmail.com	Haridwar	VILL KANGRI POST SHYAMPUR	MICRO	Flour milling
270	ARYA ATTA CHAKKI Email: amarpalarya1985@gmail.com	Haridwar	KRISHNA VIHAR COLONY,SALEMPUR	MICRO	Flour milling
271	SANJEEVANI AGROFOODS PVT LTD Email: sanjeevaniconnect@gmail.com	Haridwar	Raipur Industrial Area, Bhagwanpur, Roorkee	SMALL	Flour milling
272	REETA ATTA CHAKKI Email: reetachanana1970@gmail.com	Haridwar	roorkee	MICRO	Flour milling
273	Dhanpal Atta Chakki Email: kumarjayant979@gmail.com	Haridwar	Village -Lakhnauta makdoompur, Roorkee	MICRO	Flour milling
274	Deshraj Atta Chakki Email: deshraisaini9897@gmail.com	Haridwar	Village - Ibragimpur masahi, Roorkee	MICRO	Flour milling
275	Gulfaam Atta Chakki Email: gulfaam.chakki@gmail.com	Haridwar	Village and post - bhogpur, District - Haridwar	MICRO	Flour milling
276	Furkan Atta Chakki Email: furkan.attachakki@gmail.com	Haridwar	Village - Mirazapur mustafabad, Post - Roorkee	MICRO	Flour milling
277	Subhash Atta Chakki Email: subhash847797@gmail.com	Haridwar	Village - Akabarpur kalson, Post Hallumajra, Bhagwanpur	MICRO	Flour milling
278	PATANJALI NATURAL BISCUITS PRIVATE LIMITED Email: cs.akashsharma@gmail.com	Haridwar	LAND 10961 SQUARE METER SITUATED IN VILLAGE LODHIWALA PARGANA BHAGWANPUR HARIDWAR	MICRO	Warehousing non-refrigerated
279	PREM PACKAGING Email: aamir.kn22@gmail.com	Haridwar	EID GAH ROAD VILL SALEMPUR MAHDOOD	SMALL	Manufacture of corrugated paper board containers
280	GUDDU ATTA CHAKKI Email: guddu.chakki15@gmail.com	Haridwar	SHIVDAS PUR URF TELIWALA, HARIDWAR	MICRO	Flour milling
281	Purushottam Atta Chakki Email: purushottam.attachakki@gmail.com	Haridwar	381, Hanuman Colony chawmandi, Roorkee	MICRO	Flour milling
282	AVNI ATTA CHAKKI Email: vishalonweb99@gmail.com	Haridwar	VILL NETWAL SAIDABAD,POST RAISI	MICRO	Flour milling
283	Shahzad Atta Chakki Email: shahzad.attachakki@gmail.com	Haridwar	Village - Kanhapur, Post - Dhandedi, Roorkee	MICRO	Flour milling
284	Irfan Atta chakki Email: tasleem.mmm@gmail.com	Haridwar	Village - Zaurasi Must Post - Landhora, Haridwar	MICRO	Flour milling
285	Sai Om Packaging Email: saiompackaging2018@gmail.com	Haridwar	Village Bhagtanpur, Abidpur urf Ikkar, Pargana Jwalapur	SMALL	Manufacture of corrugated paper and paperboard
286	KARTIK ATTA CHAKKI Email: SINGHDHARMPAL061975@GMAIL.COM	Haridwar	vill udhalheri post manglour	MICRO	Flour milling
287	Shri Guru Kripa Industries Email: shrigurukripaindustries1@gmail.com	Haridwar	F-38, Old Industrial Area	SMALL	Manufacture of corrugated paper board containers
288	Parvez Atta Chakki Email: parvezattachakki@gmail.com	Haridwar	H.No. 124, Shekhphuri Roorkee	MICRO	Flour milling
289	MAA SANTOSHI ATTA CHAKKI Email: latasuman488@gmail.com	Haridwar	VILL HETEMPUR POST AURANGABAD	MICRO	Flour milling
290	Sohan Atta Chakki Email: sohanonweb1975@gmail.com	Haridwar	Suman Nagar Tehri Colony Bhadrabad Distt Haridwar Uttarakhand	MICRO	Flour milling
291	Shakumbari Packaging Email: shakumbari.pack@gmail.com	Haridwar	kh no 688,689,690 vill Khubanpur Bhagwanpur Roorkee	MICRO	Manufacture of corrugated paper and paperboard
292	Anil Atta Chakki Email: anilattachakki1@gmail.com	Haridwar	Village - Mohallapuri, Landhang, Haridwar	MICRO	Flour milling
293	Munifa Atta Chakki Email: munifaattachakki@gmail.com	Haridwar	Village - Athel Bozurg, Haridwar	MICRO	Flour milling
294	NARESH AATA CHAKKI Email: sewadal.unit.no1524@gmail.com	Haridwar	Village - Post - Nanheda Anantpur, Roorkee	MICRO	Flour milling
295	Imaran Atta Chakki Email: imaranattachakki@gmail.com	Haridwar	Village- Akabarpur Dhodheki, Haridwar	MICRO	Flour milling
296	Rajesh Atta Chakki Email: rajeshattachakki@gmail.com	Haridwar	Village post - Aurangabad, Rosanabad, Haridwar	MICRO	Flour milling
297	Muskan Packaging Pvt Ltd Email: anshikaenterprises2011@gmail.com	Haridwar	Plot no. 76, Sector - 7, IIE Ranipur Sidcul, Haridwar	MICRO	Manufacture of corrugated paper board containers
298	J K AARNA PACKAGING Email: ram419394@gmail.com	Haridwar	Khasra no. 31, Simlauni, Manglour Roorkee	SMALL	Manufacture of corrugated paper board containers
299	SETHPAL ATTA CHAKKI Email: mukeshkumarrke2018@gmail.com	Haridwar	VPO IBRAHIMPUR MASAHI	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
300	DURGA ATTA CHAKKI Email: kiratsinghrke2018@gmail.com	Haridwar	MOHANPURA MOHAMMADPUR,POST MILAP NAGAR,ROORKEE	MICRO	Flour milling
301	OMEGA PRINTOPACK PVT LTD Email: accounts@omegaprintopack.com	Haridwar	PLOT NO. 112, SECTOR 6A, SIDCUL HARIDWAR	SMALL	Manufacture of corrugated paper and paperboard
302	KANHA OIL EXPELLER Email: sandeepchauhan01977@gmail.com	Haridwar	VILL MEERPUR MUWAJARPUR ,POST GARHMEERPUR	MICRO	Growing of mustard oil seed
303	NAZIM ATTA CHAKKI Email: aashurke2018@gmail.com	Haridwar	VILL BADHERI RAJPUTAN POST PATANJALI YOGPEETH	MICRO	Flour milling
304	KADIR ATTA CHAKKI Email: kadirrke2018@gmail.com	Haridwar	VILL DHANDERA POST DHANDERA	MICRO	Flour milling
305	INDRA ATTA CHAKKI Email: baburamrke2018@gmail.com	Haridwar	VPO KHEDI SHIKOHPUR,TEHSIL ROORKEE	MICRO	Flour milling
306	sanchit industries Email: sanchitpackaging@gmail.com	Haridwar	399 village karondi roorkee	SMALL	Manufacture of corrugated paper and paperboard
307	ARMAN PACKAGING Email: risalatali951@gmail.com	Haridwar	KHASRA NO. 217, VILLAGE SHERPUR MOHITPUR, BHAGWANPUR ROORKEE	SMALL	Manufacture of corrugated paper and paperboard
308	MOHYAL FOODS PVT LTD Email: bsr.adv2012@gmail.com	Haridwar	KHASRA NO.97,BADHEDHI BUJURG,PARGANA- BHAGWANPUR,TEHSIL ROORKEE UTTARAKHAND	MEDIUM	Manufacture of containers such as tins and cans for food products and boxes
309	SIDDHARTH AATA CHAKKI Email: vinod2885@gmail.com	Haridwar	GALI NO-A 7,TEHRI VISTAPIT COLONY NEAR PAYAL CINEMA,RANIPUR HARIDWAR	MICRO	Flour milling
310	SAINI ATTA CHAKKI Email: arvindsaini06789@gmail.com	Haridwar	VPO MEERPUR TEHSIL HARIDWAR	MICRO	Flour milling
311	ROHTASH ATTA CHAKKI Email: sandeepkumarpherupur@gmail.com	Haridwar	VILL PHERUPUR RAMKHERA,POST DHANPURA	MICRO	Flour milling
312	UTTARAKHAND PACKAGING UNIT II Email: info@uttarakhandpackaging.com	Haridwar	plot no 10 sector 3 IIE SIDCUL Haridwar	SMALL	Packaging activities
313	Sushama Atta Chakki Email: devisushma917@gmail.com	Haridwar	Village - Imlikhera Roorkee	MICRO	Flour milling
314	RAJ STONE CRUSHER Email: muneer.alam729@gmail.com	Haridwar	VILLAGE - Daulatpur, Tehsil - Baghwanpur, District - Haridwar	SMALL	Growing of other pome fruits and stone fruits
315	MAHADEV GANGA STONE CRUSHER Email: abhishek.garg423@gmail.com	Haridwar	Village - Samaspur Katawar, Haridwar	SMALL	Growing of other pome fruits and stone fruits
316	Balesh Atta Chakki Email: baleshra90@gmail.com	Haridwar	Ambedkar nagar Sunhaira Roorkee	MICRO	Flour milling
317	ONLY AND SURELY ORGANIC AGRO PRODUCTS Email: OSOAGROPRODUCTS@GMAIL.COM	Haridwar	Village Mustafabad Pargana Jwalapaur	SMALL	Bee-keeping and production of honey and beeswax
318	HARBIRI ATTA CHAKKI Email: akshaykumar3526@gmail.com	Haridwar	VILL KHERA JATT POST GURUKUL NARSHAN	MICRO	Flour milling
319	MARHUM HAJI HAMID AATA CHAKKI Email: taseenalirke2018@gmail.com	Haridwar	VILL - BHANGEDI MAHAVATPUR, POST - MILAP NAGAR	MICRO	Flour milling
320	Vania Stone Crusher Email: garvit21aug@gmail.com	Haridwar	Village - Mehtauli, Tehsil Laksar, Haridwar	SMALL	Growing of other pome fruits and stone fruits
321	APARNA FLOOR MILL Email: sonalidassrke1989@gmail.com	Haridwar	RAISI ROAD NEAR SDM AVAS LAKSAR	MICRO	Flour milling
322	jivamrit organic farmer producer company Email: jivamritorganics@gmail.com	Haridwar	Village-Sherpur Khelmow Post Jhabrera	SMALL	Growing of sugar cane
323	Manju Atta Chakki Email: manju.rani.909811@gmail.com	Haridwar	Khasra no. 371, Shivalik Nagar, tehri Visthapit colony Ranipur Haridwar	MICRO	Flour milling
324	A S TRADERS Email: a.s.traders315@gmail.com	Haridwar	KHASRA NO. 142, SALEMPUR MEHDOOD, NEAR PATHRI POWER HOUSE, BAHADRABAD, HARIDWAR	MICRO	Manufacture of other fertilizers n.e.c.
325	HARIDWAR STONE CRUSHER Email: haridwarstonecrusher@gmail.com	Haridwar	VILLAGE - BHOGPUR ROAD JWALAPUR HARIDWAR	SMALL	Growing of other pome fruits and stone fruits
326	YOGENDRA AATA CHAKKI Email: yogender8243@gmail.com	Haridwar	SUNETHI ALAMPUR BHAGWANPUR	MICRO	Flour milling
327	ASLAM ATTA CHAKKI Email: mohdaslarmrke2018@gmail.com	Haridwar	VILL - SAFARPUR, POST - SALEMPUR RAJPUTAN	MICRO	Flour milling
328	UDIT ATTA CHAKKI Email: unit.saini2121@gmail.com	Haridwar	VILL - CHANDPUR, POST - DHANPURA	MICRO	Flour milling
329	Deepa Atta Chakki Email: deepaattachakki461@gmail.com	Haridwar	Village - Tikaula Post - Sahapur, Laksar Haridwar	MICRO	Flour milling
330	FAROOKH ATTA CHAKKI Email: farookhrke2018@gmail.com	Haridwar	VILL LAHBOLI POST MANGLOUR	MICRO	Flour milling
331	MANGERAM AATA CHAKKI Email: munnalalrke1984@gmail.com	Haridwar	VPO - LIBBERHERI ROORKEE	MICRO	Flour milling
332	SAINI AATA CHAKKI Email: rajatsaini93480@gmail.com	Haridwar	VILL - MAZARI, POST - PIRAN KALIYAR	MICRO	Flour milling
333	KISHAN ATTA CHAKKI Email: irshad31018@gmail.com	Haridwar	INDRA VIHAR SUNEHRA ROORKEE	MICRO	Flour milling
334	helan aata chakki Email: guddi41018@gmail.com	Haridwar	VILL - BHAGTOWALI MAJRA DEHAT, POST - JHABRERA	MICRO	Flour milling
335	RANA ATTA CHAKKI Email: pg339418@gmail.com	Haridwar	43/1 PURVI DEEN DAYAL ROORKEE	MICRO	Flour milling
336	SANJAY ATTA CHAKKI Email: samgayk@gmail.com	Haridwar	VILL RUHALKI DAYALPUR POST BHAGWANPUR	MICRO	Flour milling
337	GOYAL ATTA CHAKKI Email: nadeemmalik0496@gmail.com	Haridwar	514 KHANJARPUR ROORKEE	MICRO	Flour milling
338	GURU KIRPA AATA CHAKKI Email: sheeshram08071958@gmail.com	Haridwar	VILL - ROSHNABAD, POST - GARHMEERPUR, HARIDWAR	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
339	Hardik Packaging Industries Email: akbjnr@gmail.com	Haridwar	Village - Bichpadi, tehsil - Roorkee	SMALL	Manufacture of corrugated paper board containers
340	SUNLITE INDIA AGRO PRODUCER CO LTD Email: info@sunliteagrofoods.com	Haridwar	VILLAGE MUNDET, PARGANA MANGLAUR	MEDIUM	Bee-keeping and production of honey and beeswax
341	M D PRINTING AND PACKAGING PRIVATE LIMITED Email: mdfoodshrd@gmail.com	Haridwar	Plot No. 49 and 50, Sector 5, IIE, SIDCUL	MEDIUM	Other semi-processed, processed or instant foods n.e.c.
342	J K AARNA PRINTING & PACKERS Email: jkaarnap@gmail.com	Haridwar	khasra no. 31, simlauni, manglour	SMALL	Manufacture of corrugated paper board containers
343	MAHAK ATTA CHAKKI Email: farmanalimahak@gmail.com	Haridwar	BADAEYO WALI GALI RAMPUR ROORKEE	MICRO	Flour milling
344	DHARM ATTA CHAKKI Email: cscramnagarke@gmail.com	Haridwar	VILL GARH POST GARHMEERPUR	MICRO	Flour milling
345	AMEER ATTA CHAKKI Email: ameerattachakki@gmail.com	Haridwar	VILLAGER VASHU CHANDPURA POST - GAINDI KHATA HARIDWAR	MICRO	Flour milling
346	S R FOODS Email: apt@mpatra.com	Haridwar	KHASRA NO 190, SALEMPUR RAJPUTAN, ROORKEE, HARIDWAR	MICRO	Manufacture of macaroni, noodles, couscous and similar farinaceous products
347	AYYAJ ATTA CHAKKI Email: ayyzali1947@gmail.com	Haridwar	VILLAGE - NAGALA KUBADA ROORKEE	MICRO	Flour milling
348	Firoj Atta Chakki Email: waseem.rao12@gmail.com	Haridwar	Village - Banhera Tanda, Post - Manglour, Roorkee	MICRO	Flour milling
349	Ajay Atta chakki Email: ajayattachakki@gmail.com	Haridwar	145, Purvawali Ganeshpur Roorkee	MICRO	Flour milling
350	SHANU ATTA CHAKKI Email: amitsaini45121@gmail.com	Haridwar	VILLAGE SALIYAR SALHAPUR , ROORKEE	MICRO	Flour milling
351	Arya Atta Chakki Email: aryavart42@gmail.com	Haridwar	Village / Post - Kheda Jatt, Roorkee	MICRO	Flour milling
352	ROOPCHAND ATTA CHAKKI Email: roopchand51959@gmail.com	Haridwar	VILL PANDITPURI HABIBPUR KOODI POST RAISI	MICRO	Flour milling
353	SAMAR ATTA CHAKKI Email: samarsinghakash1992@gmail.com	Haridwar	POST LAKSAR	MICRO	Flour milling
354	Manoj Atta chakki Email: manojattacakki@gmail.com	Haridwar	Village - Salempur Mahadood sidcul haridwar	MICRO	Flour milling
355	Jiyaul Atta Chakki Email: jiyaulattachakki@gmail.com	Haridwar	BANDHA ROAD MAHIGRAN ROORKEE	MICRO	Flour milling
356	SKJ AGRIFOODVENTURES PRIVATE LIMITED Email: NISHUGCS@GMAIL.COM	Haridwar	SHOP SHED NO. 2, BHEL ANCILLARY ESTATE, JAWALAPUR RANIPUR, HARIDWAR, U.K	SMALL	Manufacture of papads, appalam and similar food products
357	FHAFI ATTA CHAKKI Email: shafimalik4985@gmAil.com	Haridwar	VILLAGE - RAWLI MAHDOOD BHAHADRABAD HARIDWAR	MICRO	Flour milling
358	SANGRAM ATTA CHAKKI Email: sanojpal804@gmail.com	Haridwar	VILL RANGHADWALA POST SIKRODA	MICRO	Flour milling
359	JAYCHAND ATTA CHAKKI Email: sanjeevjaychand2@gmail.com	Haridwar	VILL BAKKARPUR POST KHANPUR BRAHAMPUR	MICRO	Flour milling
360	MRK KHALSA Email: rishipalsinghraisai@gmail.com	Haridwar	14/1 KHERWALA RAYASI ROAD SHAHPUR SHEETLA KHEDA DISTT HARIDWAR	MICRO	Flour milling
361	ICH Foods Email: rpengworks@rediffmail.com	Haridwar	Plot No. 27 Sector 07 IIE SIIDCUL Haridwar	SMALL	Manufacture of vegetable oils and fats excluding corn oil
362	AMIT ATTA CHAKKI Email: amitbhatt1606@gmail.com	Haridwar	NAVODAYA NAGAR TEHRI VISTHAPIT COLONY ROSHNABAD HARIDWAR	MICRO	Flour milling
363	Dalbir Atta Chakki Email: dalbrisingh966@gmail.com	Haridwar	J- 28, Duraga colony roorkee	MICRO	Flour milling
364	Kanha Speciality Farms Email: spgarg68@gmail.com	Haridwar	Khasra No. 547, Village Bhalaswagaj	SMALL	Growing of mushrooms and truffles
365	ANNANYA MINI FLOUR MILL Email: sonu191284@gmail.com	Haridwar	VILL- BHANGERI MAHAVATPUR, POST- MILAP NAGAR	MICRO	Flour milling
366	CHAUHAN ATTA CHAKKI Email: er.sunilrawat1601@gmail.com	Haridwar	VILL AND POST SHYAMPUR	MICRO	Flour milling
367	AJAB ATTA CHAKKI Email: ssroorkee2018@gmail.com	Haridwar	VILL MAHTAULI POST SULTANPUR	MICRO	Flour milling
368	SATSAHIB ATTA CHAKKI Email: yogeshcori1985@gmail.com	Haridwar	CHAKLLAN, NEAR MOLSHREE TREE, JWALAPUR Haridwar	MICRO	Flour milling
369	Omega Printopack Pvt Ltd Email: qc@omegaprintopack.com	Haridwar	Haridwar	MEDIUM	Manufacture of corrugated paper board containers
370	Jodh singh Flour Mills Email: afjal0008@gmail.com	Haridwar	Khasra No 84, Bistipur Jhabreda Haridwar	MICRO	Growing of wheat
371	Khushi Enterprises Email: khawajajaved27@gmail.com	Haridwar	Haridwar	MICRO	Flour milling
372	CHANDRASHEKHAR ATTA CHAKKI Email: ritikchaudhary1208@gmail.com	Haridwar	VILLAGE AND POST - TANSHIPUR ROORKEE Haridwar	MICRO	Flour milling
373	BHAGIRATH ATTA CHAKKI Email: chand13101995@gmail.com	Haridwar	VILL AND POST SOHALPUR SIKARODA Haridwar	MICRO	Flour milling
374	m/s Vaseem Atta Chakki Email: mohdwasim22721@gmail.com	Haridwar	Village - shahpur bhagwanpur roorkee Haridwar	MICRO	Flour milling
375	PARMAR ATTA CHAKKI Email: praveshiparmar9991@gmail.com	Haridwar	Haridwar	MICRO	Flour milling
376	RAINBOW PACKAGING INDUSTRIES Email: assurek079@gmail.com	Haridwar	Haridwar	SMALL	Manufacture of corrugated paper and paperboard
377	Kiran Atta Chakki Email: Kd0630030@gmail.com	Haridwar	Haridwar	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
378	VEDIC DHAMPUR ORGANIC PVT LTD Email: vedicorganicproducts@gmail.com	Haridwar	VILLAGE-SULTANPUR SABATWALI. PRAG-BHAGWANPUR, TEH-ROORKEE HARIDWAR(U.K) KHASRA NO-79 Haridwar	MICRO	Packaging activities
379	SHRI RAM VEG FRUIT PAYTM Email: lekhikatayal1604@gmail.com	Haridwar	VILLAGE - SIKENDARPUR BHAINSWAL BHAGWANPUR ROORKEE Haridwar	SMALL	Warehousing of refrigerated (cold storage)
380	L B S PACKAGING Email: lbspackaging@gmail.com	Haridwar	VILL PANJANHEDI JIAPOTA TO JAMALPUR ROAD Haridwar	MICRO	Packaging activities
381	KEVENTER AGRO LTD Email: amitchowdhury@keventer.com	Haridwar	Haridwar	MICRO	Radiation preservation of fruit and vegetables
382	Munmun Atta Chakki Email: durgeshkumar5113@gmail.com	Haridwar	Haridwar	MICRO	Flour milling
383	MB FOODS Email: mbfoodss@gmail.com	Haridwar	Khasra no. 804, 805, Naukragrnt Buggawala, Tehsil - bhagwanpur, Distt - Haridwar Haridwar	SMALL	Canning of fruits and vegetables
384	Anita Atta Chakki Email: sainianita2476@gmail.com	Haridwar	Haridwar	MICRO	Flour milling
385	CHANDRAPAL ATTA CHAKKI Email: Schandrapal598@gmail.com	Haridwar	VILLAGE - SAHBALPUR HALLUMAJRA BHAGWANPUR. Haridwar	MICRO	Flour milling
386	Arahad Atta Chakki Email: arshadali10997@gmail.com	Haridwar	VILLAGE - MUKRABPUR, PIRAN KALIYAR ROORKEE Haridwar	MICRO	Flour milling
387	SUNLITE INDIA AGRO PRODUCER CO LTD Email: sunliteindiarke@gmail.com	Haridwar	Haridwar	MEDIUM	Bee-keeping and production of honey and beeswax
388	MIREK THERMOFORMERS PVT LTD Email: Mirektherm@rediffmail.com	Haridwar	Plot no. 19 Sec-1B IIE SIIDCUL Haridwar Haridwar	SMALL	Packaging activities
389	SHRI BRIJ GOPI INDUSTRIES Email: enquiriesbgi@outlook.com	Haridwar	village salempur mehdood, pargna jwalapur, haridwar 249402 Haridwar	SMALL	Manufacture of corrugated paper board containers
390	Rahees Atta Chakki Email: raheesattachakki@gmail.com	Haridwar	Haridwar	MICRO	Flour milling
391	NISHANT AROMAS PRIVATE LIMITED Email: admin@nishantaromas.com	Haridwar	Plot No.61, Sector 1B, II E, SIDCUL, Haridwar Haridwar	SMALL	Manufacture of essential oils; modification by chemical processes of oils and fats (e.g. by oxidation, polymerization etc.)
392	S J AND COMPANY Email: sjcompanyharidwar@yahoo.com	Haridwar	PLOT NO 23 A SECTOR 5 IIE SIDCUL HARIDWAR Haridwar	MICRO	Manufacture of corrugated paper and paperboard
393	DHARA COLD STORE Email: adv.verma1991@gmail.com	Haridwar	khasra no 1828 , saleempur , mehdood -2 , pargana , Roorkee Haridwar	SMALL	Warehousing of refrigerated (cold storage)
394	Dhampure speciality sugars ltd Email: vedicorganicfarmer@gmail.com	Haridwar	Khasra no-79,sultanpur sabatwali pargna - bhagwanpur Roorkee Disst- haridwar,uttrakhand-247665 Haridwar	SMALL	Packaging activities
395	M/s Brajpal Atta Chakki Email: brajpalattachakki@gmail.com	Haridwar	Village - Lathardeva Hoon Post - Jhabrera Distt - Haridwar Haridwar	MICRO	Flour milling
396	Poonam Atta Chakki Email: horipal500@gmail.com	Haridwar	Village - Sajanpur Sajanpur peeli Haridwar Haridwar	MICRO	Flour milling
397	SAJID ATTA CHAKKI Email: tannu.best90@gmail.com	Haridwar	TOWN LANDHOURA POST LANDHOURA Haridwar	MICRO	Flour milling
398	Demigod Agro Food pvt ltd Email: akgromi@gmail.com	Haridwar	Plot no 62, sector 8A IIE SIDCUL Haridwar 249403 Haridwar	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
399	SINGHAL ATTA CHAKKI Email: pankhurisinghallaksar@gmail.com	Haridwar	HARIDWAR ROAD LAKSAR Haridwar	MICRO	Flour milling
400	VAANI FOOD INDUSTRIES Email: ashishshhh@gmail.com	Haridwar	KHASRA NO. 1000, ROORKEE ROAD SALEMPUR RAJPUTAN ROORKEE Haridwar	MICRO	Other semi-processed, processed or instant foods n.e.c.
401	Nishant Aromas Private Limited Email: pksharma@nishantaromas.com	Haridwar	Plot no. 30,31 Sector-1B IIE SIIDCUL, Haridwar Haridwar	MICRO	Manufacture of essential oils; modification by chemical processes of oils and fats (e.g. by oxidation, polymerization etc.)
402	Ilayas Atta Chakii Email: vaseem171010@gmail.com	Haridwar	Village - Mirazapur Mustafabad, Roorkee Haridwar	MICRO	Flour milling
403	DEMIGOD AGRO FOOD PRIVATE LIMITED Email: demigodagrofood@gmail.com	Haridwar	PLOT NO.63, SECTOR-8A, IIE, SIDCUL, HARIDWAR Haridwar	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
404	SHRI BALAJI PRINT PACK Email: sushilpanwar1981@gmail.com	Haridwar	KHASRA NO. 286, VILL - NALHEDI DEVHIRAN, ROORKEE Haridwar	SMALL	Manufacture of corrugated paper and paperboard
405	GULSHAN LAMEE PACK PVT LTD Email: accounts@gulshanlameepack.com	Haridwar	PLOT NO 9 SECTOR 1 A IIE SIDCUL , HARIDWAR Haridwar	SMALL	Manufacture of corrugated paper and paperboard
406	SAINI ATTA CHAKKI Email: ramkumarsaini6070@gmail.com	Haridwar	SHRI HARI ENCLAVE JAGJEETPUR KANKHAL HARIDWAR Haridwar	MICRO	Flour milling
407	IGNITED INTELLIGENCE Email: snnca.azad@gmail.com	Haridwar	KHASRA NO 130 MOJJA AURANGZEBPUR TEHSIL BHAGWANPUR Haridwar	MICRO	Growing of mushrooms and truffles
408	ADITYA ATTA CHAKKI Email: panchanansingh560@gmail.com	Haridwar	RAILWAY CROSSING ,PADLI GURJAR,ROORKEE Haridwar	MICRO	Flour milling
409	HIMANSHU ATTA CHAKKI Email: himanshu20695@gmail.com	Haridwar	PLOT NO.-100, 101 SIDDHI VINAYAK ENCLAVE PHASE-3, SALEMPUR MEHDOOD Haridwar	MICRO	Flour milling
410	GAURAV PRINT O PACK Email: gnpackers2011@gmail.com	Haridwar	Packaging material like C box , Mono cartoon etc Haridwar	SMALL	Packaging activities
411	Zuber Atta chakki Email: gulsanadevi3@gmail.com	Haridwar	Village Mundlana, aamkheri, Narsan Haridwar	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
412	SAINI ATTA CHAKKI Email: ankitsaini0222@gmail.com	Haridwar	VILL HAKIMPUR TURRA POST HALLU MAJRA Haridwar	MICRO	Flour milling
413	ANIHAC PHARMA Email: cagarg0034@gmail.com	Haridwar	PLOT NO. 27, KAI INDUSTRIAL ESTATE, Khasra No. 371, 372, Khata No. 105 , 99, Village, Mundiyaiki, Paragana Manglaur, Roorkee - Uttarakhand -247656 Haridwar	SMALL	Other semi-processed, processed or instant foods n.e.c.
414	Omega Printopack Pvt Ltd Email: sales@omegaprintopack.com	Haridwar	Plot No.24 sec 6A IIE Sidcul Haridwar Haridwar	MEDIUM	Manufacture of corrugated paper board containers
415	SINGH ATTA CHAKKI Email: jhabalsinghrke@gmail.com	Haridwar	VILL HADDIPUR GRUNT POST SOHALPUR Haridwar	MICRO	Flour milling
416	SAIISHWAR FOOD INDUSTRIES PVT LTD Email: sudanshuathotelp prakash@gmail.com	Haridwar	KHASRA NO 38B, VILLAGE BANDAKHEDI, BEHIND TITAN INDUSTRIES LTD. ROORKEE Haridwar	MEDIUM	Manufacture of papads, appalam and similar food products
417	MUSKAAN ATTA CHAKKI Email: yunusmalik91@gmail.com	Haridwar	RAHAMATPUR MUSTHAKAM PARGANA TAHSIL ROORKEE HARIDWAR Haridwar	MICRO	Flour milling
418	MOHYAL FOODS PVT LTD Email: mohyalfoods@gmail.com	Haridwar	KHASRA NO 97 BADHERI BUJURG BHAGWANPUR 247661, HARIDWAR UTTARAKHAND Haridwar	MEDIUM	Preservation of fruit and vegetables n.e.c.
419	MURSLIN Email: vdad1978@gmail.com	Haridwar	VILLAGE RAHIMPUR, TEHSIL ROORKEE, DISTT.HARIDWAR,UK Haridwar	MICRO	Growing of wheat
420	Jumara Atta Chakki Email: ishwer1122@gmail.com	Haridwar	Sikrauda, Daada Jalalpur Haridwar Haridwar	MICRO	Flour milling
421	Harpal Atta Chakki Email: hs5184837@gmail.com	Haridwar	Mohanpur Chudiyala Mohanpur, Haridwar. Haridwar	MICRO	Flour milling
422	KUMAR ATTA CHAKKI Email: rajnishkumarrke1976@gmail.com	Haridwar	VILL SAIDPURA POST MEHWAR KALAN Haridwar	MICRO	Flour milling
423	Mukesh Atta Chakki Email: 97585041az@gmail.com	Haridwar	Jagjeetpur, Kankhal Haridwar Haridwar	MICRO	Growing of wheat
424	Revati Print O Pack Unit 2 Email: jalan.vineet@gmail.com	Haridwar	Plot No-59, sec-2, Sidcul, Haridwar Haridwar	MICRO	Manufacture of corrugated paper and paperboard
425	SUBHASH CHAND AATA CHAKKI Email: vvdad1978@gmail.com	Haridwar	H.NO.59,ASHOK NAGAR,TUBEWEL NO.9,DHANDHERA,HARIDWAR- 247666,UK Haridwar	MICRO	Growing of wheat
426	RANA ATA CHAKI Email: manojpundir83@gmail.com	Haridwar	KHANJARPUR ROORKEE Haridwar	MICRO	Flour milling
427	KNT Foods & Herboved Pvt. Ltd. Email: jitu786j@gmail.com	Haridwar	Khasra No. 414.415, Village-Nagla Imarati, Vikas Khand-Gurukul Narsan,Roorkee, Haridwar-247666 Haridwar	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
428	Rajesh Atta Chakki Email: rajeshmarku754@gmail.com	Haridwar	Gram Beladi salhapur, Dhandhedi Khwazgipur, Haridwar, Dhandera Khwaspur Uttarakhand Haridwar	MICRO	Growing of wheat
429	Shahazad Atta Chakki Email: shahzad1982uk@gmail.com	Haridwar	Gram bajuheri, Bajuheri, Haridwar , Mewar kalan Uttarakhand. Haridwar	MICRO	Growing of wheat
430	Bombay Golden India Regd. Email: harisharora@bombaygoldenindia.com	Haridwar	Plot No.- 5, Industrial Park- 4, Begampur, Bahadurabad, Haridwar Haridwar	SMALL	Warehousing non-refrigerated
431	SOMPAL ATTA CHAKKI Email: kumararjunkumararjun131@gmail.com	Haridwar	VILL DHEERMAJRA POST HALLUMAJRA Haridwar	MICRO	Flour milling
432	Maa Agro Food Products Email: maaagrofoodproducts19@gmail.com	Haridwar	Plot No.- 134\6, 144\2, 145\1, 146\1, 142\3, 141\2, 142\4, 146\2, Village Bhogpur, Jwalapur, Haridwar Haridwar	SMALL	Growing of mushrooms and truffles
433	Lavi Shuddh Bhog Atta Chakki Email: chhatrapal121@gmail.com	Haridwar	Shiv nagar Phase - 2 Salempur Mehdood Haridwar	MICRO	Growing of wheat
434	Shri Jai Maa Pisai Udyog Email: amangambhir09@gmail.com	Haridwar	Daksh Road Kankhal Haridwar	MICRO	Flour milling
435	Omnamo Foods and Agrotech India Pvt Ltd Email: saiefiling004@gmail.com	Haridwar	Bandakheri, Bhagwanpur, Roorkee Haridwar	SMALL	Growing of mushrooms and truffles
436	PREETI INDUSTRIES Email: preetiindustries@yahoo.com	Haridwar	PLOT NO 55 A, SECTOR 2, IIE, SIIDCUL, HARIDWAR Haridwar	SMALL	Manufacture of corrugated paper board containers
437	Vijay Atta Chakki Email: rakesh222dec@gmail.com	Haridwar	Darshan Nagar Gram Rawali Mehdood Bahadurabad. Haridwar	MICRO	Growing of wheat
438	REVATI PRINT O PACK Email: mouldedplastic124@gmail.com	Haridwar	PLOT NO-37, SECTOR-2, SIDCUL, HARIDWAR Haridwar	MICRO	Manufacture of corrugated paper and paperboard
439	MODI OIL MILL Email: modioilmilluk@gmail.com	Haridwar	KHASRA NUMBER-325,VILL- IBRAHIMPUR,NEAR BALAJI DHAM Haridwar	SMALL	Manufacture of essential oils; modification by chemical processes of oils and fats (e.g. by oxidation, polymerization etc.)
440	RATAN ATTA CHAKKI Email: ravindrakumarlaksar2019@gmail.com	Haridwar	VILL BHUWAPUR CHAMRAWAL POST SULTANPUR Haridwar	MICRO	Flour milling
441	Aryan Atta Chakki Email: aakashverma6398218644@gmail.com	Haridwar	Village Inayatpur, Ibrahimpur Masahi Haridwar Haridwar	MICRO	Growing of wheat
442	JD Traders Email: gouravsharma8474@gmail.com	Haridwar	Sandesh vihar Near Transport Nagar Jwalapur Haridwar	MICRO	Growing of mustard oil seed
443	Shri Shyam Bhog Agro Email: shrishyambhogagro@gmail.com	Haridwar	132\2, bahadupur jat, jwalapur, haridwar Haridwar	MICRO	Flour milling
444	DONNEL HEALTH CARE PVT. LTD. Email: donnelroorkee@gmail.com	Haridwar	BUSSINESS Haridwar	SMALL	Growing of wheat
445	Krishnam Packers Email: krishnampackers@gmail.com	Haridwar	Khasra No. 911, Puhana Chowk, Kishanpur jamalpur, DEhradun Road, Roorkee- 247667. Uttarakhand Haridwar	MICRO	Manufacture of corrugated paper board containers

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
446	Vikram Atta Chakki Email: navneetnv390@gmail.com	Haridwar	Gram Inayatpur Ibrahimpur Masahi, Bhagwanpur Haridwar Haridwar	MICRO	Flour milling
447	MS Atta Chakki Email: ss4364087@gmail.com	Haridwar	Jagjeetpur Kankhal Haridwar Haridwar	MICRO	Flour milling
448	Swastik Atta Chakki Email: sparya82@gmail.com	Haridwar	Opp-Maharana Pratap Enclave, Vill-Pherupur (Ramkhera), PO-Dhanpura, Haridwar-Laksar Road, Distt-Haridwar, Uttarakhand-249404 Haridwar	MICRO	Flour milling
449	Suman Atta Chakki Email: kuldeepranar044@gmail.com	Haridwar	PO- Khubbanapur Chauli Shahbuddin Pur, Khubbanpur, Haridwar Haridwar	MICRO	Flour milling
450	Dinesh Atta Chakki Email: dk2610520@gmail.com	Haridwar	Chutmalpur Alawalpur Haridwar Haridwar	MICRO	Flour milling
451	YADAV Email: arvindrbbhel@gmail.com	Haridwar	8/795, NEW SUBHASH NAGAR, JWALAPUR, HARIDWAR Haridwar	MICRO	Flour milling
452	DEV ATTA CHAKKI Email: bhatnagars320@gmail.com	Haridwar	DEV ENCLAVE COLONY DHANDERA ROORKEE Haridwar	MICRO	Flour milling
453	Radha Swami Atta Chakki Email: omveersinghup@gmail.com	Haridwar	House no 258, Village Noorpur Panjanhedi, Post Missarpur, Haridwar Haridwar	MICRO	Flour milling
454	Swastik Atta Chakki Email: sparya82@gmail.com	Haridwar	Plot No. B-144, Gokul Green City, Village - Pherupur (Ramkhera), PO - Dhanpura, Haridwar - Laksar Road, Distt - Haridwar, Uttarakhand-249404 Haridwar	MICRO	Flour milling
455	Swastik Atta Chakki Email: sparya82@gmail.com	Haridwar	Opp - Maharana Pratap Enclave, Vill - Pherupur (Ramkhera), PO - Dhanpura, Haridwar-Laksar Road, Distt - Haridwar, Uttarakhand - 249404 Haridwar	MICRO	Flour milling
456	DHARA INDIA PRIVATE LIMITED Email: dharaproductindia@gmail.com	Haridwar	KHASRA NO 1828 SALEMPUR, MEHDOOD - II, BAHADRABAD, HARIDWAR, UTTARAKHAND Haridwar	SMALL	Grinding and processing of spices
457	ravinder Email: singhpreetam551@gmail.com	Haridwar	plot no 164 khasra no 441 THDC Colony Roshnabad Haridwar Haridwar	MICRO	Flour milling
458	Rajpal atta chakki Email: rajpal363691@gmail.com	Haridwar	KUMAHARAN , jhabrera Haridwar Haridwar	MICRO	Flour milling
459	Manoj Aatta Chakki Plus Email: manojkee@yahoo.in	Haridwar	Bukhand No. 28, Plot No. 64, \r\nNavodyanagar, Tehri Vishthapit area, Roshnabad, Salempur Mahdood first, \r\nTehsil and Dist. Haridwar Haridwar	MICRO	Flour milling
460	KANIKA ATTA CHAKKI Email: lokeshsaini2276@gmail.com	Haridwar	VILL-LAWWA, POST-BHAGWANPUR, TEH-BHAGWANPUR, DISTT-HARIDWAR(U.K), PINCODE-247661 Haridwar	MICRO	Flour milling
461	Sharmaji aata chakki Email: nitinji300@gmail.com	Haridwar	House No 96 Darshan Nagar Rawli Mahdood Baharabad Haridwar Haridwar	MICRO	Flour milling
462	JAL Atta chikki Email: akashsaini800688@gmail.com	Haridwar	87, HALLU MAZARA HARIDWAR Haridwar	MICRO	Flour milling
463	JANTA ATTA CHAKKI Email: sonunote878@gmail.com	Haridwar	VILL BHAGWANPUR CHANDANPUR POST LANDHOURA Haridwar	MICRO	Flour milling
464	Arvind Chakki Email: arvindonweb62@gmail.com	Haridwar	VPO Nanhera Anantpur Distt Haridwar Uttarakhand Haridwar	MICRO	Flour milling
465	kaushal Email: kaushaldevi72487248@gmail.com	Haridwar	LAM GRUNT HARIDWAR Haridwar	MICRO	Flour milling
466	praveen atta chakki Email: satyaparkash547@gmail.com	Haridwar	village karaundi post bhagwanpur tehsil roorkee district haridwar Haridwar	MICRO	Flour milling
467	Mohit Email: mk7364234@gmail.com	Haridwar	134,SHIKOHPUR, HARIDWAR Haridwar	MICRO	Flour milling
468	R C Print & Packers Email: rcprint55@gmail.com	Haridwar	Plot No-3 Sector-3A IIE Haridwar-249401 Haridwar	SMALL	Manufacture of corrugated paper board containers
469	Mittal Atta va Malsale Pisai kendra Email: sandeepmittal589@gmail.com	Haridwar	Purvavli ganeshpur roorkee Haridwar	MICRO	Grinding and processing of spices
470	ILAM ATTA CHAKKI Email: sharmasachin01443@gmail.com	Haridwar	VILL MEHWARKHURD URF NAGAL POST MEHWAR KALAN Haridwar	MICRO	Flour milling
471	MUNESH ATTA CHAKKI Email: manueshkumar7@gmail.com	Haridwar	indra singh latifpur kubban pur, khubbanpur haridwar Haridwar	MICRO	Flour milling
472	Shree Shyam Atta Chakki Email: stcharidwar@gmail.com	Haridwar	Block E-2, New Shivalik Naga, Tehri Visthapit Colony, Haridwar , Uttarakhand Haridwar	MICRO	Flour milling
473	Prakash atta chakki Email: rk7888850@gmail.com	Haridwar	NEW KAMAL VIHAR ,ANNEKI HETTAMPUR POST-AURANGABAD DIST-HARIDWAR Haridwar	MICRO	Flour milling
474	Anuj atta chakki Email: mk2048422@gmail.com	Haridwar	Jayprakash, habibpur nawada, hallumajra, haridwar Haridwar	MICRO	Flour milling
475	Bhagwati Atta va Masale Pisai Kendra Email: lalitonweb81@gmail.com	Haridwar	Dhukan no.3 Jahazgarh thesil bhagwanpur Haridwar	MICRO	Grinding and processing of spices
476	RIYASAT ATTA CHAKKI Email: danishgour559@gmail.com	Haridwar	VILL RASOOLPUR POST SALEMPUR RAJPUTAN Haridwar	MICRO	Flour milling
477	MAYA ATTA CHAKKI Email: vs83285@gmail.com	Haridwar	VILL MEERPUR MUWAZAPUR POST GARHMEERPUR Haridwar	MICRO	Flour milling
478	PAWAN AATA CHAKI Email: jaspalshah941@gmail.com	Haridwar	Haridwar	MICRO	Flour milling
479	Akums Drugs & Pharmaceuticals Ltd Email: kds_hr@akums.in	Haridwar	Plot No: 21,22 Sector : 8B IIE SIDCUL, Haridwar Haridwar	SMALL	Manufacture of corrugated paper and paperboard

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
480	VINAYAK PACKAGING INDUSTRIES Email: dinesh_kr_kashyap23@yahoo.com	Haridwar	KHASRA NO. 1787, SALEMPUR MAHDOOD II, HARIDWAR UTTARAKHAND 249403 Haridwar	SMALL	Manufacture of corrugated paper board containers
481	Swadeshi Upaj Email: tulsaherbal@gmail.com	Haridwar	Plot No. 21, Sector 11, IIE-SIIDCUL, Haridwar Haridwar	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
482	Success Solutions Email: solutionssuccess23@gmail.com	Haridwar	Kh. No.-158 Raipur Industrial Area, Bhagwanpur, Roorkee Distt.-Haridwar U.K. Haridwar	SMALL	Manufacture of corrugated paper board containers
483	Shree Annapurna Aatta Chakki Email: PRASHANTNEGI625@GMAIL.COM	Haridwar	Bhagirathi nagar bhupatwala, haridwar Haridwar	MICRO	Flour milling
484	OM atta chakki Email: omveersingh8924@gmail.com	Haridwar	house 1480, PRIT VIHAR ROORKEE HARIDWAR Haridwar	MICRO	Flour milling
485	Brij atta chakki Email: bhushan.kuldeep1991yas@gmail.com	Haridwar	K H. 232 m, Village- Pherupura Ramkhera Jwalapur Haridwar Haridwar	MICRO	Flour milling
486	Saddik Atta Chakki Email: Shehzadbhadhana@gmail.com	Haridwar	Gaindhikata Gurjar Basti Haridwar Haridwar	MICRO	Flour milling
487	AYUSH VIVERS Email: ayushvivers123@gmail.com	Haridwar	SAJANPUR PILI VILLAGE, SHYAMPUR, HARIDWAR, UTTARAKHAND-249408 Haridwar	SMALL	Manufacture of pickles, chutney etc.
488	MAA SHAKTI PACKAGING & ENGINEERING Email: devimaluti@gmail.com	Haridwar	F 105, INDUSTRIAL AREA BAHADRABAD, HARIDWAR, UTTARAKHAND Haridwar	MICRO	Manufacture of corrugated paper board containers
489	RADIANT PRINTO PACK Email: radientprintopack@gmail.com	Haridwar	KHASRA NO. 589, NALHEDA ANANTPUR, PARGANA BHAGWANPUR, TEHSIL ROORKEE, DISTT HARIDWAR, UTTARAKHAND Haridwar	MICRO	Manufacture of corrugated paper board containers
490	RAJ AATA CHAKKI Email: rajnishhdr90@gmail.com	Haridwar	SALEMPUR MAHDOOD-2, ROSHNABAD ROAD, HARIDWAR Haridwar	MICRO	Flour milling
491	SINGH ATTA CHAKKI Email: mrchandkhan1965@gmail.com	Haridwar	288 GALI NO 2 AMBEDKAR NAGAR JAWALAPUR Haridwar	MICRO	Flour milling
492	Faisal atta chakki Email: faisalmohd9719@gmail.com	Haridwar	Hasanawala haridwar Haridwar	MICRO	Flour milling
493	Sonu atta chakki Email: sonubharti20172017@gmail.com	Haridwar	Dhnori, shivdas pur urf teliwala, dhanauri, haridwar Haridwar	MICRO	Flour milling
494	Shiv Atta chakii Email: trilokiv88@gmail.com	Haridwar	549 Pandeywala , Gughal Road Haridwar Uttarakhand Haridwar	MICRO	Flour milling
495	HARSH FLOUR MILL Email: ss8498879@gmail.com	Haridwar	VILLAGE GAJIWALI POST SHYAMPUR HARIDWAR Haridwar	MICRO	Flour milling
496	Parivar Bhog atta chakki plant Email: jatinderpaljitu22@gmail.com	Haridwar	211, Basant vihar railway road, jwalapur haridwar Haridwar	MICRO	Flour milling
497	Naseem Atta Chakki Email: nas89410373@gmail.com	Haridwar	Vill Nagla Khurd Margoobpur, Bahadarabad, Haridwar Haridwar	MICRO	Flour milling
498	NATIONAL PACKAGING Email: nationalpaking19083@gmail.com	Haridwar	khasra no 286, VILLAGE NALHEDI DEHVEERAN PARGNA, BHAGWANPUR, roorkee, Haridwar, Uttarakhand, 247667 Haridwar	SMALL	Manufacture of corrugated paper board containers
499	SAINI AATA CHAKKI Email: anilsinghsaini06@gmail.com	Haridwar	VILL-DUDHLA DAYAL WALA URF TANTWALA\r\nPOST - SHYAMPUR\r\nPIN-249408 Haridwar	MICRO	Flour milling
500	AATA/MASALE PISAI CHAKKI Email: sharmahemant715@gmail.com	Haridwar	173/1 ADARSH NAGAR ROORKEE CITY, HARIDWAR,\r\nUTTRAKHAND - 277667 Haridwar	MICRO	Flour milling
501	SINGH ATTA CHAKKI Email: rahuljkr2021@gmail.com	Haridwar	157 AMBEDKAR NAGAR GALI NO2 JAWALAPUR Haridwar	MICRO	Flour milling
502	Durga atta chakki Email: ombirsingh15767@gmail.com	Haridwar	C-19 SHIVALIK NAGAR HARIDWAR BHEL Haridwar	MICRO	Flour milling
503	ALI ATTA CHAKKI Email: rahulpal202012@gmail.com	Haridwar	VILL GARH POST GARH DISTT HARIDWAR Haridwar	MICRO	Flour milling
504	ksealer Email: msksealer2018@gmail.com	Haridwar	kasra no :37 dadupur govindpur bhadrabad haridwar Haridwar	SMALL	Manufacture of corrugated paper board containers
505	M/s Kunvar Pal Atta Chakki Email: sainirajatkumar1998@gmail.com	Haridwar	Bhagtanpur Abidpur urf Ibrahimpur bahadrabad Haridwar	MICRO	Flour milling
506	VEDGUN FOOD & AGRO PRODUCTS PRIVATE LIMITED Email: vedgunfood@gmail.com	Haridwar	Kh. no. 361M, 363, 366, KIE Industrial Estate, Vill- Mundiya, Pargana Mangalore, Roorkee, Haridwar Haridwar	SMALL	Flour milling
507	MAA AMBE INDUSTRIES Email: maaambeindustries09@gmail.com	Haridwar	PLOT NO 16-B, INDUSTRIAL PARK -4, BEGUMPUR BAHADRABAD HARIDWAR UTTARAKHAND Haridwar	SMALL	Manufacture of corrugated paper board containers
508	KRISHNA ATTA CHAKI Email: palvijay601@gmail.com	Haridwar	ATTA CHAKI Haridwar	MICRO	Flour milling
509	M/s MANISH MASALA & Atta Chakki Email: ggiitkrishana@gmail.com	Haridwar	YOGENDRA VIHAR,VILLAGE JAGJEETPUR,JWALAPUR TEHSIL HARIDWAR-249404 Haridwar	MICRO	Flour milling
510	JITENDRA KUMAR AATA CHAKKI AND MASALA CHAKKI Email: narendra.upcl7@gmail.com	Haridwar	MISSARPUR MUSTKAM LAKSAR ROAD HARIDWAR Haridwar	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
511	SHRI MAA GRAPHICS PRVT. LTD. Email: shrimaagraphics3@gmail.com	Haridwar	KHASRA NO: 290 , 291 , VILLAGE PUHANA PARGANA BHAGWANPUR DISTT HARIDWAR UTTARAKHAND Haridwar	SMALL	Manufacture of corrugated paper board containers
512	S H Traders Email: biomarkformulation@gmail.com	Haridwar	sikandarpur bhainswal bhagvanpur haridwar Haridwar	MICRO	Agricultural activities on a fee or contract basis
513	Israr Atta chakki Email: sp2232374@gmail.com	Haridwar	H.NO- 244, KHEDI SHIKOHPUR, HARIDWAR ROORKEE Haridwar	MICRO	Flour milling
514	kissan agro division Email: ar7157809@gmail.com	Haridwar	bhalaswa gaj bhagvanpur haridwar Haridwar	MICRO	Agricultural activities on a fee or contract basis
515	NARMADA AGRO FERTILIZERS AND CHEMICALSS Email: AYUSHGUPTACAFE6@GMAIL.COM	Haridwar	Khasra No 477M Vill Akbarpur Oud Laksar District Hardiwar Pin 247663 Haridwar	MICRO	Manufacture of urea and other organic fertilizers
516	KRISHI SAMADHAN KENDRA Email: dhathwal222@gmail.com	Haridwar	DABKI KALAN LAKSAR HARIDWAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
517	Kisaan kutir Udyog Email: mudssir956826@gmail.com	Haridwar	karaundi, Bhagwanpur, haridwar Haridwar	MICRO	Flour milling
518	Chaudhary atta chakki Email: bs2103838@gmail.com	Haridwar	Shyampur , Dudhala Dayalwala Haridwar Haridwar	MICRO	Flour milling
519	M\S RAJ KUMAR ATTA CHAKKI Email: dharmendrakumarhre@gmail.com	Haridwar	VILLAGE - DHANDERA ROORKEE Haridwar	MICRO	Flour milling
520	M\S Kisan Tranders Email: manojkm895858@gmail.com	Haridwar	vill- tansipur manglor haridwar Haridwar	MICRO	Agricultural activities on a fee or contract basis
521	M\s La Vipani Pvt. Ltd. Unit-I Email: guptajikitchen@gmail.com	Haridwar	Khasra no. 555, Village- Aurangzebpur Pargana- Bhagwanpur Roorkee Haridwar	SMALL	Manufacture of macaroni, noodles, couscous and similar farinaceous products
522	M\s La Vipani Pvt. Ltd. Unit-II Email: ekincorporation@gmail.com	Haridwar	Khasra no. 555, Village- Aurangzebpur ParganaBhagwanpur Roorkee Haridwar	SMALL	Grinding and processing of spices
523	M\s La Vipani Pvt. Ltd. Unit-III Email: mistyguptaji@gmail.com	Haridwar	Khasra no. 554, Village- Aurangzebpur\r\nPargana - Bhagwanpur Roorkee Haridwar	SMALL	Grinding and processing of spices
524	durga beej bhandar Email: sachinsaini0019956@gmail.com	Haridwar	bhara pur bhoori roorkee haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
525	M\vs Rana Atta Chakki Email: shahzebrana1143@gmail.com	Haridwar	Village- Sikrodha Bhagwanpur Haridwar	MICRO	Flour milling
526	WHITE UMBRELLA AGRO PVT LTD Email: lalitachaudhary.03@gmail.com	Haridwar	KHASRA NO 486 VILL BEDPUR , MAZRI ROAD, DIST - HARIDWAR Haridwar	SMALL	Growing of mushrooms and truffles
527	M\S Shiwani Mushroom Farm Email: pranavkamboj02@gmail.com	Haridwar	KH 336 , Village Aurangzebpur Post Biharigarh Block Bhagwanpur District Haridwar Utrrakhand - 247662 Haridwar	MICRO	Growing of mushrooms and truffles
528	MI AGRO ENTERPRISE Email: rahul.oye@gmail.com	Haridwar	RUKHLI KISAN PUR BAHADRABAD Haridwar	MICRO	Agricultural activities on a fee or contract basis
529	SHRIRAM ENTERPRISES Email: bhardwaj.amitkumar3@gmail.com	Haridwar	SUBHASHGARH POS. SUBHASHGARH V BLOCK BAHADRABAD HARIDWAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
530	M\vs Amit Atta & Masala Chakki Email: ak10098661@gmail.com	Haridwar	Village- Rawali Mahdood Haridwar Haridwar	MICRO	Flour milling
531	AAYIUSHMAN KARSHI SEVA KANDRA Email: Mohitjatt338@gmail.com	Haridwar	PHERAPUR RAMKHEDA HARIDWAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
532	PRINT INDIA Email: printindiahw@gmail.com	Haridwar	Khasra No 1388, Village Salempur Mahdood II, Haridwar, Utrrakhand 249403 Haridwar	SMALL	Manufacture of corrugated paper board containers
533	VANSH ATTA CHAKKI Email: dkumar2461982@gmail.com	Haridwar	PLOT No. Q-186, SHIVALIK NAGAR, POST SHIVALIK NAGAR, BHEL, HARIDWAR 249403 Haridwar	MICRO	Flour milling
534	KUMAR ATTA CHAKKI Email: rajeshkumarchhacher@gmail.com	Haridwar	MOHALLA PAWDHOI PULJATWADA JAWALAPUR Haridwar	MICRO	Flour milling
535	PRAKASH ATTA CHAKKI Email: tkdhankar@gmail.com	Haridwar	101 HARIDWAR ROAD BAHADRABAD BLOCK BAHADRABAD DISTT HARIDWAR Haridwar	MICRO	Flour milling
536	peledy food & agro products pvt.ltd. Email: peledyfood@gmail.com	Haridwar	KHASRA NO. 599\600,VILLAGE KISHANPUR, JMALPUR, BHAGWANPUR, ROORKEE , HARIDWAR Haridwar	MEDIUM	Preservation of fruit and vegetables n.e.c.
537	Omega Pintopack Pvt Ltd Email: rm1@omegaprintopack.com	Haridwar	Pot No 28A Sec 2 IIE Sidcul Haridwar	SMALL	Manufacture of corrugated paper board containers
538	Aarju atta chakki Email: hamananish40@gmail.com	Haridwar	House no -71 , jwalapur haridwar Haridwar	MICRO	Flour milling
539	POVEI FOOD & PROCESSING PRIVATE LIMITED Email: poveifoodprocessingpvtltd@gmail.com	Haridwar	khasra no. 1116G, near madarsa nanheda, anantpur, puhana Haridwar	MEDIUM	Preservation of fruit and vegetables n.e.c.
540	JANTA KHAD BEEJ BHANDAR Email: rashidhusain009@gmail.com	Haridwar	sultanpur adampur haridwar Haridwar	MICRO	Agricultural activities on a fee or contract basis
541	libberhedi sahakari ganna vikas samti ltd Email: anujkumar2021godown@gmail.com	Haridwar	harjuli jat haridwar Haridwar	MICRO	Agricultural activities on a fee or contract basis
542	KISAN KHAD BEEJ BHANDAR Email: boby32011@gmail.com	Haridwar	GANGDASAPUR RAISI LAKSAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
543	SHEELA DEVI AND SONS Email: rksainipsaini@gmail.com	Haridwar	BHOGPUR HARIDWAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
544	Shanbow Organic Industries Email: ankit.saini59@gmail.com	Haridwar	Vill- Shantharshah Post-Patanjali yoghpeth , Haridwar Haridwar	MICRO	Manufacture of other fertilizers n.e.c.

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
545	morden agri clinic and agri business centre Email: qadirrehan@gmail.com	Haridwar	vill+post- sultanpur , post- sultanpur, block- laksar, haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
546	KISAN SEVA KENDRA Email: mohanchoudhary9897@gmail.com	Haridwar	BHARA PUR BHORI HARIDWAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
547	SHAVEJ KARSHI SEWA KENDRA Email: savejali575@gmail.com	Haridwar	VELLAGE- SANGHIPUR HARIDWAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
548	JANTA TRANDING COMPANY Email: mohdshadab.csc@gmail.com	Haridwar	bhijjoli roorkee haridwar Haridwar	MICRO	Agricultural activities on a fee or contract basis
549	SAINI KARISHI BEEJ BHANDAR Email: vichitersaini321@gmail.com	Haridwar	IBRAHIMPUR BHAGVANPUR HARIDWAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
550	RAHEESH ATTA CHAKKI Email: pritamlxr1@gmail.com	Haridwar	VILL KHERI KHURD POST LAKSAR Haridwar	MICRO	Flour milling
551	SHIV KHAD BEAJ DEVA BHANDAR Email: rahulsaini1995rahulsaini@gmail.com	Haridwar	VILL- MANAK MAJRA BHAGVANPUR HARIDWAR Haridwar	MICRO	Agricultural activities on a fee or contract basis
552	SHRI RAM AGRI INDIA Email: anilshriramagro@gmail.com	Haridwar	DHANAURI ROORKEE HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
553	AYAT KISAN SEWA KENDRA Email: aliguljar20@gmail.com	Haridwar	VILL- PADARTHA URF DHANPURA Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
554	kushi kisan sewa kendra Email: nahid011997@gmail.com	Haridwar	vill-nasirpur kala haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
555	choudhary beej bhandar Email: satish1491415k@gmail.com	Haridwar	vill- kunja road ikbalpur haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
556	Ishak Atta chakki Email: sehgalishqlal123@gmail.com	Haridwar	Puranpur shalhapur haridwar Haridwar	MICRO	Flour milling
557	SAINI KISAN SEWA KENDRA Email: vikaskumarhwr86@gmail.com	Haridwar	HARDEVPUR SEHDEVPUR URF RANI MAJRA Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
558	khadar kisan sewa kendra Email: mohdsahid8508@gmail.com	Haridwar	vill- bodhadi mohadeenpur roorkee haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
559	M/s Arinjay Atta Chakki Email: rk81940261@gmail.com	Haridwar	Village- Bhounri Post - Bharapur Haridwar Haridwar	MICRO	Flour milling
560	balaji beej bhandar Email: singhjaiveer990@gmail.com	Haridwar	vill-khanpur goverdhanpur laksar haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
561	PAHLSON KISAN CHAUPAL Email: dhananjay.arya6@gmail.com	Haridwar	VILL- BHAGTO VALI JHABRADA IQUBALPUR ROORKEE HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
562	SAINI KHAD BHANDAR Email: RAVINDER701723@GMAIL.COM	Haridwar	781/711,11, MATHURA VIHAR ROORKEE HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
563	bahuudesheey praarambhik krishi rin samiti dhanpura Email: ns9636113@gmail.com	Haridwar	vill+post-pathri road bahadarpur jat haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
564	M/S GARG TRADER Email: msgargtradersuk@gmail.com	Haridwar	RAMPUR CHUNGI SUPAR MARKET ROORKEE Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
565	OM VED TRADERS Email: sudhirchaudhary2274@gmail.com	Haridwar	G.T ROAD HARJOLI JAAT LIBBHARADHI NARSAN HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
566	SURYA KRISHI SEVA KENDRA Email: pks.pankaj1985@gmail.com	Haridwar	KASRA- 114/ VILL- DHANUARY HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
567	UTTRAKHAND AGRO TRADERS Email: nasirhusan25@gmail.com	Haridwar	NEAR ZAMA MAZAIDE BHARAPUR ROORKEE HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
568	VASHNAVI KHAD BEEJ BHANDAR Email: ramchauhan12345678@gmail.com	Haridwar	KASRA NO- 475/VILL+POST- RAMPUR RAYGHATI BHIKKAMPUR JEETPUR LAKSAR HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
569	UTTRAKHAND KHAD BEEJ BHANDAR Email: Rajneshbattar16061992@gmail.com	Haridwar	VILL-HABBIBPUR KUDI, POST- RAYSI, BLOCK- LAKSAR HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
570	M/s Saini Atta Chakki Email: savensaini@gmail.com	Haridwar	VILL-KISHANPUR JAMALPUR, POST- BHAGWANPUR, DISTT-HJARIDWAR, PINCODE-247661 Haridwar	MICRO	Flour milling
571	shri balaji karishi sewa kendra Email: pooja12sandeep@gmail.com	Haridwar	vill+post- munda khera kala laksar haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
572	Rajesh atta chakki Email: amitkumar7920@gmail.com	Haridwar	plot no- 28 kharsa no 276 rama vihar colony vill dinarpur Haridwar	MICRO	Flour milling
573	M/s Pawan Atta Chakki Email: gpawankumar090@gmail.com	Haridwar	29, Maktulpuri Roorkee Haridwar	MICRO	Flour milling
574	ANSARI PESTICIDE BHANDAR Email: muzammilansari8475881481@gmail.com	Haridwar	VILL- MANAK MAZARA, POST- HALLUMAJRA BHAGVANPUR HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
575	KANHAIYA KRISHI SEWA KENDRA Email: ss5747518@gmail.com	Haridwar	VILL+POST- PALOONI BHAGVANPUR HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
576	CHOUDHARY AND SONS TRADERS Email: nitinverma19dec@gmail.com	Haridwar	WARD NO 7, LAKSAR PURVI NEAR SHIV MANDER Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
577	JANTA BEEJ BHANDAR Email: adarshsaini440@gmail.com	Haridwar	NEW MANDI JHABRERA ROORKEE HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
578	NEW DURGA BEEJ BHANDAR Email: rakeshkumar750526@gmail.com	Haridwar	KHASRA NO- 793/1/4 NEW MANDI JHABRERA HARIDWAR Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
579	laxmi khad avam beej bhandar Email: vikkusainiom@gmail.com	Haridwar	vill+post- kotamuradnagar haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
580	new nawaz krishi seva kendra Email: newnawaj@gmail.com	Haridwar	vill+post - ratenpur haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
581	shree hari Email: ayaanshul92@gmail.com	Haridwar	vill+post imalikhara dhrampur roorkee haridwar Haridwar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
582	M/s Sahab Singh Atta Chakki Email: kumairiya65@gmail.com	Haridwar	VILLAGE & POST - GAINDIKHATA HARIDWAR Haridwar	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
583	MAA GANGA ATTA CHAKKI Email: pramodk224@gmail.com	Haridwar	GRAM GANESHPUR BAHAR HADUD NAGAR NIGAM ROORKEE Haridwar	MICRO	Flour milling
586	godawari industries Email: pnkj.mttl@gmail.com	U S Nagar	vill umraukhurd	SMALL	Inorganic farming of non-basmati rice
587	Sitaram Industries Email: balajiflourmill01@gmail.com	U S Nagar	Pachpera, Nanakmatta	SMALL	Rice milling
588	Naresh Trading Co Email: gopalgarg783@gmail.com	U S Nagar		MICRO	Rice milling
589	Krishna Traders Email: gopalgarg783@gmail.com	U S Nagar		MICRO	Rice milling
590	G G AGRI FOODS Email: subhash.sitarganj@gmail.com	U S Nagar	VILLAGE BIRIYA	MICRO	Rice milling
591	ANAPURNA FOODS Email: kailashsassociates@gmail.com	U S Nagar	VILLAGE-SHIMLA PISTORE	MICRO	Rice milling
592	MS LAHORIAN ENTERPRISES Email: advocatenaresh73@gmail.com	U S Nagar	Village Gajrola Bazpur	SMALL	Manufacture of corrugated paper board containers
593	PUNJAB SEEDS Email: sanveetchawla15@gmail.com	U S Nagar	DINESHPUR ROAD, JAFARPUR	SMALL	Growing of other oil seeds
594	HANUMAN RICE MILL Email: NAVEENGUPTA13504@GMAIL.COM	U S Nagar	VILL-IKGHARA, TEH- BAZPUR, BAZPUR	MICRO	Rice milling
595	Shiv Shakti Industries Email: gopalagarwal777@yahoo.co.in	U S Nagar	VILL. BHOOR MAHOLIYA, SITARGANJ ROAD, KHATIMA	SMALL	Rice milling
596	Shri Banke Bihari foods Unit II Email: bajajpankajbajaj@gmail.com	U S Nagar	Village Bhaisiya, Surajpur opposite Tehsil. Gadarpur	MICRO	Rice milling
597	RAHMAN AATA CHAKKI Email: rihasataligdr@gmail.com	U S Nagar	VILL - RATNAMADIYA WARD NO 6	MICRO	Flour milling
598	Mittal Agro Industries Email: pmittal37@gmail.com	U S Nagar	VILLAGE VEERU NAGLA, KICHHA	SMALL	Rice milling
599	GANGWAR ATTA CHAKI Email: 1996monusrivastava@gmail.com	U S Nagar	WARD NO. - 2, RAJA COLONY, TRANSIT CAMP, RUDRAPUR	MICRO	Flour milling
600	JAISH ATTA CHAKKI Email: OFFICE02234@GMAIL.COM	U S Nagar	KESHOGARH, RICHHA	MICRO	Flour milling
601	LAXMI ATTA CHAKKI Email: kumar89pankaj@rediffmail.com	U S Nagar	SHIV NAGAR, NAUGAWA THAGO, KHATIMA	MICRO	Flour milling
602	AARAL AGRO INDUSTRY Email: RAJESHGARGME@GMAIL.COM	U S Nagar		MICRO	Rice milling
603	NAMAN ATTA CHAKKI Email: ravindrakumar84@gmail.com	U S Nagar	SHOP NO. - 4, VALMIKI MANDIR, WARD NO. - 10, GANDHI COLONY, RUDRAPUR - 263153	MICRO	Flour milling
604	RUDRAKSHA RICE MILLS Email: vishubgoel@gmail.com	U S Nagar	VILL - LAMBAKHERA	SMALL	Rice milling
605	Bansal Floor Mill Email: ms.apac@rediffmail.com	U S Nagar	adarsh colony	MICRO	Flour milling
606	jai isht dev chakki udhyog Email: manoharbisht1977@gmail.com	U S Nagar	chakarpur billeri	MICRO	Flour milling
607	ARORA INDUSTRIES Email: naveenarora048@gmail.com	U S Nagar	JAMOUR KHATIMA UDHAM SINGH NAGAR	SMALL	Rice milling
608	chand atta chakki Email: skaphalia@gmail.com	U S Nagar	sikalpatty,bhura kishai	MICRO	Other post harvest crop activities, n.e.c.
609	OM FOODS Email: ashish.banga09@gmail.com	U S Nagar	Vill- Shimla Pistaur, Near Malsa Girdharpur, P.O.- Lalpur, Rudrapur	SMALL	Rice milling
610	Sri Sood Enterprises Email: srisoodenterprises@gmail.com	U S Nagar	Bhona Biraha Road, Bazpur	SMALL	Rice milling
611	P K AGRO INDUSTRIES Email: lalbahadur024@gmail.com	U S Nagar	VILLAGE BIRIYA MAJHOLA	SMALL	Rice milling
612	JAGDAMBA AGRO SEEDS Email: SACHINARORA.STG@GMAIL.COM	U S Nagar	BHIKHARI PUR ROAD	SMALL	Rice milling
613	Shri Products Email: rakesh.kumar2119@yahoo.com	U S Nagar	Bhikampuri	SMALL	Rice milling
614	DURGA RAM Email: durga.ramkashipur@gmail.com	U S Nagar	VILLAGE - BANGALI COLONY, HEMPUR ISMAIL, RUDRAPUR - KASHIPUR ROAD, KASHIPUR, U.S. NAGAR UTTARAKHAND	MICRO	Rice milling
615	BHAGWATI AGRO FOODS Email: manish.sunrifestg@yahoo.co.in	U S Nagar	VILLAGE MALPURI	SMALL	Rice milling
616	M S FOOD INDUSTRIES Email: msricemillgdp@gmail.com	U S Nagar	KHASRA NO. 374/375, VILLAGE DONGPURI, KAILASHPUR	SMALL	Flour milling
617	Shobhit Enterprises Email: vinaygupta.24nov@gmail.com	U S Nagar	8/2 industrial area, rudrapur	MICRO	Rice milling
618	K N INDUSTRIES Email: anil2012kr@gmail.com	U S Nagar	KHATIMA	SMALL	Rice milling
619	KAILASH TRADING CO UNIT 2 Email: kailash.rdr@gmail.com	U S Nagar	KICHHA ROAD	MICRO	Rice milling
620	PARIDHI FOODS Email: Namangarg5@gmail.com	U S Nagar	PLOT NO-56 VILAAGE CHUKTI NALANDA SCHOOL ROAD KICHHA	SMALL	Rice milling
621	Dev Ansh Atta Chakki Email: jaiswalvinod839@gmail.com	U S Nagar	village Bhanga, Kichha	MICRO	Flour milling
622	Shree Hanumant Seeds Email: 98376manish@gmail.com	U S Nagar	Village Piplia	MICRO	Seed processing for propagation
623	SINGHAL RICE MILL Email: ashokdarshanandco@gmail.com	U S Nagar	KHET NO 164/2/1 VILLAGE CHUKTI TEHSIL KICHHA U.S.NAGAR UTTARAKHAND	SMALL	Agricultural activities on a fee or contract basis

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
624	ONKAR FOODS Email: akmittalca13@gmail.com	U S Nagar	TAPERA, NANAKMATTA	SMALL	Rice milling
625	SHRI MAHAVEER SEEDS & GENERAL MILLS Email: gaurav.agarwal17@yahoo.com	U S Nagar		SMALL	Rice milling
626	NARESH TRADING CO Email: akmittalca14@gmail.com	U S Nagar		MICRO	Rice milling
627	KRISHNA TRADERS Email: cadsdeol@yahoo.in	U S Nagar		MICRO	Rice milling
628	Krishna Aata Chakki Email: gauravrajputbazpur@gmail.com	U S Nagar	Ward No. 5, Police Chowki Kelakhera, Bazpur, Udham Singh Nagar, 263150	MICRO	Flour milling
629	Sri Sood Enterprises Email: shaurya9003@gmail.com	U S Nagar	Bhona Biraha Road, Bazpur	SMALL	Growing of wheat
630	laxmi industries Email: sramtiwari2010@gmail.com	U S Nagar	vill-inderpur, post pratappur kichha u.s nagar	SMALL	Growing of wheat
631	yash enterprises Email: agsit.in@gmail.com	U S Nagar	CHINTI MAJARA WARD NO-1 SITARGANJ	MICRO	Growing of wheat
632	Sharma Atta Chakki Email: Ps230501@gmail.com	U S Nagar	Shanti Colony, Near Sharda Health park, Rudrapur	MICRO	Other grain milling and processing n.e.c.
633	DEVBHUMI ATTA CHAKKI Email: riturajgourh23@gmail.com	U S Nagar	TEEN PANI DAMM, FULSUNGA, RUDRAPUR	MICRO	Flour milling
634	Ajam Atta Chakki Email: ikrarhussain1980@gmail.com	U S Nagar	Siraulikala, Ward No 2, Kichha	MICRO	Growing of wheat
635	B S AGRO SEEDS Email: BALDEVSINGHGOGAB75@GMAIL.COM	U S Nagar	DOHRA SISAIKHERA	MICRO	Other grain milling and processing n.e.c.
636	KGN Mini Rice Plant Email: atasleem295@gmail.com	U S Nagar	Village Darau, Kichha	MICRO	Growing of wheat
637	CLASSIC ENTERPRISES Email: classicgk2016@gmail.com	U S Nagar	12Km Stone, Rudrapur Gadarpur Road, Opp. SIMT, Village Pipliya	SMALL	Preservation of fruit and vegetables n.e.c.
638	Noor Atta Chakki Email: tanveerahamad632@gmail.com	U S Nagar	Village Siraulikala, Kichha	MICRO	Growing of wheat
639	New Bismil Atta Chakki Email: shamir1993@rediffmail.com	U S Nagar	Village Darau, Kichha	MICRO	Growing of wheat
640	TARAI FARM LANDS PVT LTD Email: taraifarmlands.pvtltd@gmail.com	U S Nagar	Fazalpur Mahrola, Rudrapur	SMALL	Other post harvest crop activities, n.e.c.
641	R S Enterprises Email: radheyshyam20071975@gmail.com	U S Nagar	Village Baghwala, Rudrapur	MICRO	Organic farming of basmati rice
642	Swastik Rice Land Pvt Ltd Email: ashishagrawal15@hotmail.com	U S Nagar	Bindukhera Road	SMALL	Rice milling
643	Abid Atta Chakki Email: alqureshmnazim@gmail.com	U S Nagar	Katoratal, kashipur	MICRO	Growing of wheat
644	Ray Mini Plant Email: akray716@gmail.com	U S Nagar	Khanpur Purab No 1, Khanpur Rudrapur	MICRO	Growing of wheat
645	Kashyap Atta Chakki Email: kghansyam024@gmail.com	U S Nagar	Maheshpura, Bazpur	MICRO	Growing of wheat
646	S R SEEDS Email: ballugheek@gmail.com	U S Nagar	VILL- JAHANGEERPUR, P.O- KHANPUR, TEHSIL- RUDRAPUR	SMALL	Other grain milling and processing n.e.c.
647	ANAND NATURAL FARMS FOOD PRODUCTS Email: shivampapneja4@gmail.com	U S Nagar	Ramjeevanpur, Gadarpur	MICRO	Processing and blending of tea including manufacture of instant tea
648	Pal Atta Chakki Email: pal068986@gmail.com	U S Nagar	Uttaranchal Colony Near Power house	MICRO	Growing of wheat
649	kumaun aata chakki Email: akbarali0001984@gmail.com	U S Nagar	Jaspur khurd, Durga Colony, Kashipur	MICRO	Growing of wheat
650	JAGDISH PRASHAD AGARWAL Email: AKMITTALCA4@GMAIL.COM	U S Nagar	KICHHA	SMALL	Rice milling
651	Goel Industries Email: goelindustries727@gmail.com	U S Nagar	Nadehi Road, Jaspur	MICRO	Growing of wheat
652	MAA PURNAGIRI ATTA CHAKI Email: sunnypaswan340@gmail.com	U S Nagar	Chatrarpur	MICRO	Flour milling
653	REJA FOOD PRODUCTS Email: rrahulrudrapur@gmail.com	U S Nagar	SHOP NO. - 17, BASERA COLONY, GANGAPUR ROAD, FULSUNGI, RUDRAPUR	MICRO	Flour milling
654	SOM AGRO SEEDS Email: gumberadv@gmail.com	U S Nagar	KAUSHALPUR , GADARPUR , UDHAM SINGH NAGAR , UTTARAKHAND	MICRO	Seed processing for propagation
655	KRISHNA FOOD PRODUCTS Email: goyal.rajeev80@gmail.com	U S Nagar	PLOT NO 68/1, NH-74,DEVARIA	MICRO	Dal (pulses) milling
656	AMANSUDEEP MINI RICE MILL Email: shamshersingh1621971@gmail.com	U S Nagar	VILLAEG-VIJAY NAGAR	MICRO	Rice milling
657	Anchal bakers Email: mr.princegoyal@gmail.com	U S Nagar	kishan pur village,kichha	MICRO	Growing of mangoes
658	Ajam Atta Chakki Email: mohammadali262402@gmail.com	U S Nagar	Village Bandiya, Kichha	MICRO	Growing of wheat
659	NEELAM ATTA CHAKKI Email: neelamr898@gmail.com	U S Nagar	EWS B - 892, VIVEKANAND NAGAR, NEAR SHIV MANDIR CHOWK, AWAS VIKAS, RUDRAPUR U.S. NAGAR UTTARAKHAND	MICRO	Flour milling
660	Dhan Singh Atta chakki Email: dheerajsinghkoranga@gmail.com	U S Nagar	Kopa Munsyari, Gularbhoj	MICRO	Growing of wheat
661	Jay Bholey Atta Chaki Email: gmdicusn@gmail.com	U S Nagar	Gurugaram shatifarm Sitarganj	MICRO	Growing of wheat
662	Unnavi Flour Mill Email: mamoonakhatoon81@gmail.com	U S Nagar	Village Paiga, Kashipur usnagar	MICRO	Growing of wheat

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
663	SHRI BANKEY BIHARI INDUSTRIES Email: MANOJ70738@GMAIL.COM	U S Nagar	BIJITI ROAD	SMALL	Rice milling
664	Surjeet singh Atta chaki Email: surjeetsinghnmt@gmail.com	U S Nagar	Village Sarounja Sitarganj	MICRO	Growing of wheat
665	PAWAR ATTA CHAKKI Email: harishpawar01051981@gmail.com	U S Nagar	Village Bhajpuri Kulha Post office Majhra Anand singh Tehsil Gadarpur	MICRO	Flour milling
666	GT AGRO INDUSTRIES Email: capranavgoel2@gmail.com	U S Nagar	Khasra No. 843 & 851 Min, Vill. Shimla Pistaure, Kichha Road, Rudrapur, U.S.Nagar, Uttarakhand	SMALL	Rice milling
667	Arti Atta Chakki Email: yadav1983sanjay@gmail.com	U S Nagar	islamnagar, ward no 3, sitarganj	MICRO	Growing of wheat
668	MAHENDRA PAL ATA CHAKKI Email: mp165668@gmail.com	U S Nagar	Village saijna, Khatima	MICRO	Growing of wheat
669	JD FOODS Email: HARRYKHANWANI108@GMAIL.COM	U S Nagar	VILL. GIDHPURI KIICHHA	MICRO	Flour milling
670	Shrink Tech Converters Email: shrinktech.packaging@gmail.com	U S Nagar	Khasara No. 43/1/1 Gava Rice Mill Compound Kashipur By Pass Road Rudrapur	SMALL	Packaging activities
671	Rohit Atta Chakki Email: rmistri102@gmail.com	U S Nagar	Mohanpur No 2, Udham Singh Nagar	MICRO	Growing of wheat
672	Aanandi Kutir Udyog Email: pankajverma95681@gmail.com	U S Nagar	ward no1 kichha usnagar	MICRO	Growing of wheat
673	DILIP MANDAL Email: dilipman1980@gmail.com	U S Nagar	GOVIND NAGAR, Shaktifarm, sitarganj	MICRO	Grain milling other than wheat, rice and dal
674	L K Foods Email: kumarkishan17821@gmail.com	U S Nagar	village Indrpur	MICRO	Growing of wheat
675	Shiva Attta Chaki Email: Anilbhole05@gmail.com	U S Nagar	Bhoot bangala Rudarpur	MICRO	Growing of wheat
676	Maruti Seeds Email: sharmasatish123456@gmail.com	U S Nagar	shanti colony, Rudarpur	SMALL	Seed processing for propagation
677	MADE NATURAL FOODS INDIA PRIVATE LIMITED Email: madenaturalfoods@gmail.com	U S Nagar	PLOT NO R2, HIMALYAN FOOD PARK	MEDIUM	Flour milling
678	J P INDUSTRIES Email: aditya9995555@gmail.com	U S Nagar	Vill majhola , Khatima	SMALL	Rice milling
679	Azeem Atta Chakki Email: azeemalibazpur@gmail.com	U S Nagar	mundia pistour, bazpur	MICRO	Growing of wheat
680	ANWIT PACKERS Email: anwitpackers24@gmail.com	U S Nagar	KHASRA NO 487/1 HONDA COMPLEX VILL BAGWARA RUDRAPUR	SMALL	Packaging activities
681	MAA BARAHI RICE MILL Email: gopaljoshi.stg@gmail.com	U S Nagar	SADHU NAGAR ROAD, SISAIKHERA	SMALL	Rice milling
682	MINHAS FOODS Email: ps241173@gmail.com	U S Nagar	Village- Sarkeri, Post- Kelakhera, Tehsil- Bazpur	MICRO	Flour milling
683	DHANVANTARI TARAI SEEDS PVT LTD Email: dhanvantariseedsuk@gmail.com	U S Nagar	Mahukheraganj Kashipur	SMALL	Rice milling
684	ASIM SARDAR Aata chacki Email: narayansardar04@gmail.com	U S Nagar	SHAKTIFARM NO 3 DEVNAGAR U S NAGAR	MICRO	Growing of wheat
685	datta aata chakki Email: manjitsinghdatta@gmail.com	U S Nagar	naugawanath	MICRO	Rice milling
686	N S INDUSTRIES Email: kharayatkm01@gmail.com	U S Nagar	KHATIMA	SMALL	Rice milling
687	MURLIVALA AGRO PRODUCTS Email: pnkj.mttl@gmail.com	U S Nagar	KANJABAGH ROAD	MICRO	Seed processing for propagation
688	TRANSCON POWER PVT LTD UNIT II Email: transconp@gmail.com	U S Nagar	PLOT 2,10 SECTOR IIDC	SMALL	Manufacture of machine tools for turning, drilling, milling, shaping, planning, boring, grinding etc.
689	SHREE RICE MILL Email: KUMARPRATEEK780@GMAIL.COM	U S Nagar	NAKULIA ROAD SITARGANJ	SMALL	Rice milling
690	PUANA PACKAGING PRODUCTS PRIVATE LIMITED Email: puanaproducts@gmail.com	U S Nagar	B-149 & 150, ELDECO SIDCUL INDUSTRIAL PARK LIMITED, JAIL CAMP, SITARGANJ	SMALL	Manufacture of semi-finished of plastic prouducts (plastic plates, sheets,blocks,film,foil,strip etc.)
691	VIJAY SHANKAR BANARJI Email: vijayshankrbanerjee@gmail.com	U S Nagar	SHAKTIFARM NO 4 TAIGOR H.NO. 290 WARD NO 5 UDHAM SINGH NAGAR UTTRAKHAD 263151	MICRO	Growing of wheat
692	JUNAID INDUSTRIES Email: junaidans792@gmail.com	U S Nagar	NAKULIA ROAD, CHAUMELA, SITARGANJ	MICRO	Manufacture of semi-finished of plastic prouducts (plastic plates, sheets,blocks,film,foil,strip etc.)
693	BANSAL INDUSTRIES Email: bi.vinay@gmail.com	U S Nagar	15/, INDUSTRIAL AREA	MICRO	Seed processing for propagation
694	Shivam Atta Chaki Email: rahuljaspur48@gmail.com	U S Nagar	MOH UTTAM PATTI NEAR FAIZ E AAM JASPUR	MICRO	Growing of wheat
695	Bansal Agro Products Email: aman.bansalagro@gmail.com	U S Nagar	vill - malpuri, pilibhit road, sitarganj	SMALL	Manufacture of macaroni, noodles, couscous and similar farinaceous products
696	KRISHNA AGRI SEEDS Email: raviaggarwal.uk@gmail.com	U S Nagar	VILL BINDUKHERA GADARPUR ROAD RUDRAPUR	MICRO	Seed processing for propagation
697	NATURAL FOODS INDUSTRIES Email: foods.natural@yahoo.com	U S Nagar	R1 HIMALYAN FOOD PARK MAHUAKHERA GANJ KASHIPUR	SMALL	Flour milling
698	R P SEED RICE UNIT Email: rpseedsitarganj@yahoo.com	U S Nagar	KICHHA BYPASS ROAD	SMALL	Rice milling
699	GOEL INDUSTRIES Email: UJJAWALGOEL93@GMAIL.COM	U S Nagar	VILL RAJPUR, Nadehi sugarmill road,	SMALL	Rice milling
700	GEETA DEVI ATTA CHAKKI Email: PRADEEPPK721@GMAIL.COM	U S Nagar	BARHENI, BAZPUR	MICRO	Growing of wheat

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
701	CHANDRIKA MANDAL Email: govindmandal75@gmail.com	U S Nagar	VILLAGE PANCHANANPUR, POST KALINAGAR, BLOCK GADARPUR	MICRO	Flour milling
702	Tretanature Agri Product Private Limited Email: hr@naturepearlsmail.com	U S Nagar	Multigrain Processing Unit C 45-48, Mandi Parishad Land Area NH - 87, opposite SIDCUL Office Rudrapu	MEDIUM	Growing ofjowar, bajra and millets
703	Shri Bankey bihari Food Products UNIT-II Email: sanjay26080@gmail.com	U S Nagar	VILLAGE SATUYIA, KICHHA	MICRO	Rice milling
704	UTKARSH FOOD PRODUCTS Email: homefreshmasale@gmail.com	U S Nagar	GOVINDPUR GULARBHOJ	SMALL	Grinding and processing of spices
705	ANSH MINI RICE MILL Email: pradeepsingh73000@gmail.com	U S Nagar	VILL & POST - PREMNAGAR GADARPUR NEAR SIMT COLLAGE NH 74	MICRO	Growing of wheat
706	YUVAJ ATTA CHAKKI Email: GPC.RDR91@GMAIL.COM	U S Nagar	VILLAGE DEEN PUR NANAKMATT	MICRO	Flour milling
707	DHANOA FOODS Email: laddidhanoa26@gmail.com	U S Nagar	VILLAGE NAMUNA BAZPUR DISTRICT U S NAGAR	MICRO	Growing of other cereals
708	Sageer Atta Chakki Email: sagirahamad720@gmail.com	U S Nagar	VILLAGE SIRALI KALAN, KICHHA	MICRO	Flour milling
709	GURUNANAK ATTA CHAKKI Email: harjeetsingh2017@rediffmail.com	U S Nagar	WARD NO 6, NAYI SUNEHARI, KICHHA	MICRO	Flour milling
710	TANYA ENTERPRISES Email: tanyaentpksp@gmail.com	U S Nagar	village phasiyapura, kashipur	MICRO	Flour milling
711	SINGH SAHAB ENTERPRISES Email: gurdevnmt@gmail.com	U S Nagar	VILLAGE PACHPERA PATTHA, NANAKMATT	MICRO	Flour milling
712	PRAMHANS OIL Email: akashkalra99@gmail.com	U S Nagar	WARD NO 2, MOTIPUR, DINESHPUR	MICRO	Growing of mustard oil seed
713	Nishant Printpack Solutions Private Limited Email: npspl2017@rediffmail.com	U S Nagar	Khet No-405	SMALL	Manufacture of corrugated paper board containers
714	DEV BHOOMI OIL COMPANY Email: devbhoomioilcompany2017@gmail.com	U S Nagar	LBSS DIGREE COLLEGE ROAD, HARIPURA, NAGAR PANCHAYAT MAHUWADABRA	SMALL	Manufacture of hydrogenated oil and vanaspati ghee
715	MOURYA ATTA CHAKKI Email: sumanbris02@gmail.com	U S Nagar	DOPHARIA, KICHHA	MICRO	Flour milling
716	Shree Ganga Industries Email: shreeganga.ksp@gmail.com	U S Nagar	At Himalayan Food Park Pvt. Ltd.	SMALL	Manufacture of corrugated paper board containers
717	GURUNANAK AATA CHAKKI Email: balsingh2121980@gmail.com	U S Nagar	VILLAGE CHINKI, KICHHA	MICRO	Other grain milling and processing n.e.c.
718	LAKHPAT SINGH ATTA CHAKKI Email: skrath420@gmail.com	U S Nagar	WARD NO 2, SHIV NAGAR, TRANSIT CAMP, RUDRAPUR	MICRO	Flour milling
719	RAM KUMAR ATTA CHAKKI Email: laldori1983@gmail.com	U S Nagar	VIVEK NAGAR, WARD NO 2, TRANSIT CAMP, RUDRAPUR	MICRO	Flour milling
720	mohd farman Email: mohdfarmankachnal@gmail.com	U S Nagar	VILL KACHNAL GUSAI ,kashipur	MICRO	Flour milling
721	KUNDAN SARSO TEL MILL Email: ajay22jul@gmail.com	U S Nagar	CHHINAKI	MICRO	Growing of mustard oil seed
722	Numix Industries Private Limited Email: anish@numix.in	U S Nagar	Himalaya food park, mahuakhera ganj	SMALL	Other semi-processed, processed or instant foods n.e.c.
723	TARA MOTI FOODS Email: taradutt42@gmail.com	U S Nagar	DHANDA FARM, VILLAGE PIPALIYA, KICHHA	SMALL	Flour milling
724	Rathore Laghu Udyog Email: dharamveer.rathore@gmail.com	U S Nagar	29 Sitarganj Road Nanakmatta, Udham Singh Nagar	MICRO	Manufacture of semi-finished of plastic prouducts (plastic plates, sheets,blocks,film,foil,strip etc.)
725	SHRIGEE AGRO FOODS Email: RITESHGOYAL31@GMAIL.COM	U S Nagar	VILLAGE PIPALIYA NATHU	MEDIUM	Rice milling
726	RAJ ATTA CHAKKI Email: 82jaganlal@gmail.com	U S Nagar	ward no 4, shanti colony road, near lata pco, bhadaipura, rudrapur	MICRO	Flour milling
727	NIKHIL MANDAL Email: nikhilmandal1991@gmail.com	U S Nagar	GOVIND NAGAR SHAKTIFARM	MICRO	Growing of wheat
728	shri shardanand food processing private limited Email: ssfppl2108@gmail.com	U S Nagar	himalayan food park	MEDIUM	Manufacture of macaroni, noodles, couscous and similar farinaceous products
729	YAPS N BELLY FOOD PRODUCTS PRIVATE LIMITED Email: satvir@yapsnbelly.com	U S Nagar	HIMALAYAN FOOD PARK, MAHUAKHERAGANJ, KASHIPUR	MEDIUM	Manufacture of malted foods including foods for infants and handicapped
730	Sumarsh Nutri Products Private Limited Email: sumarshnutriproducts@gmail.com	U S Nagar	Plot no 19, Himalayan food park, Village Mahuakhera Ganj, Kashipur	MEDIUM	Flour milling
731	HARI ROLLER FLOUR MILLS Email: bsvk.kashipur@gmail.com	U S Nagar	Himalayan Mega Food Park, Village Mahuakhera	MEDIUM	Flour milling
732	BANSAL INDUSTRIES Email: bi.vinay@gmail.com	U S Nagar	Village and PO DANPUR	SMALL	Rice milling
733	LAL MINI FLOUR MILL Email: raj14718@gmail.com	U S Nagar	village lakhampur, bazpur	MICRO	Flour milling
734	Godfry Phillips India Limited Email: rtripathi-gpi@modi.com	U S Nagar	UPSIDC Indl area Bazpur	MEDIUM	Processing and blending of tea including manufacture of instant tea
735	SK Agro Foods Email: skagrofoodsuk@gmail.com	U S Nagar	Khet No. 931 Min Village Chinki	SMALL	Rice milling
736	VIMO GREEN Email: chauhanvipinkumar@gmail.com	U S Nagar	VILL DHEEMARKHERA POST KASHIPUR	MICRO	Flour milling
737	JINDAL INDUSTRIES Email: sandeepjindal088@gmail.com	U S Nagar	KHATIMA ROAD, SITARGANJ	MEDIUM	Rice milling
738	SHREE TIRUPATI INDUSTRIES Email: SAXE321.RUDRAPUR@GMAIL.COM	U S Nagar	MAA BHAGWATI ENCLAVE FULSUNGA RUDRAPUR UDHAM SINGH	MICRO	Manufacture of macaroni, noodles, couscous and similar farinaceous products

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
739	I K SHAH INDUSTRY Email: ypadvocate29@gmail.com	U S Nagar	vill- missarwala , kashipur	MICRO	Flour milling
740	Radheshyam tool and design Email: radheshyamtool.design@gmail.com	U S Nagar	sec-9 5B1 SIDCUL PANTNAGAR	SMALL	Manufacture of machine tools for turning, drilling, milling, shaping, planning, boring, grinding etc.
741	KANCHAN ATTA CHAKKI Email: chandrawati.rdr@gmail.com	U S Nagar	GANGAPUR ROAD, NEAR JPS SCHOOL, RUDRAPUR	MICRO	Flour milling
742	DASHMESH ATTA CHAKKI Email: GPC.RDR105@GMAIL.COM	U S Nagar	VILLAGE SISAIYA	MICRO	Flour milling
743	SHARMA PLASTIC UDYOG Email: abhishekjetaly.aj@gmail.com	U S Nagar	KHET NO 162/1, SAKAINIA ROAD, GADARPUR	MICRO	Manufacture of semi-finished of plastic prouducts (plastic plates, sheets,blocks,film,foil,strip etc.)
744	NASEER AHMAD Email: naseersaifi510@gmail.com	U S Nagar	BAZPUR GAON NEAR BY-GOVT INTER COLLEGE PO-MAHESHPURA TEH-BAZPUR DISST-UDHAM SINNGH NAGAR STATE-UK	MICRO	Flour milling
745	Hariman Seeds Email: harimanseeds@gmail.com	U S Nagar	Khatima Road, Sisai Khera, Tehsil-Sitarganj, U.S. Nagar, Uttarakhand	SMALL	Rice milling
746	TESHU BHARADWAJ Email: bharadwaj.teshu@rediffmail.com	U S Nagar	VILLAGE FULSUNGA,TEEN PANI DAM, RUDRAPUR	MICRO	Grinding and processing of spices
747	M B Agro Mills Email: mbagromillsstg@gmail.com	U S Nagar	Khasra No- 1K Min, 1KH, 1 G Min, 616, 615/2, 615/1, 193/3, Village- Malpuri, Tehsil- Sitarganj	MEDIUM	Rice milling
748	GUPTA SEEDS PRODUCTS Email: amitgpt24@gmail.com	U S Nagar	Village Kudianwala, Jaspur Road	SMALL	Rice milling
749	PREMA AATA CHAKKI Email: boraprema1@gmail.com	U S Nagar	VILL DEVKALA	MICRO	Flour milling
750	SHREE SHYAMJI AGRO PRODUCTS Email: GPC.RDR85@GMAIL.COM	U S Nagar	VILLAGE SISAIKHERA	SMALL	Manufacture of macaroni, noodles, couscous and similar farinaceous products
751	ARADHYA INDUSTRIES Email: chhabraarchit@gmail.com	U S Nagar	KHATA NO. 162 VILALGE BINDUKHERA	SMALL	Rice milling
752	GAJENDRA SINGH KARKI ATTA CHAKKI Email: GPC.RDR15@GMAIL.COM	U S Nagar	SISONA	MICRO	Flour milling
753	NOBLE CHOCOLATZ Email: gobbind972@gmail.com	U S Nagar	B-204, 205 AND 206	SMALL	Manufacture of chocolate and chocolate confectionery
754	KRIPAL ENTERPRISES Email: sawhneykashipur@gmail.com	U S Nagar	NEAR SHANI MANDIR SUGAR MILL ROAD SUBHASH NAGAR	MICRO	Flour milling
755	YASHODA INDUSTRIES Email: caaandr5@gmail.com	U S Nagar	Alakhdevi Road, Prem Nagar	SMALL	Rice milling
756	Saurabh Atta chakki Email: premwati_devi@rediffmail.com	U S Nagar	village rainta, bazpur	MICRO	Flour milling
757	SAINI ATA CHAKKI Email: kunwarpals945@gmail.com	U S Nagar	KARANPUR, KUNDA, UDHAM SINGH NAGAR	MICRO	Flour milling
758	R K AGARWAL AGRO SEEDS LIMITED UNIT 2 Email: anjuchugh1976@gmail.com	U S Nagar	VILLAGE PAIGA ALIGANJ ROAD KASHIPUR	MICRO	Seed processing for propagation
759	SHIVAJI ATTA CHAKKI Email: ajitkumar.1462@rediffmail.com	U S Nagar	AZAD NAGAR, KICHHA	MICRO	Flour milling
760	VISHNU BHOG Email: vishnubiswas314@gmail.com	U S Nagar	village pipaliya no 1, post premnagar, gadarpur	MICRO	Flour milling
761	P N PACKAGING Email: ams.accounts1@gmail.com	U S Nagar	MONGA RICE MILL COMPOUND BHURA RANI ROAD NEAR RAILWAY CROSLING RUDRAPUR	SMALL	Manufacture of corrugated paper board containers
762	Goswami Enterprises Email: pramodgiri770@gmail.com	U S Nagar	opposite vimal homes, bagwara road, rudrapur	MICRO	Flour milling
763	OM SAI FOOD INDUSTRIES Email: dashingbaweja@gmail.com	U S Nagar	ho no-1307 bhadaipura ward no-4 rudrapur	MICRO	Growing of wheat
764	SHRI HARIKRISHAN FLOUR MILL Email: devkaushikksp@rediffmail.com	U S Nagar	rajpora rani	MICRO	Growing of wheat
765	YADAV ATTA CHAKKI Email: vijenras@rediffmail.com	U S Nagar	VILLAGE SARKARA, NAKATPURA, SITARGANJ	MICRO	Flour milling
766	SHIV SHAKTI TRADERS Email: shiv84549@gmail.com	U S Nagar	FULSUNGA, RUDRAPUR	MICRO	Grinding and processing of spices
767	NEW KITCHEN FRESH MASALA Email: NIRMLAK1977@GMAIL.COM	U S Nagar	WARD NO 04, DINESHPUR	MICRO	Grinding and processing of spices
768	CHAUHAN ATTA CHAKKI Email: razashahid14147097@gmail.com	U S Nagar	WARD NO 5, KHERA COLONY,RUDRAPUR	MICRO	Flour milling
769	BALAJI ATTA CHAKKI Email: girishbist13@gmail.com	U S Nagar	KIRATPUR, KOLDA, DANPUR NEAR ICE FACTORY	MICRO	Flour milling
770	SANKALP RICE & FLOUR MILL Email: CAALOKGUPTA@LIVE.IN	U S Nagar	VILLAGE-SIHALI, BIRAHA ROAD	SMALL	Rice milling
771	Goyal Industries Email: goyalindustries1983@gmail.com	U S Nagar	Bareilly Bye Pass Road, Kichha	SMALL	Rice milling
772	Diamond Flour Mill Email: diamondflourmilljsp@gmail.com	U S Nagar	Khasra No. 00037 Vill Bhagwanpur Niwarmandi Road Jaspur Udham Singh Nagar Uttrakhand	SMALL	Flour milling
773	JPK FOODS Email: vinodcpant@yahoo.com	U S Nagar	KHASRA NO - 99 MI MAUJHA - NIJHRA	MICRO	Other semi-processed, processed or instant foods n.e.c.
774	UTTARANCHAL AGRO GRAMODYOG SANSTHAN Email: akuags@gmail.com	U S Nagar	SITARAMPUR KHARMASI, RAMNAGAR ROAD, KASHIPUR	MICRO	Manufacture of sauces, jams, jellies and marmalades
775	OM AGRO INDUSTRIES Email: mittaldipanshuss@gmail.com	U S Nagar	NANAK SAGAR CHAURAHA, KHATIMA	SMALL	Rice milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
776	MAA SHARDA AUTOMOTIVES Email: maashardaengineers@gmail.com	U S Nagar	KHASRA NO 547 K Min, Kichha Road Rudrapur	SMALL	Manufacture of machine tools for turning, drilling, milling, shaping, planning, boring, grinding etc.
777	UTTARAKHAND AATA CHAKKI Email: dreamindia71@gmail.com	U S Nagar	NEAR FORTUNE HOTEL KICHHA	MICRO	Flour milling
778	SHOURYA BANANA RIPENING PLANT Email: kashmirkamboj402@gmail.com	U S Nagar	KHET NO. 00130, VILL. SAKAINIYA	SMALL	Growing of bananas
779	OM AGRI PRODUCTS Email: rammohanthakur@yahoo.in	U S Nagar	VILLAGE-NIJHRA, NEAR SHIVALIK SCHOOL,KASHIPUR (UDHAM SINGH NAGAR) UTTARAKHAND	SMALL	Growing of mushrooms and truffles
780	PRAGATISHEEL SWAYAM SAHAYTA SAMUH Email: binusn.ad@gmail.com	U S Nagar	VIVEKDEEP SINGH S/O SHAMBHU SUMAN SINGH, NEAR SHAKTI DHARAM KANTA, KICHHA	MICRO	Other grain milling and processing n.e.c.
781	HARDYAL AATA CHAKKI Email: titukashyap164@gmail.com	U S Nagar	VILL. SATUEEYA POST BHANGA UDHAM SINGH NAGAR	MICRO	Flour milling
782	nihal chand mahendra kumar Email: rmittal1008@gmail.com	U S Nagar	21/2 industrial area rudrapur	SMALL	Organic farming of basmati rice
783	SK AGRO FOODS Email: skagrofoodsuk@gmail.com	U S Nagar	Khet No. 931 Min Village Chinki	SMALL	Rice milling
784	GUPTA OIL WORK Email: vijaykumargupta0711@gmail.com	U S Nagar	VILLAGE RAJEEV NAGAR, MELAGHAT ROAD, KHATIMA	MICRO	Growing of mustard oil seed
785	kissan rice mill Email: riteshgptoo@gmail.com	U S Nagar	by pass road sitarganj	SMALL	Rice milling
786	shree shakti rice & dal mill Email: mohakgrg94@gmail.com	U S Nagar	rudrapur road,kiccha , U.S. Nagar , Uttarakhand	SMALL	Rice milling
787	CHHOTE LAL MINI RICE MILL AND FLOUR MILL Email: singhdhurvvrana86@gmail.com	U S Nagar	VILLAGE TAPER, NANAKMATT	MICRO	Rice milling
788	KANSAL RICE MILL Email: KANSAL867@GMAIL.COM	U S Nagar	VILLAGE- BHAGORA, SITARGANJ	SMALL	Rice milling
789	shahid ali amanti atta chakki Email: shahid.ali.gdp@gmail.com	U S Nagar	WARD NO 6, ISLAMNAGAR, GADARPUR	MICRO	Flour milling
790	SHREE BHAGWATI AGRO MILLS Email: mahendragoyal72@gmail.com	U S Nagar	VILLAGE RAMPURA PARGANA RUDRAPUR BHURARANI ROAD	MICRO	Rice milling
791	JK RICE MILL Email: ashokdarshanandco@gmail.com	U S Nagar	VILLAGE MAHARAJPUR	SMALL	Rice milling
792	HARYANA RICE MILL Email: nagrawal1966@gmail.com	U S Nagar	VILLAGE RAMPURA BHURARANI ROAD RUDRAPUR	SMALL	Rice milling
793	RASOI BHOG MINI FLOUR MILL Email: GTAX3022@GMAIL.COM	U S Nagar	BAZPUR GAON	MICRO	Flour milling
794	GUPTA ATTA CHAKKI Email: suneetg1978@gmail.com	U S Nagar	WARD NO 20, JAGATPURA, RUDRAPUR	MICRO	Flour milling
795	RAMPAL AATA CHAKKI Email: rampal12595@gmail.com	U S Nagar	CHAKAUNI KURAIYA KICHHA UDHAM SINGH NAGAR	MICRO	Flour milling
796	MAA BHAGWATI ATTA CHAKKI Email: maabhagwatiattachakki@gmail.com	U S Nagar	178/1,CITY ONE ROAD, BHURARANI ROAD, RUDRAPUR	MICRO	Flour milling
797	Kashi food products Email: astrotoolandmachinery@gmail.com	U S Nagar	plot no 36 ,bala ji industrial area sec2 ,mahuakhera ganj kashipur ,uttrakhand	SMALL	Growing of mushrooms and truffles
798	QUALITY BAKE FOODS Email: rashidjaspur22@gmail.com	U S Nagar	MOH JULAHAN EIDGAH ROAD WARD NO 04	MICRO	Growing of wheat
799	SINGH ATTA CHAKKI Email: shamsher.662@rediffmail.com	U S Nagar	MADAIYA HATTU, BHAJUANAGLA, BAZPUR	MICRO	Flour milling
800	DANU LAGHU UDYOG Email: chanchaldanu123@gmail.com	U S Nagar	VILLAGE SURYA NAGAR, POST SURYA NAGAR, SHANTIPURI, KICHHA	MICRO	Flour milling
801	SHIV SHAKTI INDUSTRIES Email: GPC.RDR16@GMAIL.COM	U S Nagar	VILLAGE MATIHA	MICRO	Rice milling
802	J S INDUSTRIES Email: jsindustries405@gmail.com	U S Nagar	P.o and Vill kunda Jaspur road kashipur	SMALL	Manufacture of corrugated paper board containers
803	MYRA TECHNO PACKERS PRIVATE LIMITED Email: info.myrapackers@gmail.com	U S Nagar	PLOT NO 47A SECTOR 7 IIE SIIDCUL PANTNAGAR	SMALL	Manufacture of corrugated paper board containers
804	JINDAL FROZEN FOODS PRIVATE LIMITED Email: jindalfrozen@gmail.com	U S Nagar	BAZPUR ROAD KASHIPUR	SMALL	Preservation of fruit and vegetables n.e.c.
805	VARUNA WAREHOUSING PVT LTD Email: hr.rb.rudrapur@contractlogistics.co.in	U S Nagar	KHASRA NO 518, 527 SIMLA PISTORE	SMALL	Warehousing non-refrigerated
806	ASHRAYA MULTIGRAINS PRIVATE LIMITED Email: sumeraarav@gmail.com	U S Nagar	VILLAGE BARKHEDA PANDEY KASHIPUR	SMALL	Flour milling
807	AURA PACKAGING Email: nikhil_pansari@yahoo.com	U S Nagar	KHASRA NO 48MIN VILLAGE SHIMLA PISTOUR	SMALL	Manufacture of corrugated paper board containers
808	RBPPH PACKAGING PVT LTD Email: AJAY@JHMANUFACTURING.COM	U S Nagar	Village-KOLADIA, Sarswati Rice Mill Compound	SMALL	Manufacture of corrugated paper board containers
809	NDTP Foods Private Limited Email: ndtpfoods@gmail.com	U S Nagar	Himalayan Mega Food Park	MEDIUM	Artificial dehydration of fruit and vegetables
810	SHRI RAM SOLVENT EXTRACTIONS PVT LTD UNIT-III Email: neemplus@hotmail.com	U S Nagar	VILLAGE AHMADNAGAR	SMALL	Growing of pulses (dal) and other leguminous crops such as peas and beans, not used as oilseeds
811	SRBD industries Email: srbindustries@gmail.com	U S Nagar	SHIMLA BAHADUR RUDRAPUR	MICRO	Manufacture of machine tools for turning, drilling, milling, shaping, planning, boring, grinding etc.
812	A MAHEEP AAKARSH FOODS Email: amaheepaakarshfoods@gmail.com	U S Nagar	Ward no 7/1 Main Road Gadarpur, Opp Allahabad bank	MICRO	Growing of perennial and non-perennial spices and aromatic crops
813	Gopi Dehydrates Pvt Ltd Email: gm@gopifoods.com	U S Nagar	Mahuakhera Ganj, Kashipur	MEDIUM	Artificial dehydration of fruit and vegetables

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
814	DASMESH AGRO Email: baljeetsingh1341@gmail.com	U S Nagar	Jogithar Nagla, Pratappur	MICRO	Rice milling
815	KRI FOOD & BEVERAGES Email: krifoods@gmail.com	U S Nagar	KHASRA NO 474, DARAU ROAD, VILLAGE NAUGAWAN CHINKI, KICHHA	MICRO	Manufacture of sauces, jams, jellies and marmalades
816	DUSMESH MINI PLANT Email: roshan70556@gmail.com	U S Nagar	BAGWALA KOLDIYA	SMALL	Flour milling
817	Vishal Aata Chakki Email: harish.india2014@gmail.com	U S Nagar	Ward No 03, Tanda Banjara, Sultanpur patti	MICRO	Other semi-processed, processed or instant foods n.e.c.
818	PAWAN SINGH AATA CHAKKI Email: ps229693@gmail.com	U S Nagar	JAWAHAR NAGAR	MICRO	Flour milling
819	SHRI GURU NANAK ATTA CHAKKI Email: sheelaksp18@gmail.com	U S Nagar	H NO 48 KHARMASI OPP VISHWAKARMA FACTORY KASHIPUR	MICRO	Flour milling
820	Chocolate Fantasy Email: chocolatefantasy.rupc@gmail.com	U S Nagar	Jafarpur Durga City Colony, Dineshpur Road, Rudrapur, Udham Singh Nagar, UK	MICRO	Manufacture of chocolate and chocolate confectionery
821	JAGATJANANI FOODS Email: caaar10@gmail.com	U S Nagar	Village - Jafarpur	SMALL	Flour milling
822	SD OIL AND FLOUR MILL Email: SDOILLMILL@GMAIL.COM	U S Nagar	SHAKTIFARM	MICRO	Flour milling
823	Uttranchal Traders Email: rpseedsitarganj@yahoo.com	U S Nagar	Sitarganj	SMALL	Rice milling
824	ONKAR FOODS Email: onkarricemill@gmail.com	U S Nagar	Tapera, Nanakmatta	SMALL	Rice milling
825	MAISHA AGRO FOOD PRODUCTS Email: nasucie2011@gmail.com	U S Nagar	WARD NO 15, ISLAM NAGAR, JANTA INTER COLLEGE, KICHHA	MICRO	Growing of wheat
826	ABHINANDAN INDUSTRIES Email: abhinandanindustries.rdr@gmail.com	U S Nagar	KHET NO 150	SMALL	Flour milling
827	Madhu Atta Chakki Email: madhusingh01011988@rediffmail.com	U S Nagar	ward no. 02 Tilak nagar rudrapur udhamsingh nagar	MICRO	Flour milling
828	RADHAGOVIND SEEDS & ALLIED PRODUCTS PRIVATE LIMITED Email: saurabh.kashipur50@gmail.com	U S Nagar	VILL. KUDAIYOWALA	SMALL	Rice milling
829	Balwant Atta chakki Email: bdsingh128@gmail.com	U S Nagar	Vill-Chetuwakhera, PO-Gidhore	MICRO	Flour milling
830	SUDHA RICE AND SEEDS Email: fcasharul@gmail.com	U S Nagar	Garhi Negi	SMALL	Rice milling
831	GAURAV PLASTIC PACKAGING INDUSTRIES Email: SACHDEVASHIVAM.RDR@GMAIL.COM	U S Nagar	NEAR UDAY SEEDS, KULWANT NAGAR, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Manufacture of semi-finished of plastic prouducts (plastic plates, sheets,blocks,film,foil,strip etc.)
832	Aaditya Atta Chakki Email: k.harendra1968@gmail.com	U S Nagar	Udham Singh Nagar	MICRO	Flour milling
833	MS.RITIK GOLD BESEN UDYOG Email: gst244713@gmail.com	U S Nagar	{"show_ukfcl": "on Udham Singh Nagar	MICRO	Manufacture of vitaminised high protein flour, frying of dal and other cereals
834	Nishant Printpack Solution Pvt. Ltd Email: hrd.nishant@gmail.com	U S Nagar	KHASRA NO 568, SHIMLA PISTAUR, KICHHA ROAD, LALPUR, RU DRAPUR Udham Singh Nagar	SMALL	Manufacture of corrugated paper board containers
835	A K TRADING COMPANY Email: a.p.akhilesh121@gmail.com	U S Nagar	Udham Singh Nagar	MICRO	Packaging activities
836	VATIKA NURSERY Email: pulkitc27@gmail.com	U S Nagar	Udham Singh Nagar	MICRO	Growing of plants for planting
837	RACHNA ORGANIC FOODS Email: khushboobisht1810hjs@gmail.com	U S Nagar	PLOT NO B 210, ESIP SITARGANJ USNAGR Udham Singh Nagar	MICRO	Bee-keeping and production of honey and beeswax
838	M/S G.S. PRINTERS & PACKERS Email: saurabh.kashipur58@gmail.com	U S Nagar	Udham Singh Nagar	MICRO	Manufacture of corrugated paper board containers
839	ASHA ATTA CHAKKI Email: ashardr3@gmail.com	U S Nagar	RAJA COLONY, WARD NO 2, TRANSIT CAMP, RU DRAPUR Udham Singh Nagar	MICRO	Flour milling
840	S.K. PACKING INDUSTRIES Email: skpacking@hotmail.com	U S Nagar	Udham Singh Nagar	SMALL	Manufacture of corrugated paper board containers
841	DEVIRISHI PAPERS PVT LTD Email: singh.ksp2019@gmail.com	U S Nagar	Udham Singh Nagar	MICRO	Manufacture of paper and paper rolls not further processed
842	Mother Proteins & Fresh Foods Email: keshavsingla48@yahoo.com	U S Nagar	Udham Singh Nagar	MICRO	Warehousing of refrigerated (cold storage)
843	M/S ECO GREEN INDUSTRIES Email: ecogreen_ind@yahoo.com	U S Nagar	Udham Singh Nagar	SMALL	Manufacture of packing paper
844	RAJNI FOOD PRODUCT Email: satishmiddha529@gmail.com	U S Nagar	{"show_ukfcl": "on Udham Singh Nagar	MICRO	Grinding and processing of spices
845	AMAL FLOUR MILL Email: amal.vishwas@rediffmail.com	U S Nagar	VILAGE AND POST KALINAGAR, BLOCK GADRARPUR TEHSIL RU DRAPUR Udham Singh Nagar	MICRO	Flour milling
846	MURLIWALA AGROTECH Email: convey2vivek2007@gmail.com	U S Nagar	Udham Singh Nagar	SMALL	Manufacture of prepared meals and dishes
847	TIME TECHNOPLAST LTD. UNIT II Email: munesh.verma@timetechoplast.com	U S Nagar	PLOT No. 56 & 64 , SECTOR- 4, SIDCUL PANTNAGAR, U.S.NAGAR Udham Singh Nagar	SMALL	Manufacture of semi-finished of plastic prouducts (plastic plates, sheets,blocks,film,foil,strip etc.)
848	SHRI SHYAM JI PACKAGING Email: shrishyamjipackaging@rediffmail.com	U S Nagar	Udham Singh Nagar	SMALL	Manufacture of corrugated paper board containers
849	MAHALUXMI SEEDS Email: info@mahaluxmi.in	U S Nagar	Udham Singh Nagar	SMALL	Rice milling
850	NSVS AGRO FOODS PRIVTE LIMITED Email: siddhartha3992@gmail.com	U S Nagar	PLOT NO. 9\1 HIMALAYAN FOOD PARK MAHUAKHERA GANJ \r\nKASHIPUR UTTARAKHAND Udham Singh Nagar	SMALL	Dal (pulses) milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
851	SOMPAL ATTA CHAKKI Email: sompalbari01@gmail.com	U S Nagar	VILLAGE AND POST BARI, KICHHA UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Flour milling
852	FROZO FUN FOODS Email: operation@frozofunfoods.com	U S Nagar	Udham Singh Nagar	SMALL	Preservation of fruit and vegetables n.e.c.
853	Thunder Cold Drink Email: caaardr11@gmail.com	U S Nagar	Udham Singh Nagar	SMALL	Manufacture of other non-alcoholic beverages n.e.c.
854	Sri Swastik Rice & Oil Mill Email: srmkichha@gmail.com	U S Nagar	Rudrapur Road, Kichha, Udham Singh Nagar, Uttarakhand Udham Singh Nagar	MICRO	Rice milling
855	Raja Ata Chakki Email: nizakatm420@gmail.com	U S Nagar		MICRO	Flour milling (offering a highly efficient Mini Atta Chakki Plant)
856	Raj Rice Mill Email: caaardr13@gmail.com	U S Nagar	Maseet, Kelakhara, Gadarpur, Udham Singh Nagar, Uttarakhand 263152 Udham Singh Nagar	SMALL	Rice milling
857	AADARSH FLOUR MILL Email: Shahziadv6767@gmail.com	U S Nagar	Khasra No.87, Patti Tirmal, Jaspur, Udham Singh Nagar,Uttarakhand, 244712 Udham Singh Nagar	MICRO	Flour milling
858	S K FOOD PRODUCTS Email: skfp2019@gmail.com	U S Nagar	BISTI ROAD, VILLAGE- RAMPURA, SITARGANJ, UDHAM SINGH NAGAR, UTTARAKHAND- 262405 Udham Singh Nagar	SMALL	Rice milling
859	SHRI SIDDHI VINAYAK RICE MILL Email: MAHESHGOUR47@GMAIL.COM	U S Nagar	VILLAGE AHEMAD NAGAR , GANGOOWALA, JASPUR, UDHAM SINGH NAGAR, UTTARAKHAND, 244712 Udham Singh Nagar	MICRO	Rice milling
860	Maa Atta Chakki Email: sonusa888999@gmail.com	U S Nagar	Ramjiwanpur no.3, Gadarpur, Udham Singh Nagar Udham Singh Nagar	MICRO	Flour milling
861	Sai enterprises Email: saibaba263153@gmail.com	U S Nagar	Anand Vihar Colony, Rudrapur, Udham Singh Nagar Udham Singh Nagar	MICRO	Flour milling
862	BALAJI ATTA CHAKKI Email: Seema30061963@gmail.com	U S Nagar	VILLAGE BHURARANI, NEAR LAXMI VILLA, RUDRAPUR Udham Singh Nagar	MICRO	Flour milling
863	CHARANJEET FOOD PRODUCTS Email: vikassudha7777@gmail.com	U S Nagar	GADARPUR, SARDARNAGAR CHAKKI, Udham Singh\`nNagar, Uttarakhand, 263152 Udham Singh Nagar	MICRO	Grinding and processing of spices
864	RECKITT BENCKISER (INDIA) PRIVATE LIMITED Email: v.k.singh@rb.com	U S Nagar	B-170, ESIP, SITARGANJ U.S.NAGAR Udham Singh Nagar	SMALL	Warehousing non-refrigerated
865	RUDRA TRADERS Email: sonubhakuni123@gmail.com	U S Nagar	00, ANAJ MANDI, GADARPUR Udham Singh Nagar	MICRO	Grinding and processing of spices
866	M/s Rama Foods Email: kumarmohan30050@gmail.com	U S Nagar	Bisti Road, Sitarganj, Udham Singh Nagar, Uttarakhand- 262405 Udham Singh Nagar	SMALL	Rice milling
867	A D S AGRO FOODS Email: adsagrofoods@gmail.com	U S Nagar	VILLAGE - NARKHERA , BERIA ROAD, BAZPUR , UDHAM SINGH NAGAR, UTTARAKHAND-262401	SMALL	Rice milling
868	VISHNU RICE MILL Email: dipakagarwal84@gmail.com	U S Nagar	RUDRAPUR ROAD, KICHHA, UDHAM SINGH NAGAR Udham Singh Nagar	SMALL	Rice milling
869	deepa chakki Email: gst262401@gmail.com	U S Nagar	s/o nek singh,raninagal foiji caloni,bazpur,udham singh nagar Udham Singh Nagar	MICRO	Flour milling
870	Ashirwad Chakki Email: nathdeena345@gmail.com	U S Nagar	Shop No 5-1 Gumolhar Colony Bhurarani Rudrapur District U S Nagar Udham Singh Nagar	MICRO	Flour milling
871	YADAV FOODS LIMITED Email: yadavfoods@yadavgroup.in	U S Nagar	KICHHA, UDHAM SINGH NAGAR, UTTARAKHAND - 263148 Udham Singh Nagar	SMALL	Flour milling
872	JAY HARA KRISHNA MILK FOODS Email: vishalbiswas0907@gmail.com	U S Nagar	B- 201 ELDECO SIDCUL INDUSTRIAL PARK SITARGANJ Udham Singh Nagar	SMALL	Agricultural activities on a fee or contract basis
873	Aman Chakki Email: op82330@gmail.com	U S Nagar	Vill Po Danpur District U S Nagar Udham Singh Nagar	MICRO	Flour milling
874	BANSAL DAL MILL Email: sajal@rudrapursolvents.com	U S Nagar	KHASRA NO. 545\`nKICCHA ROAD , RUDRAPUR Udham Singh Nagar	MICRO	Rice milling
875	V R INDUSTRIES Email: vrind2019@gmail.com	U S Nagar	vill karanpur jaspur u s nagar Udham Singh Nagar	SMALL	Rice milling
876	Om Sai Nath Email: kn.ravi1508@gmail.com	U S Nagar	ward 3 Krishna Bihar colony, kichcha 263148 Udham Singh Nagar	MICRO	Flour milling
877	SIYARAM RICE MILL Email: vikkykumar1978@gmail.com	U S Nagar		MICRO	Rice milling
878	Bankey Bihari Food Product Email: agvijay.tpp@gmail.com	U S Nagar	C/o K.R. Industries Compound, Village Bhoorarani, Distt Udham Singh Nagar, Uttarakhand Udham Singh Nagar	MICRO	Rice milling
879	Shri Jagdamba Industries Email: anil.nldk@gmail.com	U S Nagar	Bareilly Road, Kichha - 263148 \`nUdham Singh Nagar (Uttarakhand) Udham Singh Nagar	MICRO	Rice milling
880	Mahindra Foods Email: sahilrora19@gmail.com	U S Nagar	227/1 bypass road Kichha U S Nagar Uttarakhand Udham Singh Nagar	MICRO	Rice milling
881	Star Engireering Works Email: bhaveshdhami0082@gmail.com	U S Nagar	Drem Land Colony, Village- Chatarpur, Rudrapur, 263153 Udham Singh Nagar, Uttarakhand Udham Singh Nagar	MICRO	Manufacture of machine tools for turning, drilling, milling, shaping, planning, boring, grinding etc.
882	GAJRAJ AGRO FOODS Email: LAXMANMITTAL4@GMAIL.COM	U S Nagar	VILLAGE THARU TISSOR Udham Singh Nagar	MICRO	Flour milling
883	OM INDUSTRIES Email: anuragdelhi@rediffmail.com	U S Nagar	Village Sarverkhera, Jaspur Road, Kashipur Udham Singh Nagar	SMALL	Rice milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
884	N.K.FOODS PRODUCT Email: nkfoodsproduct@gmail.com	U S Nagar	WARD NO.7,THANA GALI, GADARPUR, UDHAM SINGH NAGAR, UTTARAKHAND	MICRO	Flour milling
885	KGN ATTA CHAKKI Email: sartajhusainsartajhusain024@gmail.com	U S Nagar	WARD NO-09, ISLAMNAGAR, GADARPUR Udham Singh Nagar	MICRO	Flour milling
886	SHRI BALAJI INDUSTRIES Email: rajeshvbansal@gmail.com	U S Nagar	KHET NO 568\2 KICCHA ROAD , BHADAIPURA , RUDRAPUR (UTTARAKHAND) Udham Singh Nagar	SMALL	Rice milling
887	HARISHANKAR AATA CHAKKI Email: sureshksp1144@rediffmail.com	U S Nagar	KUAKHERA OM VIHAR COLONY KASHIPUR UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Growing of wheat
888	SHEEL CHAND FLOUR MILLS PVT LTD Email: sagargl@gmail.com	U S Nagar	KHET NO 710 MIN , MALSA ROAD , SHIMLA PISTAOUR , RUDRAPUR , U.S.NAGAR Udham Singh Nagar	SMALL	Flour milling
889	Harman Food Product Email: hfood7545@gmail.com	U S Nagar	Vill sabepur Post Nakatpura Sitargang 262405 Udham Singh Nagar	MICRO	Grain milling other than wheat, rice and dal
890	RAMAN AATA CHAKKI Email: gudiarani0987@gmail.com	U S Nagar	AKANSHA MARBAL, MORADABAD ROAD KASHIPUR Udham Singh Nagar	MICRO	Flour milling
891	ANNAPURNA RICE MILL Email: shreeannapurna515@gmail.com	U S Nagar	KHASRA NO 184\2 BHURARANI , KASHIPUR ROAD, RUDRAPUR Udham Singh Nagar	MICRO	Rice milling
892	EHSAAS FROZEN FOODS PRIVATE LIMITED Email: Mohitsingh9927976108@gmail.com	U S Nagar	GRAM BINDUKHERA RUDARPUR UDHAM SINGH NAGAR UTTARAKHAND Udham Singh Nagar	MICRO	Preservation of fruit and vegetables n.e.c.
893	RADHA SWAMI ATTA CHAKKI Email: lovelight135@gmail.com	U S Nagar	VILLAGE ETOWA NANAKMATTA Udham Singh Nagar	MICRO	Flour milling
894	HARENDAR KUMAR ATTA CHAKKI Email: kumarharendar732@gmail.com	U S Nagar	WARD NO 6, ATARIYA ROAD, JAGATPURA, RUDRAPUR Udham Singh Nagar	MICRO	Flour milling
895	T G ROLLER FLOUR MILLS PVT LTD Email: TGROLLERFLOURMILL@GMAIL.COM	U S Nagar	KHASRA NO 25\2\1 MIN , VILLAGE KHALI MAHAUT , MELAGHAT ROAD, KHATIMA (UDHAM SINGH NAGAR) Udham Singh Nagar	MICRO	Flour milling
896	B. P. Frozen Foods Email: bpfrozenfoods@gmail.com	U S Nagar	Village Dhabora Mustakam, Parmanandpur, Bazpur Road, Kashipur Udham Singh Nagar	MEDIUM	Preservation of fruit and vegetables n.e.c.
897	GANESH TARAI SEEDS Email: GANESHTARAISEEDS@GMAIL.COM	U S Nagar	VILLAGE PINDARI BIJITI ROAD SITARGANJ, UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Seed processing for propagation
898	Powercon Industries Limited Email: accounts@indiansfood.in	U S Nagar	F-11, Rajat Industrial Park, Village Vikrampur, Bazpur, District Udham Singh Nagar, Uttarakhand-262401 Udham Singh Nagar	MEDIUM	Preservation of fruit and vegetables n.e.c.
899	ESS KEY AGRO OIL Email: GPC.RDR28@GMAIL.COM	U S Nagar	WARD NO 9 SITARGANJ Udham Singh Nagar	MICRO	Manufacture of vegetable oils and fats excluding corn oil
900	F S TRADERS Email: sarfarazksp@gmail.com	U S Nagar	KHASRA NO 76\5 MIN, VILL. KACHNAL GUSAI, KASHIPUR, U.S. NAGAR, UTTARAKHAND 244713 Udham Singh Nagar	MICRO	Manufacture of vegetable oils and fats excluding corn oil
901	M/s Rajkul Seeds Email: rajkulseeds@gmail.com	U S Nagar	M/s Rajkul Seeds, Pilibhit Road, Pipaliyanathu, Malpuri,\r\nSitarganj, Udham Singh Nagar, Uttarakhand - 262405 Udham Singh Nagar	SMALL	Seed processing for propagation
902	BABU HUSSAIN MINI AATA CHAAKI Email: babuhussainjaspur2020@gmail.com	U S Nagar	VILL.NARAYANPUR,DHYANPUR JASPUR UDHAM SINGH NAGAR UTTARAKHAND Udham Singh Nagar	MICRO	Grain milling other than wheat, rice and dal
903	MINI PLANT ATTA CHAKKI Email: pansingh.rana75@gmail.com	U S Nagar	VILL. PINDARI POST BIJITIPATTIA UDHAM SINGH NAGAR UTTARAKHAND Udham Singh Nagar	MICRO	Flour milling
904	J.S. PACKAGING Email: harpreetkaur405js@gmail.com	U S Nagar	KHASRA NO 405, VILLAGE KUNDA , JASPUR ROAD , KASHIPUR, UDHAM SINGH NAGAR , UTTARAKHAND 244713 Udham Singh Nagar	SMALL	Manufacture of corrugated paper board containers
905	DEV BHUMI AGRO Email: ishan.bajaj11@gmail.com	U S Nagar	VILLAGE BHOORA GAURI, KANAKPUR, TEHSIL KICHHA, UDHAM SINGH NAGAR Udham Singh Nagar	SMALL	Rice milling
906	R.S. AGRO OILS Email: tarunarora2710@gmail.com	U S Nagar	KHATA NO. 87, KHASRA NO. 39 MIN, VILL. KOTHA, TEHSIL RUDRAPUR, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Manufacture of vegetable oils and fats excluding corn oil
907	Eco Packaging Industries Email: ecopackagingind@gmail.com	U S Nagar	M/s Eco Packaging Industries, \r\nKhasra No. \u2013 737\1, Village- Malpuri, Pilibhit Road, Sitarganj, Udham Singh Nagar, Uttarakhand - 262405 Udham Singh Nagar	SMALL	Manufacture of corrugated paper board containers
908	Mahadev Aata Chakki Email: mmayank2562@gmail.com	U S Nagar	Vijay Nagar Nai Basti Kashipur 244713 Udham Singh Nagar	MICRO	Flour milling
909	J S Industries Email: syedj588@gmail.com	U S Nagar	Sonera Near new mandi bareilly Byepass Road Kichha 263148 Udham Singh Nagar	MICRO	Manufacture of semi-finished of plastic prouducts (plastic plates, sheets,blocks,film,foil,strip etc.)

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
910	JPK FOODS Email: jayapant46@gmail.com	U S Nagar	KHASRA NO 307, VILLAGE- BARKHEDAPANDEY, KANAKPUR ROAD KASHIPUR 244713 US NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Other semi-processed, processed or instant foods n.e.c.
911	FAR N BEYOND SUSTAINABLE LLP Email: js@farnbeyondsustainable.com	U S Nagar	S2 PLOT NO 10 IIE ESCORT FARM KASHIPUR, UDHAMSINGH NAGAR Udham Singh Nagar	MEDIUM	Radiation preservation of fruit and vegetables
912	ANAND PADDY PRODUCTS Email: ANANDPADDYPRODUCTS@GMAIL.COM	U S Nagar	KHASRA NO 238,239,240 , KICHHA ROAD , RUDRAPUR , UDHAM SINGH NAGAR , 263153 Udham Singh Nagar	MICRO	Rice milling
913	SHRI GURU RAM DAS AGRO SEEDS Email: GPC.RDR145@GMAIL.COM	U S Nagar	VILLAGE KHEMPUR NANAKMATTA Udham Singh Nagar	SMALL	Rice milling
914	H P INDUSTRIES Email: AQUARIAN_VIVEK@YAHOO.IN	U S Nagar	KHASRA NO 544\1 , VILLAGE BANSOONI , KHATIMA, UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Rice milling
915	JAY ENTERPRISES Email: jayenterprises2015@gmail.com	U S Nagar	KIRATPUR PO DANPUR RUDRAPUR Udham Singh Nagar	MICRO	Agricultural activities on a fee or contract basis
916	M\vs SFC Foods Pvt Ltd (Unit-II) Email: sfcfoods@yahoo.com	U S Nagar	Mooja Bankhandi Nath Nagar, Near Almora Pahari sunar, Fulsunga, Rudrapur USNagar Udham Singh Nagar	MICRO	Packaging activities
917	HIMALAYAN RICE MILL Email: himalayanrice20@gmail.com	U S Nagar	KHASRA NO.98,VILLAGE KUDIYONWALA KASHPUR Udham Singh Nagar	SMALL	Rice milling
918	NANAK FOODS Email: jatinder6152@gmail.com	U S Nagar	VILLAGE- BANNAKHERA, BAZPUR, UDHAM SINGH NAGAR, UTTARAKHAND -262401	SMALL	Rice milling
919	M\VS NEW DIAMOND FLOUR MILL Email: intezaarhussain38@gmail.com	U S Nagar	524, VILLAGE BARAKHERA, GADARPUR. UDHAM SINGH NAGAR, 263152 Udham Singh Nagar	MICRO	Growing of wheat
920	M\VS DHANNARAM'S FFOODS Email: tarunjuneja212@gmail.com	U S Nagar	PLOT NO A 31 GATA NO 217 MIN , BHURARANI , UDHAM SINGH NAGAR , UTTARAKHAND Udham Singh Nagar	MICRO	Growing of wheat
921	Barman Chakki Email: subratbarman111@gmail.com	U S Nagar	Thakur Nagar, Tranjit camp, Rudrapur, udham singh Nagar, uttarakhand Udham Singh Nagar	MICRO	Flour milling
922	UTKARSH FOOD PRODUCTS Email: homefreshmasale@gmail.com	U S Nagar	GOVINDPUR,GULARBHOJ,U.S. NAGAR, UTTARAKHAND - 262401 Udham Singh Nagar	SMALL	Grinding and processing of spices
923	M\VS GUPTA ATA CHAKKI Email: cpalgupta02020@gmail.com	U S Nagar	ALL TYPES OF FLOUR AND PULSES MILLING Udham Singh Nagar	MICRO	Flour milling
924	Shri Shyam Ji Flour Mill Email: yash.ran1992@gmail.com	U S Nagar	M\vs Shri Shyam Ji Flour Mill, FCI Godown Road, Kichha, U.S. Nagar, Uttarakhand - 263148 Udham Singh Nagar	SMALL	Flour milling
925	PRAKASH AATA CHAKKI Email: chakki0011@gmail.com	U S Nagar	atta chakki Udham Singh Nagar	MICRO	Flour milling
926	R S YADAV & SONS HUF Email: prashant.gupta30@yahoo.com	U S Nagar	WARD NO.03, RUDRAPUR ROAD, KICHHA,KICHHA, Dist: UDHAM SINGH NAGAR, State: UTTARAKHAND, Pin: 263148 Udham Singh Nagar	MICRO	Manufacture of macaroni, noodles, couscous and similar farinaceous products
927	Baba Thakur Ji Seeds Email: bt7727538@gmail.com	U S Nagar	Vill Mahtosh Rudrapur road Gadarpur U S Nagar 263152 Udham Singh Nagar	SMALL	Flour milling
928	Shree salasar balaji udyog Email: shreesalasarbalajjudyog@gmail.com	U S Nagar	Khasra no 54\3\1 min , bhurarani , kashipur road , rudrapur , udham singh nagar , uttrakhand , 263153 Udham Singh Nagar	MICRO	Rice milling
929	M\VS BHAVYA ATTA CHAKKI Email: vivekkumaruk.143@gmail.com	U S Nagar	Village- Gangapur Loharri, Post - Narayanpur, Tehsil- Rudrapur, Udham Singh Nagar, Uttarakhand- 263148 Udham Singh Nagar	MICRO	Flour milling
930	ASLAM ATTA CHAKKI Email: aslamgee28@gmail.com	U S Nagar	KHASRA NO. 353, 360, GRAM- LUCKNOW, GADARPUR, UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Flour milling
931	Anjani rice mill Email: anjanirice@gmail.com	U S Nagar	Khasra no 371 min , industrial area bhadaipura , rudrapur , udham singh nagar Udham Singh Nagar	MICRO	Rice milling
932	GUPTA JI ATTA CHHAKI Email: shivkgupta02020@gmail.com	U S Nagar		MICRO	Flour milling
933	KHARAYAT INDUSTRIES Email: Kharayatindustries01@gmail.com	U S Nagar	VILL KANJABAGH, UMRUKHURD, KHATIMA, UDHAM SINGH NAGAR, UTTARAKHAND 262308	SMALL	Rice milling
934	Amar Jyoti rice flour & oil mills Email: hemantajrm@gmail.com	U S Nagar	Plot no 1 and 2 , industrial area , kichha road , rudrapur , udham singh nagar , 263153 Udham Singh Nagar	MICRO	Growing of wheat
935	M\vs S I Rice Mill Email: siricemillnadehi01@gmail.com	U S Nagar	KHASRA NO.232, VILL.NADEHI JASPUR, JASPUR, Udham\r\nSingh Nagar, Uttarakhand, 244712 Udham Singh Nagar	MICRO	Rice milling
936	M\VS JNV TOOLS AND COMPONENTS Email: jnv.tools@gmail.com	U S Nagar	Khet no 50\1 min , village Matkota , rudrapur , udham singh nagar , uttarakhand , 263153 Udham Singh Nagar	MICRO	Manufacture of machine tools for turning, drilling, milling, shaping, planning, boring, grinding etc.
937	JINDAL paddy products Pvt Ltd Email: jindalpaddy@gmail.com	U S Nagar	JINDAL paddy products Pvt Ltd , Kashipur road , rudrapur , udham singh nagar , uttarakhand , 263153 Udham Singh Nagar	MICRO	Organic farming of basmati rice

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
938	NARAIN RICE MILL Email: mohitag398@gmail.com	U S Nagar	KHATIMA ROAD SITARGANJ U.S. NAGAR UTTARAKHAND-262405 Udham Singh Nagar	MICRO	Rice milling
939	Dwarika roller flour mill pvt ltd Email: dwarikaflour@yahoo.com	U S Nagar	Shimla pistaur , kuchha road , rudrapur , udham singh nagar , uttarakhand , 263153 Udham Singh Nagar	MICRO	Growing of wheat
940	JAI VARDHMAN INDUSTRIES Email: capranavgoel14@gmail.com	U S Nagar	PLOT NO. 310 & 311, VILL. BINDUKHERA, RUDRAPUR, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Rice milling
941	Priyanshu Paneru Auto Cool Atta Chakki Email: mpaneru1987@gmail.com	U S Nagar	JAI NAGAR NO 1, DURGA STATE COLONY, RUDRAPUR UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Flour milling
942	JANTA INDUSTRIES Email: jantaindustries16@gmail.com	U S Nagar	VILL - BANUSI, SITARGANJ ROAD, KHATIMA, U.S.NAGAR, UTTARAKHAND Udham Singh Nagar	SMALL	Rice milling
943	Sanjeevani Food Products Email: dmdevesh4@gmail.com	U S Nagar	Village - Pandari, Kichha Road Sitarganj, Udham Singh Nagar, Uttarakhand, (Pin-262405) Udham Singh Nagar	MICRO	Flour milling
944	SHYAMPURIA MILLING INDUSTRIES Email: capranavgoel15@gmail.com	U S Nagar	KHASRA NO. 7½, VILL. RAMPURA, KASHIPUR ROAD, RUDRAPUR, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Rice milling
945	M/S SHAMA ENTERPRISES Email: hussainasimhussain3@gmail.com	U S Nagar	ViLL.BAITWALA P.O. KUNDA,KASHIPUR, JASPUR, Udham Singh Nagar, Uttarakhand, 244713	MICRO	Rice milling
946	M/S Shree Durga Industriew Email: vicky.18014@gmail.com	U S Nagar	Shree durga industries Khata number 651 , kichha , udham singh nagar , 263153 Udham Singh Nagar	MICRO	Rice milling
947	ANHAD INDUTRIES Email: anhadgroup@gmail.com	U S Nagar	FACTORY AT VILL. PIPLIYA, PIPLIYA, GADARPUR, Udham Singh Nagar, Uttarakhand, 263152 Udham Singh Nagar	MEDIUM	Manufacture of corrugated paper board containers
948	MOURYA ATTA CHAKKI Email: durgeshdevi705@gmail.com	U S Nagar	WARD NO 14, POLICE CHOWKI KE PICHE SUBHASH NAGAR, RUDRAPUR Udham Singh Nagar	MICRO	Flour milling
949	GARG FEED MILL Email: gargharsh175@gmail.com	U S Nagar	KHASRA NO. 361/1, VILL. UMRAU KHURD, KANJABAG ROAD, KHATIMA, UDHAM SINGH NAGAR	MICRO	Rice milling
950	R K Agro industries Email: varun.century@gmail.com	U S Nagar		MICRO	Rice milling
951	SWASTIC INDUSTRIES Email: mittalnaveen806@gmail.com	U S Nagar	KHASRA NO. 184 MIN, VILL. MAHOLIYA, KHATIMA, UDHAM SINGH NAGAR, UTTARAKHAND	MICRO	Rice milling
952	KAMDHENU RICE MILL Email: rajkbindal@gmail.com	U S Nagar	KHASRA NO. 339/1/3, VILL. RUDRAPUR, KICHHA BYEPASS ROAD, RUDRAPUR, UDHAM SINGH NAGAR, UTTARAKHAND	MICRO	Rice milling
953	NARSINGH INDUSTRIES Email: lalit.mittal.1977@gmail.com	U S Nagar	KHASRA NO. 56½, VILL. VANUSI, KHATIMA, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Rice milling
954	SHRI KHATU NARESH FLOUR MILL-UNIT II Email: anshikaenterprisesuk@gmail.com	U S Nagar	KHASRA NO. 83½, SIROULI KHURD KICHHA, SITARGANJ ROAD PULBHATTA, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	SMALL	Rice milling
955	SHIV NARAYAN MAHAVEER PRASAD Email: Snmprdr@gmail.com	U S Nagar	Plot number 11/1 industrial area bhadaipur, rudrapur, udham singh nagar, uttarakhand , 263153 Udham Singh Nagar	MICRO	Rice milling
956	Annapurna Agro Products Email: onlinevicky@yahoo.com	U S Nagar	191 , Sitarganj Road , bhoor Maholiya , khatima , udham singh nagar , uttarakhand , 262308 Udham Singh Nagar	MICRO	Rice milling
957	S R ROLLER FLOUR MILLS PRIVATE LIMITED Email: punitsrrfm@gmail.com	U S Nagar	KHASRA NO. 167, PILIBHIT ROAD, MAJHOLA, KHATIMA, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Rice milling
958	SHREE MAHAVEER PADDY PRODUCTS Email: ankurmittal4u@gmail.com	U S Nagar	KHASRA NO. 397 & 398, VILL. RUDRAPUR, INDUSTRIAL AREA, KICHHA BYEPASS ROAD, RUDRAPUR, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Rice milling
959	GOYAL GRAIN TRADERS Email: ashishgoel1981@yahoo.com	U S Nagar	KHATA NO. 277 ALIGANJ ROAD, VILL. FASIAPURA, KASHIPUR, UDHAM SINGH NAGAR, UTTARAKHAND	MICRO	Rice milling
960	DB INDUSTRIES Email: goyal.db@gmail.com	U S Nagar	KHASRA NO. 152, MORADABAD ROAD, VILL. SERVER KHERA, KASHIPUR, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Rice milling
961	BAJRANG AGRO PRODUCTS Email: pnkj.mttl@gmail.com	U S Nagar	KHASRA NO. 956B MIN, VILL. UMRU KHURD, KANJABAGH ROAD, KHATIMA, UDHAM SINGH NAGAR, UTTARAKHAND Udham Singh Nagar	MICRO	Rice milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
962	M/S VASUDEV FOODS Email: vasudevfoods44@gmail.com	U S Nagar	Khasra No. u2013 68MIN, Village- Bhanga, Kichha - Sitarganj Road, Pipaliya Mod, Opposite Indian Oil Petrol Pump, Kichha, Udham Singh Nagar, Uttarakhand - 263148.	SMALL	Rice milling
963	THE MODERN FLOUR MILLS Email: mittalanmol@yahoo.com	U S Nagar	PLOT R1 HIMALAYAN FOOD PARK, MAHUAKHERA GANJ, KASHIPUR Udham Singh Nagar	SMALL	Flour milling
964	SHAMA RICE MILL Email: shamaricemillamyawal@gmail.com	U S Nagar	VILL.AMYAWALA, JASPUR, Udham Singh Nagar, Uttarakhand, 244712	MICRO	Rice milling
965	KADIR AATA CHAKKI Email: kadeermalik632@gmail.com	U S Nagar		MICRO	Grain milling other than wheat, rice and dal
966	akeel ata chakki Email: mohdamir263148@gmail.com	U S Nagar	SIRAOULI KALAN WARD NO 02 U S NAGAR UTTARAKHAND 263148	MICRO	Flour milling
967	M.H PLASTIC INDUSTRIES Email: mhplasticksp@gmail.com	U S Nagar	BASAI IISLAM NAGAR HARIAWALA CHOWK KASHIPUR Udham Singh Nagar	SMALL	Manufacture of semi-finished of plastic proudcts (plastic plates, sheets,blocks,film,foil,strip etc.)
968	MAURYA ATTA CHAKKI Email: SHREEPURAN992789@GMAIL.COM	U S Nagar		MICRO	Flour milling
969	KISSAN ATTA CHAKKI Email: SINGHARVINDRANA@GMAIL.COM	U S Nagar	VILLAGE- TURKA TISOOR, SITARGANJ Udham Singh Nagar	MICRO	Flour milling
970	MAA PADMAVATI FOOD INDUSTRIES Email: godhavickey2011@gmail.com	U S Nagar	KHASRA NO 398\1 MIN, RUDRAPUR DEHAT, RUDRAPUR,\r\nUdham Singh Nagar, Uttarakhand, 263153	MICRO	Manufacture of macaroni, noodles, couscous and similar farinaceous products
971	LOKESH ATTA CHAKKI Email: lb8118338@gmail.com	U S Nagar	VILLAGE LAMBAKHERA, POST KHANPUR,RUDRAPUR, UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Flour milling
972	JAI SHRI RAM ATTA CHAKKI Email: tej219548@gmail.com	U S Nagar	WARD NO 3, SANJAY NAGAR, KHEDA, RUDARPUR UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Flour milling
973	Ganpati mini plant Email: vrij143@Gmail.com	U S Nagar		MICRO	Flour milling
974	Shraddha Annapurna Udyog Email: hariomsingh53@gmail.com	U S Nagar	Plot No. 160, Anand Vihar, Near, Teen Pani Dem, fulsunga, Rudrapur, Udham singh nagar, uttarakhand Udham Singh Nagar	MICRO	Flour milling
975	Mangla Traders Email: mangla.satish@gmail.com	U S Nagar	Rudrapur Road, Kichha Udham Singh Nagar	MICRO	Rice milling
976	SIDDHI VINAYAK FOOD PRODUCTS Email: siddhi.ukd@gmail.com	U S Nagar	SHOP NO. 03 DEV HOMES KICHHA ROAD BAGWADA RUDRAPUR UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Grinding and processing of spices
977	SHANTI PACKAGING Email: sppmajhola@gmail.com	U S Nagar	VILL, MAJHOLA, KHATIMA Udham Singh Nagar	SMALL	Rice milling
978	PS&SONS GRAINS Email: pskhinda.0@gmail.com	U S Nagar	NEAR NEW LIGHT SCHOOL, KHATIMA ROAD, NANAKMATTA, Udham Singh Nagar, Uttarakhand, 262311.	SMALL	Rice milling
979	SHIVA RICE MILL-2 Email: maddy.singh78@gmail.com	U S Nagar	VILL KISHANPUR KICHHA BY PASS ROAD KICHHHA (U.S.NAGAR) Udham Singh Nagar	MICRO	Rice milling
980	R K RICE MILL Email: rkricemill96@gmail.com	U S Nagar	Rudrapur road, Kichha Udham Singh Nagar	SMALL	Rice milling
981	CROP STAR SEEDS Email: sanjaykhera21@gmail.com	U S Nagar	Village: Daunkpuri, Khasra No. 286G, 287KH Kashipur Road, Gadrapur, Udham Singh Nagar, Uttarakhand - 263152	SMALL	Seed processing for propagation
982	Dharam Pal Aata Chakki Email: deepakkakkay@gmail.com	U S Nagar	HN 477 Shiv Nagar Rudrapur Pin 263153 Udham Singh Nagar	MICRO	Flour milling
983	B. D. Foods Email: ralishkhurana55@gmail.com	U S Nagar	Chak No. 184, Gatta No. 117, Kuriya, Lalpur, Rudrapur, Udham Singh Nagar, Uttarakhand, 263153	SMALL	Rice milling
984	Parmjeet Mini Plant Email: parmjeetkaur262308@gmail.com	U S Nagar	Vil.. Sarasariya, PO Sarasariya, Khatima distt.. udham singh nagar, Udham Singh Nagar	MICRO	Grain milling other than wheat, rice and dal
985	DASMESH OIL KOLHU Email: vikashranaktm1995@gmail.com	U S Nagar	VILL-PRATAPPUR NO 7 POST- PRATAPPUR NO 4 TEH-KHATIMA Udham Singh Nagar	MICRO	Flour milling
986	kanha ji food industries Email: monusaxena2010@gmail.com	U S Nagar	Sethi Market .Vill Mehtosh, Post Prem Nagar , Gadarpur, Udham Singh Nagar	MICRO	Manufacture of flour mixes and prepared blended flour and dough for bread, cakes, biscuits
987	Sahil Traders Email: sahilgagneja1000@gmail.com	U S Nagar	House No 3, Village - Kulwantnagar, Gadarpur, Udham Singh , Uttarakhand 263152 Udham Singh Nagar	MICRO	Flour milling
988	R.D. PADDY PRODUCTS PRIVATE LIMITED Email: rdpaddyproducts@gmail.com	U S Nagar	JASPUR ROAD, KASHIPUR , UDHAM SINGH NAGAR, UTTARAKHAND - 244713	SMALL	Rice milling
989	B P PACKAGINGS PRIVATE LIMITED Email: tikmanianand@gmail.com	U S Nagar	Khasra No.22/1,27/1,28/1,23 ; Village- Sarvarkhera, Jaspur Road, Kashipur, Udham Singh Nagar, Uttarakhand-244713	SMALL	Manufacture of paper and paper rolls not further processed
990	GANESH AATA CHAKKI Email: lakhansardar1994@gmail.com	U S Nagar	WARD NO 4 BAIKUNTHPUR SHAKTIFARM SITARGANJ UDHAM SINGH NAGAR UTTRAKHAND 263151	MICRO	Grain milling other than wheat, rice and dal
991	DHIREN AATA CHAKKI Email: dhirenhaladar96@gmail.com	U S Nagar	19 KRISHANA MANDIR SHAKTIFARM BAIKUNTPUR SITARGANJ, Udham Singh Nagar	MICRO	Grain milling other than wheat, rice and dal

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
992	Anmol Mini Flour Mill Email: naseemahmad236422@gmail.com	U S Nagar	Village Meghawala Patrampur Road Jaspur, Udham Singh Nagar	MICRO	Flour milling
993	MOHD ANEES AATA CHAKKI AND MASALA CHAKKI Email: ma6416826@gmail.com	U S Nagar	PATTI KALIYAN KHERA, Udham Singh Nagar	MICRO	Flour milling
994	R.K. INDUSTRIES Email: rkindustries5999@gmail.com	U S Nagar	VILLAGE BHAGWANTPUR, RAMNAGAR ROAD, Udham Singh Nagar	SMALL	Manufacture of corrugated paper board containers
995	BAJRANG FOOD PRODUCTS Email: bajrangfoodproductsrdr@gmail.com	U S Nagar	VILLAGE SHIMLA PISTORE LALPUR KICHHA ROAD RUDRAPUR Udham Singh Nagar	MICRO	Rice milling
996	Rajeev Flour Mill Email: rajkumarrak42@gmail.com	U S Nagar	Saraswati ward No 01 Vill Barakhara Udham Singh Nagar	MICRO	Flour milling
997	SATYAPAL AATA CHAKKI Email: satyapalkashyap143@gmail.com	U S Nagar		MICRO	Growing of wheat
998	saawariya foods Email: sachinagarwal900@gmail.com	U S Nagar	KHET NO 772 , NEAR BEERSHIBA SCHOOL ,SIROLI KALAN BAREILLY ROAD KICHHA, Udham Singh Nagar	MICRO	Flour milling
999	ROHIT ENTERPRISES Email: rkarora45@gmail.com	U S Nagar	Khasra no. 46/2, Near Vimal Home, Fulsunga BigbaraRoad, Rudrapur Udham Singh Nagar Uttrakhand 263153	MICRO	Flour milling
1000	M/S A H INDUSTRIES Email: ramzanial05@gmail.com	U S Nagar	GRAM SHIMLA PISTOUR, KHASRA NO. 403/1, KICHHA ROAD, RUDRAPUR Udham Singh Nagar	MICRO	Manufacture of semi-finished of plastic proudcts (plastic plates, sheets,blocks,film,foil,strip etc.)
1001	SHRI SHYAM BABA FOODS Email: ashish_ab28@yahoo.com	U S Nagar	BHONA BIRAHA ROAD ,BAZPUR Udham Singh Nagar	SMALL	Rice milling
1002	M/S PAXTON AUTOMOTIVE Email: automotivepaxton@gmail.com	U S Nagar	KHASRA NO. 56, FULSUNGA, TRANSIT CAMP, RUDRAPUR Udham Singh Nagar	SMALL	Manufacture of machine tools for turning, drilling, milling, shaping, planning, boring, grinding etc.
1003	G. R. AGRO SEEDS Email: gragroseeds2020@gmail.com	U S Nagar	KHASRA NO - 3G, 6K, 6KH, VILLAGE - PIPALIYANATHU, PILIBHIT ROAD, SITARGANJ, UDHAM SINGH NAGAR	SMALL	Seed processing for propagation
1004	Shama Agro Foods Email: faheemahmad1561993@gmail.com	U S Nagar	Kharsa no. 205, Vill. Nadehi, Bhootpuri Road, Jaspur Distt. Udham Singh Nagar-244712 Uttarakhand Udham Singh Nagar	MICRO	Rice milling
1005	kalyani seed farms pvt ltd Email: fakhruddinali78651@gmail.com	U S Nagar	Kishanpur jaspur Udham Singh Nagar	SMALL	Growing of wheat
1006	Shri Laxmi Narayan Traders Email: anujfb1983@gmail.com	U S Nagar	Plot No. 02, Kiratpur, Kashipur, Rudrapur, Udham Singh Nagar, Uttarakhand	MICRO	Grinding and processing of spices
1007	GURUNANAK RICE MILLS Email: Mrjagdevsingh77@gmail.com	U S Nagar	KHASRA NO 64/216, VILLAGE AND POST JHANKAT, KHATIMA UDHAM SINGH NAGAR Udham Singh Nagar	SMALL	Rice milling
1008	Swaroop Agriseeds Email: vishwaroop1990@gmail.com	U S Nagar	Luhar gali,Shaktifarm Market, udham Singh Nagar, uttarakhand ,pin- 263151 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1009	M/s Majhola Khatima Sahkari Ganna Vikash Samiti Ltd. Email: khatimasociety@gmail.com	U S Nagar	Mandi, , Khatima, Udham Singh Nagar	MICRO	Growing of sugar cane
1010	Udayveer Contractor Email: ashutoshyadavji15@gmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1011	REDEVELOP BIOTECH INDIA PRIVATE LIMITED Email: pradeep.rud@gmail.com	U S Nagar	C/O RAJ LAKSHMI DHARAM KANTA , KHET NO. 111/3 MATKOTA ROAD BHURARANI, RUDRAPUR 263153 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1012	Bala Ji Industries Email: balajikhatima81@gmail.com	U S Nagar	Village- Mohaliya, Sitarganj Road, Khatima, Udham Singh Nagar, Uttarakhand-262308 Udham Singh Nagar	SMALL	Rice milling
1013	Indo Gulf Pest Control Pvt Ltd Email: billing@igpc.co.in	U S Nagar	Indo Gulf Pest Control Pvt Ltd, Shop no 7 & amp; 8, Fulsunga Village Opp Green Plywood Industries Rudrapur Uttarkhand 263153 Udham Singh Nagar	MICRO	Storage and warehousing n.e.c
1014	NATIONAL TRADING COMPANY Email: ramvilasr748@gmail.com	U S Nagar	MAHTOSH MOD, GADARPUR UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Manufacture of semi-finished of plastic proudcts (plastic plates, sheets,blocks,film,foil,strip etc.)
1015	R K INDUSTRIES Email: veerurastogi1976@gmail.com	U S Nagar	Netaji, Nagar, Ward No.2 Transit Camp, Rudrapur, Udham Singh Nagar, Uttarakhand Udham Singh Nagar	MICRO	Flour milling
1016	DS CANNED FOODS Email: dscfoodskashipur@gmail.com	U S Nagar	KHASRA NO - 87 MI, VILLAGE - GANGAPUR RAQBA, POST 7 TEHSIL - KASHIPUR 244713 US NAGAR, UTTARAKHAND	SMALL	Canning of fruits and vegetables
1017	M/S MAHADEV AATA CHAKKI Email: sidhantagrawal02@gmail.com	U S Nagar	VILLAGE CHANDAYAN, KALINAGAR ROAD, NEAR DURGA DHARAM KANTA, DINESHPUR BLOCK GADARPUR UDHAM SINGH NAGAR	MICRO	Flour milling
1018	HIMGIRI PACKAGING Email: c_bhasin@hotmail.com	U S Nagar	Gata No. 248/1, 248/2 Min, Village Maharajpur, Tehsil Kichha, Udham Singh Nagar	SMALL	Manufacture of corrugated paper board containers
1019	taraigold chemicals private limited Email: contact@taraigold.com	U S Nagar	Kachnal dariyal link road, Kanakpur village, Kashipur, Udham Singh Nagar	SMALL	Manufacture of urea and other organic fertilizers
1020	SHIV GANGA ATTA CHAKKI Email: la1328723@gmail.com	U S Nagar	VILLAGE BANNAKHERA, ITWWA ROAD, BAZPUR Udham Singh Nagar	MICRO	Flour milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1021	Vicky Fertilizers Email: vickyfertilizers@gmail.com	U S Nagar	Ward No 08 Hathikhana Sitarganj 262405 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1022	S S FERTILIZERS Email: vermayank11@gmail.com	U S Nagar	DARIYAL ROAD, NEAR JEET POULTRY FARM, KASHIPUR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1023	Gangwar Aata Chakki Email: anmolchilana123@gmail.com	U S Nagar	Khet no. 237, Rudrapur, Udham Singh Nagar, Uttarakhand - 263153	MICRO	Flour milling
1024	shri balaji enterprises Email: abhishek25mittal@gmail.com	U S Nagar	Near bangali hospital, Rampur road bazpur< Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1025	RAMESH SINGH AATA CHAKKI Email: rameshkhati1324@gmail.com	U S Nagar	VILLAGE JAWAHARNAGAR SHANTIPURI POST OFFICE NAGLA TEHSIL KICHHA Udham Singh Nagar	MICRO	Growing of wheat
1026	nakshi industries Email: musharafali78651@gmail.com	U S Nagar	Vill kishanpur jaspur, Udham Singh Nagar	MICRO	Growing of wheat
1027	Bahuudesiya Barheni Dirghakaar Sahkari Samiti Ltd Email: barhenisamiti@gmail.com	U S Nagar	BARHENI, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1028	NBZ MASALA & KIRANA STORE Email: mohdazharkichha786@gmail.com	U S Nagar	START NEW BUSINESS FOR MASALA AND OIL MANUFACTURING Udham Singh Nagar	MICRO	Grinding and processing of spices
1029	SWASTIK TRADERS Email: ganeshdutt.pant@gmail.com	U S Nagar	Officers Colony, Plot No - 1, Near Thapar Mill, Bhura Rani Road Rudrapur U.S. Nagar - 263153 Uttarakand Udham Singh Nagar	MICRO	Wholesale of cereals & pulses
1030	M/s Rajesh Kumar Rakesh Kumar (Lakhdatar Seeds) Email: lakhdatarseeds@gmail.com	U S Nagar	Sai Seeds, Village- Malpuri, Pilibhit Road, Sitarganj, Uttarakhand Udham Singh Nagar	MICRO	Seed processing for propagation
1031	ASHISH KHAD BHANDAR Email: ashishkhadbhandar1@gmail.com	U S Nagar	V.P.O. - MAHESHPURA DORAHA BAZPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1032	Farm center Email: farm.centre.kashipur@gmail.com	U S Nagar	Ramnagar road, Kashipur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1033	Kissan agro sales Email: mukhtyar.singh09@gmail.com	U S Nagar	Kashipur road, Mahtoshmod, Udham Singh Nagar	MICRO	Growing of wheat
1034	LAXMI SEEDS & PESTICIDES Email: surendra.laxmiseds@gmail.com	U S Nagar	DORAHA BAJPUR UDHAMSINGH NAGAR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1035	LAXMI FERTILIZERS Email: laxmifertilizers.242268@gmail.com	U S Nagar	BERIA DAULAT, BAZPUR, U.S.NAGAR, UTTRAKHAND Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1036	kumaun agro chemicals Email: kumaunagrochemicals@gmail.com	U S Nagar	Near maharana pratap chock, Ram nagar road, Kashipur (u.s.nagar) Uttrakhand-244713, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1037	NATIONAL SSED INDUSTRIES Email: devendrakumarnaroola17@gmail.com	U S Nagar	VILLAGE-MISSARWALA,JASPUR ROAD,KASHIPUR Udham Singh Nagar	MICRO	Growing of wheat
1038	Dinesh Kumar Sarthak Kumar Fertilizers Email: sarthak_sarthakagarwal@rediffmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1039	Arora Enterprises Email: thanx4mailrk@gmail.com	U S Nagar	Khasra no 46/2, near vimal home, Fulsunga bigwara road, Udham Singh Nagar	MICRO	Flour milling
1040	CHANDAN KHAD BHANDAR Email: rkjalhotra2016@gmail.com	U S Nagar	SHIMLA PISTORE , LALPUR , UTTRAKHAND, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1041	Coromandel International Limited Email: mk_bhatnagar@rediffmail.com	U S Nagar	C/o Sawaria Trading Co, Kichha Rudrapur, Udham Singh Nagar	MICRO	Warehousing non-refrigerated
1042	FRIENDS SEEDS PRIVATE LIMITED Email: friendsseedsjaspur@gmail.com	U S Nagar	NAI ABADI, JASPUR, UDHAM SINGH NAGAR, UTTRAKHAND - 244712 Udham Singh Nagar	MICRO	Growing of other cereals
1043	AUDHANIK UTPADAK SAHKARI SAMITI LIMITED Email: sartajali1581@gmail.com	U S Nagar	MAHTOSMOD GADARPUR< Udham Singh Nagar	MICRO	Growing of wheat
1044	sidhu fertilizers Email: parmindersinghsidhu2014@gmail.com	U S Nagar	Anajmadi, Kasipur, Udham Singh Nagar	MICRO	Growing of wheat
1045	Cropnosys India Private Limited Email: registrations@cropnosysindia.com	U S Nagar	Agro Agency Premnagar Mahtos Mod Gadarpur, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1046	K.G.N. FERTILIZER & PESTICIDE Email: irphansaifi1432@gmail.com	U S Nagar	NADEHI ROAD RAJPUR NADEHI CHOWK JASPUR UDHAM SINGH NAGAR UTTRAKHAND 244712	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1047	TROPICAL AGROSYSTEM INDIA PVT. LTD. Email: lucknow@tropicalagro.com	U S Nagar	Subhash colony , Galla mandi road Rudarpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1048	KISSAN FERTILIZERS AGENCY Email: kfabzp@gmail.com	U S Nagar	MAIN ROAD BAZPUR OPP. GURUDWARA Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1049	M/S HARJAS FERTILIZERS & CHEMICALS Email: harnarainsingh104@gmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1050	DEORI BAZPUR Email: puran7853@gmail.com	U S Nagar	BAZPUR DVITIYA KISAN SEVA SAHKARI SAMITI LTD Udham Singh Nagar	MICRO	Growing of other perennial crops, n.e.c.
1051	Adama India Pvt Ltd Email: vishal.singh@adama.com	U S Nagar	C/o. Ankit Enterprises, 127-B, N.H. 74 Kashipur Road, Vill- Danpur (Gopal Ji Dharm Kanta Campus), Rudrapur-263153 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1052	PANTNAGAR KHAD & BEEJ BHANDAR Email: NAINAGARG8100@GMAIL.COM	U S Nagar	Malpuri, Sitarganj, Distt- U.S Nagar, Uttarkhand, 262405 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1053	Kisan Agro Chemiculs and Fertilizers Email: jasbeers15@gmail.com	U S Nagar	Ramrajroad Bazpur US Nagar Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1054	NATIONAL FERTILIZERS LIMITED Email: jitendrakumarmalik@nfl.co.in	U S Nagar	C/o Jai Gopal Murlidhar, Kichha, Udham Singh Nagar	MICRO	Manufacture of urea and other organic fertilizers
1055	Agarwal Enterprises Email: divilu15@gmail.com	U S Nagar	Rudrapur Road, Kichha, Udham Singh Nagar	MICRO	Manufacture of macaroni, noodles, couscous and similar farinaceous products
1056	BHARATIYA BEEJ NIGAM LIMITED Email: beejnigam@gmail.com	U S Nagar	KHASRA NO. 487, VILL. BIGWARA, KICHHA ROAD, RUDRAPUR, UDHAM SINGH NAGAR, UTTRAKHAND	MICRO	Seed processing for propagation

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1057	AGRO BEDI AGENCY Email: ragbbeerbzb@gmail.com	U S Nagar	MAIN ROAD BAZPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1058	Panu Fertilizers Chakkimod .U.K Email: panufertilizers05005@gmail.com	U S Nagar	Chakkimod ,Dineshpur, Udham Singh Nagar	MICRO	Growing of wheat
1059	Shivalik Crop Sciences (P) Limited Email: sunilpant362@gmail.com	U S Nagar	Near Chawala Cinema, Kashipur Road, Rudrapur, Udham Singh Nagar	MICRO	Growing of wheat
1060	Agro agencies Email: agro.agencies@gmail.com	U S Nagar	BIOSTADT INDIA LIMITED, PLOT NO 2013 74/94, OPPOSITE TARAI VIDHYAPEETH, MAHTOSH GADARPUR, DIST - UDHAM SINGH NAGAR, GADARPUR -263152	MICRO	Wholesale of fertilizers and agrochemical products
1061	KISAN TREDERS Email: jagatsinghuk18@gmail.com	U S Nagar	MAHUWAKHEDAGANJ KASHIPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1062	M/s Asim Fertilizers Email: ashimfertilizers20166@gmail.com	U S Nagar	M/s Asim Fertilizers, Kelakhara, Bazpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1063	BAJAJ AGRO INDUSTRIES Email: sssunnybajaj@gmail.com	U S Nagar	VILL- DHANPUR VIJAYPUR GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1064	SUPER AGRO SEEDS Email: superagroseedsjaspur@gmail.com	U S Nagar		MICRO	Growing of other cereals
1065	Dinesh Agro Seeds Email: dineshagroseeds2010@gmail.com	U S Nagar	Vill.Balramnagar Gadarpur, Udham Singh Nagar, Uttrakhand	MICRO	Growing of wheat
1066	GUJARAT STATE FERTILIZERS & CHEMICALS LIMITED Email: bareilly@gsfcltd.com	U S Nagar	C/O JINDAL TARDING COMPANY, KICHHA, RUDARPUR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1067	BHARAT KOHLU CHAKKI Email: aajusingh786@gmail.com	U S Nagar	SAINIK COLONY WARD NO 1, KASHIPUR, UDHAM SINGH NAGAR	MICRO	Flour milling
1068	KISSAN FERTILIZERS AGENCY Email: kfabzp@gmail.com	U S Nagar	MAIN ROAD BAZPUR, OPP.GURUDWARA, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1069	KICHHA AGRO KISAN BAZAR Email: kichha.agro@gmail.com	U S Nagar	BAREILLY ROAD, KICHHA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1070	GREEN PEST CONTROL AND FUMIGATION Email: DK804866@GMAIL.COM	U S Nagar	SHIV NAGAR WARD NO. 2 RUDRAPUR UDHAM SINGH NAGAR UTTARAKHAND 263153	MICRO	Agricultural activities on a fee or contract basis
1071	AMRIT FERTILIZERS Email: lakhvinder.bhullar14@gmail.com	U S Nagar	MAIN ROAD BAZPUR OPP. PETROLPUMP Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1072	HUSSAIN FERTILIZERS Email: Rashidhusain0007@gmail.com	U S Nagar	VII-JAGANNATHPUR BAZPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1073	BABULALRUPESH KUMAR Email: baboolalrupeshkumar@gmail.com	U S Nagar	NANKMATTA SITARGANJ Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1074	Sethi khad bee & pesticides Email: kumarhim87@gmail.com	U S Nagar	Kasampur Jaspur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1075	CHHINA AGRO CHEMICALS Email: inder.chhina23@gmail.com	U S Nagar	ALIGANJ ROAD ,FASIYAPURA, Udham Singh Nagar	MICRO	Growing of wheat
1076	Shubham Traders Email: gargmurarilal67@gmail.com	U S Nagar	Main Market Jhankat Khatima, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1077	CHAMBAL FERTILISER AND CHEMICALS LIMITED Email: mc.Sharma@Chambal.In	U S Nagar	DARAU ROAD KICHCHA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1078	SRI SAI CHITRAGUPT KRISHI UTPADAN EVAM VIPNAN SAHAKARI SAMITI LIMITED Email: bhaskerchoudhary600@gmail.com	U S Nagar	DARIYAL ROAD , PHASIYAPURA, KASHIPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1079	NAV DURGA AGRO CHEMICALS Email: mickyndac@hotmail.com	U S Nagar	MAIN ROAD BAZPUR UDHAM SINGH NAGAR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1080	Vishkarma fatilizer & prestriside Email: bhupendrak92@gmail.com	U S Nagar	REHMAPUR, KHERALAXMIPUR, JASPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1081	ashirwad traders Email: manpreetsekhon2605@gmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1082	KICHHA AGRO KISAN BAZAR Email: kichha.agro@gmail.com	U S Nagar	BAREILLY ROAD, KICHHA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1083	Pushprsh krishi sewa kendra Email: bhupeshgupta373@gmail.com	U S Nagar	Bhagwanpur Danpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1084	Shri krishna fertilizers Email: Rahulaneja1989@gmail.com	U S Nagar	Sakeniya road, Gadarpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1085	Dinesh Kumar Sarthak Kumar Email: dkskagarwal@gmail.com	U S Nagar	Main market, Jaspur, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1086	KISSAN KHAD BHANDAR Email: GANESHANDASSOCIATES@GMAIL.COM	U S Nagar	LALPUR,RUDRAPUR,UTTARAKHAND Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1087	S.K. FERTILIZERS & PESTICIDES Email: kumarsharad25437@gmail.com	U S Nagar	BHOOTPURI ROAD JASPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1088	JAI MAA TRADERS Email: maheshpatelsab@gmail.com	U S Nagar	BARA, KICHHA , 263148 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1089	MAHESH KHAD BHANDAR Email: mahesh.licsitarganj@gmail.com	U S Nagar	WARD NO 3 HOSPITAL WARD SITARGANJ 262405 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1090	SHANKER SEEDS PVT LTD Email: shankerseeds47@gmail.com	U S Nagar	5 KM. STONE, ALIGANJ ROAD KASHIPUR -244713, Udham Singh Nagar	MICRO	Growing of wheat
1091	SHAHI KRISHI SEWA KENDRA Email: SHAHIKRISHISEVAKENDRA@GMAIL.COM	U S Nagar	GABA COMPLEX SHOPE NO.7, LALPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1092	GURU NANAK FERTILIZERS Email: harvinderkapoor2@gmail.com	U S Nagar	BANSKHERI, BAZPUR, U.S. NAGAR, UTTRAKHAND, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1093	M/S PASHA FERTILISER & PESTICIDES Email: pasha20584@gmail.com	U S Nagar	Shishu mandir road gadarpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1094	GROVER FERTILIZER AND SEED STORE Email: groverankit0010@gmail.com	U S Nagar	BLOCK COLONY, WARD NO.5, GADARPUR, UDHAM SINGH NAGAR, UTTARAKHAND 263152	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1095	KISAN KHAD BHANDAR Email: ismailahmad85385@gmail.com	U S Nagar	BARA, 263148 Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1096	kartar agriclinical Email: kartaragri99@gmail.com	U S Nagar	Garinegi Kahipur Uttrakhand 244713 Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1097	SHRI RAM KHAD BHANDAR Email: balwantsinghjaspur@gmail.com	U S Nagar	AFZALGHAR ROAD JASPUR BUS STAND, UTTARAKHAND 244712 Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1098	UK BIO FERTILIZERS Email: ukbiofertilizers123@gmail.com	U S Nagar	VILLAGE KOLRA RURAPUR, Udhham Singh Nagar	MICRO	Agricultural activities on a fee or contract basis
1099	JOHAL FERTILIZERS & PESTICIDES Email: itr.bazpur01@gmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1100	BANSAL KHAD BHANDAR Email: itr.bazpur02@gmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1101	CHAMAN TRADING COMPANY Email: ajaygdr@rediffmail.com	U S Nagar	KALYANPUR NANKMATTA SITARGANJ 262311, Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1102	Fauji Khad Bhandar Email: umedsingh02011960@gmail.com	U S Nagar	Diyori Khatima, Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1103	GREEN VALLEY FERTILIZERS Email: gvf55555@gmail.com	U S Nagar	JASPUR KHURD, KASHIPUR, UDHAM SINGH NAGAR, UTTARAKHAND Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1104	SHRI BALAJI CEMENT & FARTILIZERE Email: nikeshkumar1725@gmail.com	U S Nagar	JASPUR NATTHA SINGH UTTARAKHAND 244712, Udhham Singh	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1105	Raman Fertilizers Email: ramankhurana01@gmail.com	U S Nagar	Near Agrasen Park, Bareilly Road, Kichha, U. S. Nagar, Uttarakhand	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1106	Bahuudesiya Barheni Dirghakaar Sahkari Samiti Ltd. Email: haripurafertilizer@gmail.com	U S Nagar	Haripura & Harsaan, Udhham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1107	VICKY KHAND BHANDAR Email: vickydutta1400@gmail.com	U S Nagar	GURUDWARA ROAD NANKMATTA SITARGANJ 262311 Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1108	HURIA KHAD BHANDAR Email: rajkumarhurih@gmail.com	U S Nagar	LALPUR, RUDRAPUR, Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1109	SHRI BALAJI CEMENT & FARTTILIZERS Email: nikeshkumar1725@gmail.com	U S Nagar	AFZALGAHR ROAD, CHORAH JASPUR, UDAM SINGH NAGAR, UTTARAKHAND 244712	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1110	Bahuudesiya Barheni Dirghakar Sahkari Samiti Ltd Email: barhenisamiti@gmail.com	U S Nagar	Barheni Udhham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1111	SHARMA FERTILISERS Email: bholasharma348@gmail.com	U S Nagar	DINESHPUR MARKET, GADARPUR Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1112	CHHABRA FERTILISER Email: vijaychhabra002@gmail.com	U S Nagar	DINESHPUR MARKET, Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1113	MAHENDRA KHAD BHANDAR Email: hsdeep.singh95@gmail.com	U S Nagar	LALPUR RUDARPUR, Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1114	Agarwal Traders Email: gopalawpl@gmail.com	U S Nagar	Tanda Ujjain aliganj road, kashipur. Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1116	KISAN AGRO CLINIC RAJPUR JASPUR Email: vikasagra7@gmail.com	U S Nagar	NADEHI SUGAR MILL GUEST HOUSE, KE SAMNE BHOOTPURI ROAD NADEHI RAJPURAANSHIK, UTTARAKHAND 244712 Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1117	BATHLA AGRI CLINIC Email: bathlasunny50@gmail.com	U S Nagar	RAMESHWARPUR ROAD LALPUR U.S.NAGAR Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1118	NEELAM KHAD BHANDAR Email: 8630583d@gmail.com	U S Nagar	BANGALI MOD MADANAPUR, DINESHPUR Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1119	NAVEEN KHAD STORE Email: vimalkrishanmandal@gmail.com	U S Nagar	NIRMAL NAGAR SHAKTIFARM USNAGAR 262405 Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1120	SHAHI KRISHI SEVA KENDRA Email: SHAHIKRISHISEVAKENDRA@GMAIL.COM	U S Nagar	GABA COMPLEX SHOP NO 7 LALPUR , RUARDPUR Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1121	JOSHI FERTILIZERS Email: itr.bazpur03@gmail.com	U S Nagar	HARIPURA BAZPUR Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1122	VINAYAK FERTILIZERS Email: chandnaryan681@gmail.com	U S Nagar	RAMNAGAR, KELAKHERA Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1123	Janta Khad Bhandar Email: jjetharam121212@gmail.com	U S Nagar	RAMNAGAR KELAKHERA, TEHSIL-BAZPUR Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1124	GURU NANAK FERTILIZERS Email: rdsingh.uk@gmail.com	U S Nagar	MAIN ROAD KELAKHERA Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1125	Jubilant Agri and Consumer Product Ltd Email: vishnuk.gupta@jubl.com	U S Nagar	C/o Charandas Ramprakash Kichha Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1126	JAMIDAR PESTICIDES & SEEDS Email: paramjeethanda.bzp@gmail.com	U S Nagar	BAZPUR, UDHAM SINGH NAGAR Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1127	WAHEGURU AGRI CARE Email: ikbaljeetsingh123@gmail.com	U S Nagar	KELAKHEDA BY PASS ROAD BAZPUR, Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1128	SHYAMPURIYA KHAD BHANDAR Email: agarwal.sandip83@gmail.com	U S Nagar	WARD NO 2 SHAKTIFARM SITARGANJ USNAGAR 263151 Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1129	VIKAS FERTILIZERS Email: vikasgarg785@gmail.com	U S Nagar	BERIA DAULAT, BAZPUR Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1130	NEW KRISHI VIKASH KENDRA Email: mohdfaim279@gmail.com	U S Nagar	SARWARKHERA BLOCK, JASPUR, UTTARAKHAND 244713 Udhham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1131	KRISHNA AGRO CHEMICALS Email: tarsemgoyal.kac@gmail.com	U S Nagar	MAIN ROAD BAZPUR, UDHAM SINGH NAGAR, UTTARAKHAND, PIN-262401 Udhham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1132	Grasim Industries Limited Unit : Indo Gulf Fertilisers Email: vijay.pandey@adityabirla.com	U S Nagar	C/o Jindal Trading Co. Bareilly Road Kichha, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1133	RAMAN FERTILIZERS Email: ramanfertilizers20166@gmail.com	U S Nagar	BERIA DAULAT, BAZPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1134	BALAJI AGRO AGENCY Email: balajiagroagencysitarganj@gmail.com	U S Nagar	WARD NO 9 HATHIKHANA SITARGANJ USNAGAR 262405 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1135	M.K trading company Email: ankitgargktm@gmail.com	U S Nagar	Diyori road, Jhankat, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1136	SHRI DAYA TRADERS Email: amit.k.sukhija@gmail.com	U S Nagar	RAMNAGAR ROAD KASHIPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1137	vijay Email: vijayjoshi5783@gmail.com	U S Nagar	Nainital road Bandia Kichha, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1138	Munjal Traders Email: hj404817@gmail.com	U S Nagar	Nainital Road Barhani Bazpur, Uttrakhand< Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1139	Prakash Seeds Pvt Ltd Email: Prakashseeds1@gmail.com	U S Nagar	RAMNAGAR ROAD,KASHIPUR, Udham Singh Nagar	MICRO	Seed processing for propagation
1140	M/s Aneja fertilizers Email: anejafertilizers2000@gmail.com	U S Nagar	Sakeniya Road, Gadarpur Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1141	KUSHWAHA KHAD BHANDAR Email: ramshakal1958@gmail.com	U S Nagar	SABORA KHATIMA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1142	KISSHAN KHAD BHANDAR Email: deepakaneja5875@gmail.com	U S Nagar	SAKENIYA ROAD GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1143	INDIAN POTASH LIMITED Email: sanjay@potindia.com	U S Nagar	C/O M/S JAI GOPAL MURLI DHAR, KICCHA, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1144	GAURAV KHAND BHANDAR Email: sarjeetsingh610@gmail.com	U S Nagar	SARONJA LAMAKHERA US NAGAR 262405 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1145	GURUNANAK FERTILIZERS Email: satnam71655@gmail.com	U S Nagar	BANSKHERA, BAZPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1146	MEHTA KEETNASHI EVAM URAVARAK KENDRA Email: mohanssingh0806@gmail.com	U S Nagar	SHANTIPURI NO-2 RUDRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1147	INSECTICIDES INDIA LIMITED Email: deena@insecticidesindia.com	U S Nagar	NEAR TARAI VIDYAPEETH MEHTOSH GADARPUR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1148	VINAYAK FERTILIZER Email: vinayakfertilizer0@gmail.com	U S Nagar	SAKENIYA, GADARPUR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1149	RANA KHAD BHANDAR Email: surjanrana1975@gmail.com	U S Nagar	LAMAKHEDA NALAI NANAKMATTA SITARGANJ, 262405 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1150	GUMBER FERTILIZERS KILAWALI Email: rajkumargumber412@gmail.com	U S Nagar	KILAWALI BLOCK JASPUR, UTTRAKHAND 244712 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1151	M/s Maa Purnagiri Fertilizers Email: lalitdigari121@gmail.com	U S Nagar	Chakarpur licence Renewal, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1152	Tanmay Pesticides & Fertilizers Email: shankersaini720@gmail.com	U S Nagar	Maheshpura, Bazpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1153	Bani Krishi Kendra Email: banib3358@gmail.com	U S Nagar	Sesaiya, Kichha Road, Udham Singh Nagar 263148 Udham Singh Nagar	MICRO	Growing of other non-perennial crops including beet seed and padding materials, n.e.c.
1154	ROY TRADING COMPANY Email: vikramroy485@gmail.com	U S Nagar	SISONA SITARGANJ U S NAGAR 262405 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1155	radhey khad bhandar Email: ajjurana01@gmail.com	U S Nagar	Radhey Khad Bhandar Kanjabagh Khatima, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1156	SANA FERTILIZER Email: subhashsana8@gmail.com	U S Nagar	SHASTRI WARD NO 2 SHAKTIGARH SAKTIFARM SITARGANJ US NAGAR 263151 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1157	GOVIND FERTILIZERS Email: resham852@gmail.com	U S Nagar	KUWARPUR SISAIYA SITARGANJ US NAGAR UTTARAKHAND 263148 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1158	SHRI GURUNANAK ENTERPRISES TAPERA BIJLI COLONY Email: gurpreetsinghnm02@gmail.com	U S Nagar	TAPERA BIJLI COLONY NANAKMATTA SITARGANJ US NAGAR 262311 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1159	KRISHNA FERTILIZERS Email: sureshsinghranaxxx@gmail.com	U S Nagar	RATANPUR KHATIMA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1160	LAXMI KHAD BHANDAR Email: ranavijaysingh038@gmail.com	U S Nagar	SITARGANJ ROAD KHATIMA U.S.NAGAR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1161	KISHAAN KRISHI UTPADAN AVOM VIPNAN SAHAKARI SAMITI LTD Email: kishaankrishi@gmail.com	U S Nagar	Village Mukundpur Gadarpur, Udham Singh Nagar	MICRO	Agricultural activities on a fee or contract basis
1162	Naveen Khad Bhandar Email: Naveenkhadbhandar@gmail.com	U S Nagar	Wrad No. 09 khatima Road Sitarganj Uham Singh Nagar, Uttarakhand 262405	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1163	SATYAPAL RAJEEV KUMAR Email: ajaysetiya47@gmail.com	U S Nagar	MAIN ROAD,GADARPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1164	KRISHI SEWA Email: snanakchandra104@gmail.com	U S Nagar	44 PANT MARKET KASHIPUR U.S.NAGAR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1165	SHUBHAM KRISHI KENDRA Email: as4683479@gmail.com	U S Nagar	ANANDNAGAR TILIYAPUR SHAKTIFARM SITARGANJ, US NAGAR, UTTARAKHAND 263151	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1166	Gurunanak Enterprises Email: hardevsingh0077@gmail.com	U S Nagar	Sitarganj Road, Near Gurunanak Rice Mill, Jhankat,Khatima, Uttarakhand, Pin Code : 262308 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1167	RASHTRIYA CHEMICALS & FERTILIZER LIMITED C/O JAI KISAN SEVA KENDRA Email: rcflucknow@yahoo.com	U S Nagar	KICHHA, RUDRAPUR (U.S.NAGAR), Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1168	KUSHWAHA KHAD BHANDAR Email: kanhaiyamourya32@gmail.com	U S Nagar	PAHENIYA KHATIMA U.S.NAGAR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1169	VINAYAK AGRICLINIC Email: pankisshh04@gmail.com	U S Nagar	SAKENIYA GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1170	GUPTA TRADERS Email: amit11111gupta@gmail.com	U S Nagar	KUNWARPUR SISAIYA SITARGANJ USNAGAR UTTARAKHAND 263148 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1171	shivalik seeds Email: shivalikseedsjaspur@gmail.com	U S Nagar	Vill Narianpur Kashipur Road Jaspur, Udham Singh Nagar	MICRO	Seed processing for propagation
1172	garg enterprises Email: sakshigarg267@gmail.com	U S Nagar	Melaghat Road in front of Siddharth Hosiery, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1173	Kisan Agro Chemicals Email: malkeetsinghvirk18@gmail.com	U S Nagar	Gularbhoj Road,Gadarpur Udham Singh Nagar	MICRO	Growing of wheat
1174	MEHRA KHAD BHANDAR Email: bhandarivinod49@gmail.com	U S Nagar	SABORA JHANKAT KHATIMA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1175	DEEPAK KHAD BHANDAR Email: mandaldeepak991@gmail.com	U S Nagar	RUDPUR MAHENDRA NAGAR JAILCAMP NO 3 SHAKTIFARM SITARGANJ US NAGAR UTTARAKHAND 262405	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1176	OM SAI FIRTILIZER AND PESTCIDE Email: sureshk04569@gmail.com	U S Nagar	SAKAINIYA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1177	GSFC AGROTECH LIMITED Email: bareilly@gsfcltd.com	U S Nagar	C/O JINDAL TRADING COMPANY, KICHHA, HALDWANI BYE PASS ROAD, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1178	AGRO CROPS SCIENCES Email: mmakarnal@gmail.com	U S Nagar	INDRA COLLONEY RUDARPUR U.S.NAGAR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1179	Jagdamba Agro Traders Email: sunil_rajamrapali@rediffmail.com	U S Nagar	Chakarpur Khatima, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1180	Sanwariya pesicide Email: majumdarpravesh@gmail.com	U S Nagar	Ward No. 3, Dineshpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1181	Khaira Agro Traders Email: harjindersinghkhaira@gmail.com	U S Nagar	Vill-Gurkhura, Khatima, Udham Singh Nagar, Uttarakhand, 262308	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1182	SHIV FERTILIZER Email: pankajhuria@gmail.com	U S Nagar	H.NO. 30 AWASH VIKASH GULARBHOJ ROAD GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1183	jagdamba beej bhandar Email: subhashchandra4481@gmail.com	U S Nagar	Lohiya Head Road, Khatima, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1184	SUKHVINDER KHAD BHANDAR Email: Arjundas735166@gmail.com	U S Nagar	ABDULLA NAGAR, SAKANIYA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1185	shubham traders Email: gargmurarilal67@gmail.com	U S Nagar	MAIN Market Jhankat, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1186	GURUNANAK KHAD BHANDAR Email: gurunanakkhad@gmail.com	U S Nagar	SAKAINIYA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1187	FRIENDS AGRO AGENCY Email: abhisheksitu1527@gmail.com	U S Nagar	GORIKHERA SITARGANJ, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1188	UTTARANCHAL AGRO SALES Email: uttaranchalagrosales@gmail.com	U S Nagar	MURADABAD ROAD KASHIPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1189	SUKHDEV KHAD BHANDAR Email: sukhdevmandal111972@gmail.com	U S Nagar	RATAN FARM NO2 ARVIND NAGAR SITARGANJ US NAGAR UTTARAKHAND 262405	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1190	OM AGRO SALES Email: narulaseeds.01@gmail.com	U S Nagar	V16,GOLE MARKET, RUDRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1191	SANDEEP KUMA SAURABH KUMAR Email: gm1488545@gmail.com	U S Nagar	KHATIMA ROAD SITARGANJ, UDHAM SINGH NAGAR, UTTARAKHAND 262405	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1192	PUNJAB AGRO SEEDS Email: bamba.sukh@gmail.com	U S Nagar	POLIGANJ ROAD MAJHOLA, KHATIMA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1193	Dayal Fertilizers Private Limited Email: anil.goel@dayalgroup.com	U S Nagar	Bareilly Road, Kichha, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1194	Sri Swastik Seeds Industries Email: prakashmathpal4344@gmail.com	U S Nagar	Vill. Girdya Munshi , Garhinegi Road , P.O. Karanpur, Jaspur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1195	BRAR SEEDS PRIVATE LIMITED Email: kcj.7084@gmail.com	U S Nagar	RANJEET NAGAR FARM BAZPUR Udham Singh Nagar	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1196	GSFC AGROTECH LIMITED Email: aobareilly@gsfcltd.com	U S Nagar	C/O JINDAL TRADING CO. KICHHA RUDRAPUR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1197	RANJEET SINGH & SONS Email: ranjitsinghchugh011@gmail.com	U S Nagar	MAIN MARKET GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1198	BARHENI Email: barhenisamiti@gmail.com	U S Nagar		MICRO	Wholesale of fertilizers and agrochemical products
1199	MOTI INSECTICIDES PVT LTD Email: aaa1330@rediffmail.com	U S Nagar	PLOT NO-20A, SECTOR-2,, IIE, PANTNAGAR RUDRAPUR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1200	Bahuudesiya Barheni Dirghakaar Sahkari Samiti Ltd. Email: beriafertilizer@gmail.com	U S Nagar	Beriyadaulat Udham Singh Nagar,	MICRO	Wholesale of fertilizers and agrochemical products
1201	NAYAL FERTILIZERS Email: anandnaya1888@gmail.com	U S Nagar	CHAKKIMOD, DINESHPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1202	KRISHNA FERTILIZERS & PESTICIDES Email: sakshampopli1111@gmail.com	U S Nagar	GULARBHOJ, GADRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1203	H.R.SEED PRODUCTS Email: mainimanjeet99@gmail.com	U S Nagar	KASHIPUR ROAD, GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1204	M/s Asim Beej Bhandar Email: ashimfertilizers20166@gmail.com	U S Nagar	Kelakhara, Bazpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1205	KAVERI SEEDS Email: gumberdarshan@gmail.com	U S Nagar	VILL- BALRAMNAGAR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1206	SHREE KRISHNA SEEDS Email: officesks426@gmail.com	U S Nagar	BARA KHERA DINESHPUR ROAD GADARPUR Udham Singh Nagar	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1207	JU AGRI SCIENCES PRIVATE LIMITED Email: bazpur@juagrisciences.com	U S Nagar	VILLAGE CHAKARPUR TEHSIL BAZPUR DISTRICT- UDHAM SINGH NAGAR PIN 262401	MICRO	Wholesale of fertilizers and agrochemical products
1208	KELAKHEDA KISAN SEVA SAHKARI SAMITI Email: ravi013pathak@gmail.com	U S Nagar	CENTER KELAKHEDA BAZPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1209	BAYARD AGRO SCIENCES PRIVATE LIMITED Email: mahipalsinghbpz@gmail.com	U S Nagar	RAMRAJ ROAD, REVENUE VILLAGE BHONA ISLAM NAGAR, BAZPUR TEHSIL BAZPUR DISTRICT- UDHAM SINGH NAGAR, UTTARAKHAND	MICRO	Manufacture of insecticides, rodenticides, fungicides, herbicides
1210	KELAKHEDA KISAN SEVA SAHKARI SAMITI Email: ravipathak.real@gmail.com	U S Nagar	CENTER RAMNAGAR, BAZPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1211	KELAKHEDA KISAN SEVA SAHKARI SAMITI Email: kannojiyamanoj7@gmail.com	U S Nagar	CENTER MASIT, BAZPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1212	PAN SEEDS PVT. LTD Email: dilip@panseeds.in	U S Nagar	PIPALIA, GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1213	Anhad Seeds Email: anhadseeds@gmail.com	U S Nagar	Village Piplia Gadarpur, Udham Singh Nagar	MICRO	Growing of wheat
1214	GOPAL KHAD BHEEJ BHANDAR Email: gcbiswas75@gmail.com	U S Nagar	NIRMAL NAGAR NO1 , SHAKTIFARM SITARGANJ UDHAM SINGH NAGAR UTTARAKHAND 263151	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1215	GURUNANAK AGRI CLINIC Email: GACUSN0@GMAIL.COM	U S Nagar	MAIN ROAD,OPPSITE GURUDWARA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1216	RADHA KRISHAN SEEDS Email: dharmalpdogra042@gmail.com	U S Nagar	PIPALIYA GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1217	EVERGREEN BIO FERTILIZERS PVT.LTD Email: ebf_bly@yahoo.co.in	U S Nagar	KHATIMA ROAD SITARGANJ, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1218	ANUSHREE SEEDS Email: akhileshseedtech@gmail.com	U S Nagar	FULSUNGA RUDARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1219	Kisan Khad Bhandar Email: ranvijayrai@gmail.com	U S Nagar	Mela ghat Bazar khatima, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1220	BANSAL AGRO SEEDS Email: ashish_ab28@yahoo.com	U S Nagar	KHASRA NO.27 A BHONA BIRAH ROAD, BHONA ISLAM NAGAR, Udham Singh Nagar	MICRO	Seed processing for propagation
1221	SOM AGRO SEEDS Email: somagro1234@gmail.com	U S Nagar	GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1222	VISHAL TRADERS Email: vishalsinghrana140@gmail.com	U S Nagar	BARUABAG JHARI SITARAGNJ UDHAM SINGH NAGAR UTTARAKHAND 262405	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1223	SANJAY TRADING COMPANY Email: satvikmittal.stg@gmail.com	U S Nagar	KHATIMA ROAD, SITARGANJ, UDHAM SINGH NAGAR, UTTARAKHAD 262405	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1224	SWASTIK SEEDS Email: goelrajesh47@yahoo.com	U S Nagar	RAMRAJ ROAD BAZPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1225	AHUJA SEEDS Email: ahujaseeds2007@Gmail.com	U S Nagar	Near Ahuja dharma kata Gadarpur Udham Singh Nagar	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1226	SHRI SWASTIK SEEDS Email: anshulsingla20@yahoo.com	U S Nagar	BIRAH, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1227	RUKMANI SEEDS Email: rukmaniseed@gmail.com	U S Nagar	GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1228	Shubh Laxmi seeds company Email: sheshnathsharma262@gmail.com	U S Nagar	Turkagouri, Gokulnagar,kichha Udham Singh Nagar	MICRO	Growing of pulses (dal) and other leguminous crops such as peas and beans, not used as oilseeds
1229	YASH AGRO AGENCY Email: kumarumesh8692@gmail.com	U S Nagar	PILIBHIT ROAD KHATIMA, UDHAM SINGH NAGAR, UTTARAKHAND 262308	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1230	LALMAN JAIN AGRO SEEDS Email: jayantjain777@gmail.com	U S Nagar	BHONA BIRAH ROAD, BAZPUR Udham Singh Nagar	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1231	ASHOKA SEEDS Email: ashokaseedsuk@gmail.com	U S Nagar	MAHESHPUR , KHANPUR PURAB , GADARPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1232	KISSAN TRADING CORPORATION Email: KTCRDP@GMAIL.COM	U S Nagar	24, SURYA ENCLAVE, NEAR RAILWAY STATION, RUDRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1233	shree anand agro products pvt ltd Email: prayagautomobiles@gmail.com	U S Nagar	kunda chowk jaspur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1234	Vasundhra Seeds Email: gauravshriom86@gmail.com	U S Nagar	Village-Pipliya, Gadarpur, Udham Singh nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1235	Tirupati Krishi Utpadan Vipran Avam Bahudesiya Shakari Samiti Ltd Email: dumraassociates4@gmail.com	U S Nagar	Sakaniya Road Gadarpur Udham Singh nagar 263152 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1236	Rallis India Ltd Email: cfa.rudrapur@rallis.com	U S Nagar	Adlakha Glass Compound, Near pani ki tanki Bhurarani Rudrapur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1237	SHIV AGRO SEEDS CORPORATION Email: shivagroseed@gmail.com	U S Nagar	NADEHI SUGAR MILL ROAD, JASPUR, UTTARAKHAND-244712, Udham Singh Nagar	SMALL	Growing of wheat
1238	SHIVALIK TARAI SEEDS Email: Yadav.tushar26@gmail.com	U S Nagar	ADARSH NAGAR, MAHUAKHERA GANJ, KASHIPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1239	Paras seeds products Email: geeta.gupta.rdr55@gmail.com	U S Nagar	8/2 INDUSTRIAL AREA, PASHUPATI NATH RICE MILL, BHADAIPURA WARD NO 4 RUDRAPUR UDHAM SINGH NAGAR, UTTARAKHAND	MICRO	Seed processing for propagation
1240	R.K. AGRO SEED Email: gauravicai11@gmail.com	U S Nagar	FAUJI COLONY, FARIDPUR, BAZPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1241	Sethi Khad Beez & Pesticides Email: kumarhim87@gmail.com	U S Nagar	Kasampur Jaspur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1242	JINDAL TARAI SEED Email: rvpandey568@gmail.com	U S Nagar	KHATIMA ROAD SITARGANJ, UTTARAKHAND 262405 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1243	Sethi Khad Beez & Pesticides Email: kumarhim87@gmail.com	U S Nagar	Kasampur Jaspur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1244	Nadiya Fertilizers and Chemicals Pvt Ltd Email: PRINCENFC@GMAIL.COM	U S Nagar	Khatima Road Sitarganj, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1245	VEER SINGH CHAKKI Email: sveer3780@gmail.com	U S Nagar	VILL KKHURPIA FARM, KICHHA, UDHAM SINGH NAGAR, UTTARAKHAND 263148	MICRO	Flour milling
1246	indian Phosphate Ltd. Email: jainsanjai@ymail.com	U S Nagar	Room No. 3, Opp Radha Swami Satsang Bhawan, Darau Road, Kichha, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1247	SURAJ SEEDS Email: Sourabhgupta1411@gmail.com	U S Nagar	KHATIMA ROAD SITARGANJ US NAGAR UTTARAKHAND 262405	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1248	SUNIL INDUSTRIES Email: sanjivniharikateeco308@gmail.com	U S Nagar	GOKULDHAM FULSUNGA, TEHSIL RUDRAPUR, UDHAM SINGH NAGAR, UTTARAKHAND 263153	MICRO	Other grain milling and processing n.e.c.
1249	BAJAJ AGRO SEEDS Email: bajajagroseedsg@gmail.com	U S Nagar	BARAKHERA ROAD , GADARPUR, UTTARAKHAND, Udham Singh Nagar	MICRO	Growing of wheat
1250	ARJUN SEEDS Email: sanjeevjham7@gmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1251	MITTAL SEEDS Email: kichhaagroekisanbazar@gmail.com	U S Nagar	MITTAL SEEDS\r\nBAREILLY ROAD\r\nKICHHA Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1252	Shakti Seeds Email: shaktiseedsbazpur@gmail.com	U S Nagar	VILLAGE MUNDIYA KALA,BAZPUR Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1253	SHRI BALAJI INDUSTRIES Email: Sukhwinder0143@gmail.com	U S Nagar	BIJITI ROAD SITARGANJ UDHAM SINGH NAGAR UTTARAKHAND Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1254	KANDPAL TRADING COMPANY Email: subhashkandpal22@gmail.com	U S Nagar	MALIK NAZEER NANAKMATTA, UDHAM SINGH NAGAR, UTTARAKHAND 262311	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1255	JUST IN AGRI FOODS PRIVATE LIMITED Email: justinagrifoods@gmail.com	U S Nagar	19 IDEB-ESTATE, PHASE I, MAHUAKHERAGANJ, Kashipur, Udham Singh Nagar, Uttarakhand, 244713	SMALL	Preservation of fruit and vegetables n.e.c.
1256	D N AGRO PRODUCTS PVT LTD Email: dnagroproducts@gmail.com	U S Nagar	NH 74 Afazal Road, Jaspur, Udham Singh Nagar	MICRO	Growing of wheat
1257	M/S M.M. SEEDS Email: mohit.25agrw1@gmail.com	U S Nagar	Opposite Beersheba School, Bareilly Road, Sirauli Kalan , Kichha, Udham Singh Nagar	MICRO	Seed processing for propagation
1258	GURU TEG AGRI SEED Email: tegagriseeds01@gmail.com	U S Nagar	MUKUNDAPUR GADARPUR, Udham Singh Nagar	MICRO	Seed processing for propagation
1259	KRIBHCO LTD Email: akhikribhco@gmail.com	U S Nagar	KHURANA MARKET KICHHA, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1260	PUNJAB SEEDS Email: punjabseeds13@gmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1261	VIKRAM AGRO SEEDS Email: vikramsudha7@gmail.com	U S Nagar	RAMJIVANPUR NO.1, GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1262	R.K.Frozen Foods Email: rkfrozenfoodskashipur@gmail.com	U S Nagar		MICRO	Growing of wheat seeds
1263	BAJAJ SEEDS STORE Email: nikbajaj2008@gmail.com	U S Nagar	GOLE MARKET, MAIN BAZAR KICHHA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1264	PMV MALTINNGS PVT LTD Email: farmingkp@pmvmaltings.com	U S Nagar	MAHUHAKHERA GANJ KASHIPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1265	SHIV SHAKTI SEED Email: gargshubham071@gmail.com	U S Nagar	FAUJI COLONY, BAZPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1266	MUNJAL SEEDS FARM Email: KULDEEP.SAIAGROSEEDS@GMAIL.COM	U S Nagar	GOPAL NAGAR, GADARPUR, Udham Singh Nagar	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1267	PANTNAGAR SEEDS PVT LTD Email: digitaltaxation2017@gmail.com	U S Nagar	BAZPUR ROAD KASHIPUR, Udham Singh Nagar	MICRO	Grain milling other than wheat, rice and dal
1268	BAJAJ SEEDS Email: sanjeevnuclotec@gmail.com	U S Nagar	PIPALIA GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1269	TARAI SEED STORE Email: taraiseedindia@yahoo.co.in	U S Nagar	T-2, T-3, GOLE MARKET ,RUDARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1270	PAL KHAD BHANDAR Email: gppeeruankit123@gmail.com	U S Nagar	SHIVLALPUR AMARJHANDA, KASHIPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1271	SAI AGRO SEEDS Email: KULDEEPPVINAYAK0001@GMAIL.COM	U S Nagar	GOPAL NAGAR GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1272	Pashupati Seeds Email: pashupatisseeds@gmail.com	U S Nagar	Bhona Biraha Road, Bazpur, Uttarakhand, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1273	SHRI GANPATI PESTICIDES Email: manojpapnejasonu@gmail.com	U S Nagar	OPP TEHSIL VILLAGE SURAJPUR GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1274	KANHAIYALAL BABURAM & SONS Email: klbrfertilizer@gmail.com	U S Nagar	SARWERKHEDA KASHIPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1275	Anagh Frozen Food & seeds Email: anaghfrozenpaiga@gmail.com	U S Nagar		MICRO	Growing of wheat seeds
1276	NARULA SEED STORE Email: omagrosales.01@gmail.com	U S Nagar	SHOP NO.14, SUBZI MANDI GATE ,NAINITAL ROAD ,RUDRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1277	KESHAV SEEDS Email: seedskeshav@gmail.com	U S Nagar	VILL- ALAKHDEVI, GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1278	SUKHMANI SEEDS Email: gurvindersamsung32@gmail.com	U S Nagar	DHAULPUR, RUDRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1279	TARAI SEED COMPANY Email: jonysmart83@gmail.com	U S Nagar	B 86 CA MAIN MARKET, Udham Singh Nagar	MICRO	Mixed farming
1280	jain seed store Email: jainseedstore123@gmail.com	U S Nagar	C29 ward no 11 bhalla medical gali main market, Rudrapur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1281	Gajanan Pesticides Dineshpur Email: gargakshay999@gmail.com	U S Nagar	Durga mandir dineshpur, Udham singh nagar 263160	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1282	hari khad bhandar Email: sonupandey9060@gmail.com	U S Nagar		MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1283	HIMGIRI AGRO TRADERS Email: avjeetsinghkhARBanda@gmail.com	U S Nagar	R-4/9 BHAGAT SINGH CHOWK, RUDRAPUR, Udham Singh Nagar	MICRO	Growing of vegetable seeds (except beet seed)
1284	Maya Foods Email: mradulgoel.mg@gmail.com	U S Nagar	VILLAGE DEORI, BAZPUR, Udham Singh Nagar	MICRO	Seed processing for propagation
1285	KISSAN SEED STORE Email: sarvjeets90@gmail.com	U S Nagar	GALLA MANDI ROAD SHIVAJI CHOWK RUDRAPUR, Udham Singh Nagar	MICRO	Growing of vegetables, n.e.c.
1286	NEELKANTH TARAI SEEDS Email: abhishek.munjal@yahoo.com	U S Nagar	OPPOSITE FCI, WARE HOUSE, MAIN ROAD GADARPUR, DISTT, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1287	M/S MAHALUXMI SEEDS Email: sanjeevnuclotec1@gmail.com	U S Nagar	JHAGARPURI, MAIN ROAD, GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1288	Jai Durga Seeds and Bio Tech Email: umendrakumar039@gmail.com	U S Nagar	Haldwani road bandia Kichha, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1289	AVI VEGETABLE SEED COMPANY Email: avivegetable@gmail.com	U S Nagar	A-131 AWAS VIKAS, RUDRAPUR, Udham Singh Nagar	MICRO	Growing of vegetable seeds (except beet seed)
1290	hemkunt seeds Email: hemkuntseeds@gmail.com	U S Nagar	AGM 37, GALLA MANDI, RUDRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1291	NINJA SEEDS PVT. LTD. Email: NINJASEEDS@GMAIL.COM	U S Nagar	A-155 AWAS VIKAS, RUDRAPUR, Udham Singh Nagar	MICRO	Growing of vegetable seeds (except beet seed)
1292	Anand Agro Seeds Gadarpur Email: anandagroseeds1313@gmail.com	U S Nagar	Beriya Road Bishanpur Gadarpur, Udham Singh Nagar	MICRO	Seed processing for propagation
1293	VPS AGRITECH LIMITED Email: vpsrdp@gmail.com	U S Nagar	A-81, NETAJI SUBHASH MARG, RUDRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1294	UMESH TRADERS Email: umeshsinghal.stg@gmail.com	U S Nagar	BIJTI ROAD - SITARGANJ, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1295	M/s Rana Seed Farm Email: sandeepsingh131330@gmail.com	U S Nagar	Village Vikarampur Tehsil Bazpur, Udham Singh Nagar, Uttarakhand	MICRO	Growing of pulses (dal) and other leguminous crops such as peas and beans, not used as oilseeds
1296	SHREE SACHIDANAND FEED STORE Email: sunnyfutela14@gmail.com	U S Nagar	MAIN ROAD GADARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1297	NUZIVEEDU SEEDS LIMITED Email: bhupendersingh.k@nuziveeduseeds.com	U S Nagar	PLOT NUMBER 1 & 2, IIE, SECTOR 12, SIDCUL, PANTNAGAR, DISTT- Udham Singh Nagar	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1298	HARI BEEJ BHANDAR Email: shivam.munjal47@gmail.com	U S Nagar	Near Urvashi Cenema ,Bareilly Road, Kichha, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1299	GOPAL AGRO TRADERS Email: gopalagrotraders@gmail.com	U S Nagar	BAGHA CHO VAN, KHATIMA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1300	NAINITAL TARAI SEEDS P LIMITED Email: ntsseedspvtltd@gmail.com	U S Nagar	KACHNAL GAZI MANPUR ROAD KASHIPUR, Udham Singh Nagar	MICRO	Growing of wheat
1301	SHARAN SEED Email: varunkochar09@gmail.com	U S Nagar	VILL.LAKHANPUR, BERIA ROAD, BAJPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1302	Fauji coloney Sadhan Shakari Samity Ltd Email: faujicoloney@gmail.com	U S Nagar	Faujicoloney, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1303	KAMAL AGENCIES Email: kamal.agencies@rediffmail.com	U S Nagar	NEAR AGRAWAL SABHA MOH. SINGHAN KASHIPUR, UTTARAKHAND-244713, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1304	DASHMESH KHAD BHANDAR Email: dashmeshkhadbhandar01@gmail.com	U S Nagar	KHATIMA ROAD, SITARGANJ, DISTT- Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1305	AVIKA SEED Email: asthabeej@gmail.com	U S Nagar	VILLAGE JAITHPUR GHOSI, BAZPUR ROAD, KASHIPUR, Udham Singh Nagar	MICRO	Seed processing for propagation
1306	HIL (INDIA) LTD Email: singhkamal_2006@yahoo.com	U S Nagar	AGM 74/2 GALLA MANDI RUDRAPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1307	SHREE RAM AGRO INDIA Email: aaa1330@rediffmail.com	U S Nagar	PLOT NO. 20A, SECTOR 2, SITUATED AT INTEGRATED INDUSTRIAL AREA ESTATO, PANTNAGAR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1308	Shri Balaji Agro Email: shribalajiagro11@gmail.com	U S Nagar	Tanda Azam Kelakhara Bazpur, Udham Singh Nagar	MICRO	Growing of wheat
1309	ASEAN AGRITECHNOLOGIES INDIA PVT. LTD Email: ASEANAGRITECHPRODUCTS@GMAIL.COM	U S Nagar	PLOT NO.16 BHURARANI ROAD NEAR AGARWAL HOSPITAL RUDARPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1310	roopam agro seeds Email: ROOPAMAGRO244712@GMAIL.COM	U S Nagar	vill ganguwala jaspur, Udham Singh Nagar	MICRO	Growing of wheat
1311	Gurunanak fertilizers Email: vijaychhabra100@gmail.com	U S Nagar	main market dineshpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1312	DEX AGRO SWEETENERS PVT LTD Email: ankitdexagro@gmail.com	U S Nagar	BHOOT PURI ROAD , RAJPUR , JASPUR, Udham Singh Nagar	SMALL	Manufacture of potato flour & meals and prepared meals of vegetables
1313	AVI VEGETABLE SEED COMPANY Email: avivegetable@gmail.com	U S Nagar	A-131 AVAS VIKAS , RUDRAPUR, Udham Singh Nagar	MICRO	Growing of vegetable seeds (except beet seed)
1314	M/s Shriram Fertilizers & Chemicals Email: DeepakMishra@dcmshriram.com	U S Nagar	C/o N.L.D.K.Enterprises, Bareilly Road , Kichha, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1315	BANSAL AGRO SEEDS Email: bansal.mayank@hotmail.com	U S Nagar	VILL DADUWALA JASPUR ROAD, JASPUR 244712, Udham Singh Nagar	MICRO	Growing of wheat
1316	Aries Agro Ltd Email: ariesrudrapur@gmail.com	U S Nagar	Durga Fertilizer Gallamandi, Rudrpuar, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1317	SACHA SAUDA ATTA CHAKKI Email: gpc.rdr19@gmail.com	U S Nagar	H NO 172, SISAIYA, SITARGANJ, Udham Singh Nagar	MICRO	Flour milling
1318	M/s S.S.Agri Solutions Email: solutionsagri@gmail.com	U S Nagar	Bhurarani Road,Rudrapur-263153, Udham Singh Nagar	MICRO	Growing of wheat
1319	KISAN SEWA KENDRA Email: kisansewakendra.sk@gmail.com	U S Nagar	Main market Kiccha, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1320	Dhariwal Agro Seeds Email: gurubakshsingh375@gmail.com	U S Nagar	Jai Nagar No 5 Chhatarpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1321	DEV BHOOMI AGRO OILS PRIVATE LIMITED Email: devbhoomiagrooils@gmail.com	U S Nagar	VILLAGE MUKANDPUR, BAZPUR, UDHAM SINGH NAGAR, UTTARAKHAND	MEDIUM	Manufacture of vegetable oils and fats excluding corn oil
1322	MS SAVARIYA TRADING CO Email: ADVTAXCONSULTANT853@GMAIL.COM	U S Nagar	PLOT NO 100\1. BAREILLY ROAD, KICHHA, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1323	V K B TRADERS Email: ks77333@gmail.com	U S Nagar	KESHOWALA MOD, RAMRAJ ROAD BAZPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1324	PARADEEP PHOSPHATES LTD Email: vtyagi@adventz.com	U S Nagar	BAREILLY ROAD KICHHA USNAGAR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1325	NARWAL TRADERS Email: milanverma5999@gmail.com	U S Nagar	Kharakpur Devipura Kashipur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1326	B S Bajwa Seeds C/O Shri Ram Ji Seeds Email: bsbajwaseeds@gmail.com	U S Nagar	Vill Kuriya Kichha Rudrapur 263153 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1327	KHANNA RICE MILL Email: ayushkhanna025@gmail.com	U S Nagar	Vill u2013 Lakhanpur, Dhansara Road, Bazpur, Distt.- U. S. Nagar, Uttarakhand	SMALL	Rice milling
1328	Aastha Organics Email: aasthaorganics@gmail.com	U S Nagar	Godown part 2, Ramnagar road opposite hero motor agency, Kashipur, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1329	shree agro oil industries Email: pankaj.chhabra4@gmail.com	U S Nagar	188 fulsungi gangapur road rudrapur, Udham Singh Nagar	MICRO	Growing of mustard oil seed
1330	DEVGAN SEEDS Email: sagarnakul2001@rediffmail.com	U S Nagar	Mundiya pistaar, near Sharma palace Bazpur U.S.Nagar Uttarakhand	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1331	MOTHER PROTEINS AND FRESH FOODS Email: mpffrudrapur@gmail.com	U S Nagar	KHET NO. 526, SHIMLA PISTOUR, KICHHA ROAD, RUDRAPUR, Uttarakhand, 26315 Udham Singh Nagar	SMALL	Warehousing of refrigerated (cold storage)
1332	BARODA AGRO CHEMICALS LIMITED Email: purchase@barodaagro.com	U S Nagar	Adlakha Compound, Village & Post office, Bhura Rani, Rudrapur 263153 District- Udham Singh Nagar, Uttrakhand	MICRO	Wholesale of fertilizers and agrochemical products
1333	SAQUAILAINI INDUSTRIES Email: rgbrothersassociates01@gmail.com	U S Nagar	RAMPURA SHAKAR BAZPUR, Udham Singh Nagar	MICRO	Seed processing for propagation
1334	M.P. AGRO FOODS Email: mptraderbly@gmail.com	U S Nagar	BAREILLY ROAD, VILL. SIROLI KALAN,KICHHA, UTTARAKHAND - 263148, Udham Singh Nagar	SMALL	Inorganic farming of basmati rice
1335	SHRI GANPATI PESTICIDES Email: Sukhdev.maini1@gmail.com	U S Nagar	OPP. TEHSEEL GADERPUR, VILL- SURAJPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1336	Ajinkya Chemtech Pvt. Ltd. Email: ajinkyachem@yahoo.com	U S Nagar		MICRO	Wholesale of fertilizers and agrochemical products
1337	Gharda Chemicals Limited Email: arif.nihal@gharda.in	U S Nagar	ADLAKHA COMPLEX BHOORARANI RUDRAPUR, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1338	AKSH AGRI BUSSINESS Email: gillsukhpalsingh@gmail.com	U S Nagar	42/4 VILL LAKHANPUR PO BAZPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1339	KOCHHAR SEEDS Email: kochharvipul589@gmail.com	U S Nagar	M/S KOCHHAR SEEDS,BERIA ROAD, BAZPUR, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1340	SWASTIK AGRO INDUSTRIES Email: swastikagroindustries11@gmail.com	U S Nagar	Vill sampatpur Jafarpur, Udham Singh Nagar 263153	MICRO	Seed processing for propagation
1341	VPS Agritech Enterprises Email: agritechvps@gmail.com	U S Nagar	Adlakha Glass Compound, Near Pani Ki Tanki, Bhoorarani, Rudrapur 263153, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1342	Indofil Industries Limited Email: amit.rdp@gmail.com	U S Nagar	Adlakha Glass Compound, Near Pani Ki Tanki, Bhoorarani, Rudrapur 263153, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1343	Husain Flour Mill Email: amilhusain.786@gmail.com	U S Nagar	Katangari, K.P. Sisaiya, Udham Singh Nagar - Uttrakhand	MICRO	Flour milling
1344	Shree Balaji Kutir Udyog Email: sajjangoel48@gmail.com	U S Nagar	Bandiya, Kichha, Udham Singh Nagar, Uttarakhand - 263148	MICRO	Flour milling
1345	SOOD HYBRID SEEDS Email: seedssoodhybrid@gmail.com	U S Nagar	BHONA ISLAM NAGAR, BHONA BIRAHA ROAD, P.O BAZPUR-262401, DIST Udham Singh Nagar, UTTARAKHAND	MICRO	Seed processing for propagation
1346	BISHT AATA CHAKKI Email: bsbshaktifarm@gmail.com	U S Nagar	TILYAPUR ANAND NAGAR SHAKTIFARM SITARGANJ,Udham Singh Nagar	MICRO	Grain milling other than wheat, rice and dal

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1347	KANIKA FLEXIBLE PACKAGINGS Email: taxhelpksp100@gmail.com	U S Nagar	Khasra No. 131G, VILL KUDAIYAWALA, KASHIPUR, Udham Singh Nagar	MICRO	Manufacture of semi-finished of plastic proudcts (plastic plates, sheets,blocks,film,foil,strip etc.)
1348	Agriculture Department Email: caousnagar@gmail.com	U S Nagar	Room No 101 Vikash Bhawn Nainital Road Rudrapur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1349	Krishna Rice Mill Email: krishnaricemillvinod@gmail.com	U S Nagar	Vill: Baksora, Jaspur Road, Kashipur, Udham Singh Nagar	SMALL	Growing of wheat
1350	Hari seeds pvt ltd Email: hspl_seed@rediffmail.com	U S Nagar	Jaspur Khurd Kashipur, Udham Singh Nagar	MICRO	Seed processing for propagation
1351	Aman Atta Chakki Email: praveenkumar@hpskichha.com	U S Nagar	Word No. 05, Bandiya, Bhatta, Kichha, Udham Singh Nagar, Uttarakhand	MICRO	Grain milling other than wheat, rice and dal
1352	Flexxon Biosciences pvt Ltd Email: flexxon.biosciences2017@gmail.com	U S Nagar	BALLEY ROAD, KICHHA, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1353	KULDEEP SINGH ATTA CHAKKI Email: gpc.rdr141@gmail.com	U S Nagar	VILLAGE- KHAIRANA, BIDORA, UDHAM SINGH NAGAR, UTTARAKHAND, 262405	MICRO	Flour milling
1354	PRAKASH ATTA CHAKKI Email: PRAKASHJOSAN@GMAIL.COM	U S Nagar	VILLAGE PIPALIYA PISTTOUR, NANAKMATTA, Udham Singh Nagar	MICRO	Flour milling
1355	Jay Guru Agriclinic Email: roy.dev82@gmail.com	U S Nagar	Vill Bangali Mod Dineshpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1356	KONARAK GLOBAL SERVICES Email: konarak999@gmail.com	U S Nagar	VILLAGE KURIYA RUDRAPUR, Udham Singh Nagar	MICRO	Growing of wheat
1357	Agarwal Assocites Email: uttrakhandseed@gmail.com	U S Nagar	New Jain Colony, Near Malik Colony Bhurarani Rudrapur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1358	Pahuja Biotech Pvt.Ltd Email: veerendrakamboj@gmail.com	U S Nagar	Near-SWC Anaj Mandi , Word No-9, Main Road Gadarpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1359	DIVYANSH ORGANICS PRIVATE LIMITED Email: pintu.morna@gmail.com	U S Nagar	Ialpur Kichha, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1360	SHRI MAHALAXMI AGRO PRODUCTS Email: shrimalahalaxmiagrop@gmail.com	U S Nagar	KHATA NO. 00097 KHASRA NO. 66/6, BERIA ROAD, VILL. BADRIPUR, BAZPUR, YUDHAM SINGH NAGAR, UTTARAKHAND-262401 Udham Singh Nagar	SMALL	Rice milling
1361	Shree Baba Ji Seeds & Agro Producta Email: tinkumomi@gmail.com	U S Nagar	Brakhera Bhensiya Mod, Gadarpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1362	Manvi Pesticide And Fertilizers Email: anil.kashipurusn@gmail.com	U S Nagar	Yadav Complex Vill Hariyawala Choraha Jaspur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1363	BHARAT KHAD BHANDAR Email: tofeeka827@gmail.com	U S Nagar	Jafarpur Rudrapur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1364	Golden Agro Seeds Email: maneesh29988@gmail.com	U S Nagar	Vill Gularghojhi Post Dharmpur Jaspur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1365	Ajay Rice Mill Email: mohitgoyal287@gmail.com	U S Nagar	Dophariya, Kichha, Udham Singh Nagar, Uttarakhand - 263148	MICRO	Rice milling
1366	ASHISH AGRI FOODS PVT LTD Email: legalprofessionals2020@gmail.com	U S Nagar	11A- IDEB INDUSTRIAL ESTATE, PHASE 1, MAHUAKHERAGANJ, KASHIPUR, UDHAM SINGH NAGAR , UTTARAKHAND 244713	SMALL	Growing of plants for planting
1367	RANA KISAN ATTA CHAKKI Email: romisinghrana@gmail.com	U S Nagar	SHIV ENCLAVE SOCIETY, SHIMLA BAHADUR, NEAR TEEN PANI DAM, FULSUNGA, RUDRAPUR UDHAM SINGH NAGAR	MICRO	Flour milling
1368	ASTHA JAIVIK KISAN SEWA KENDRA Email: palkrishna1988@gmail.com	U S Nagar	Bara, Udham Singh nagar 263148	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1369	SHUBHAMSRI AGRO BIOGENE LLP Email: shubhamsriagrobiogene@gmail.com	U S Nagar	vill-kesharpur po-khanpur, tehsil-rudrapur, Udham Singh Nagar	MICRO	Growing of wheat
1370	M/S MUSKAN FOODS Email: muskanfoodsrd@gmail.com	U S Nagar	Khet No. 98/2 MIN, 98/5 MIN, 101/1, 101/2, Bindukhera, Rudrapur, U.S.Nagar, Uttarakhand 263153	MEDIUM	Preservation of fruit and vegetables n.e.c.
1371	SHIV NARAYAN GOPI RAM Email: MONU.AGARWAL81@GMAIL.COM	U S Nagar	PLOT NUMBER 22/2, KICHHA BY PASS ROAD, INDUSTRIAL AREA, RUDRAPUR, Udham Singh Nagar	SMALL	Rice milling
1372	SHRI RAMJI SEEDS Email: manojrajdev@gmail.com	U S Nagar	KHET NUMBER 192 MIN , MALSA ROAD, LALPUR, RUDRAPUR, Udham Singh Nagar	SMALL	Rice milling
1373	KASHIPUR SAHKARI GANNA VIKAS VA BIKRI SAMITI LIMITED Email: maheshchauhan9412@gmail.com	U S Nagar	KASHIPUR, Udham Singh Nagar	MICRO	Manufacture of urea and other organic fertilizers
1374	kisan sewa kendra Email: Manoharyadav992738@gmail.com	U S Nagar	Veerpur Road Mahuwakhera, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1375	APNI CHAKKI Email: GPC.RDR51@GMAIL.COM	U S Nagar	VILLAGE TURKA TISSOR, SITARGANJ, Udham Singh Nagar	MICRO	Flour milling
1376	VAANI WHEAT INDUSTRIES Email: paawanbatra@gmail.com	U S Nagar	TANAKPUR ROAD, NEAR OLD SBI, KHATIMA, Udham Singh Nagar	MICRO	Flour milling
1377	Jai Kisan Krishi seva kendra Email: baljeetsonu685@gmail.com	U S Nagar	Gadarpur Road Sakeniya, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1378	AASSHIRWAAD RICE MILL Email: pavankumarstg554@gmail.com	U S Nagar	VILL-DHYANPUR NAGLA, PO- NANAKMATTA, DISTT. U.S.NAGAR (UTTARAKHAND)	SMALL	Rice milling
1379	K G N Fertilizer & Pesticide Email: kayumabdul149@gmail.com	U S Nagar	Gulariya Kashipur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1380	Saurabh Traders Email: arunsinghal113@gmail.com	U S Nagar	Gurudwara Road Nanakmatta, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1381	Biswas Khad Bhandar Email: kb32553@gmail.com	U S Nagar	Arvind Nagar Skatifarm, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1382	Saini Enterprises Email: jk6060429@gmail.com	U S Nagar	Saini Bhawan Jagathnathpur Kashipur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1383	Pradha Industries Ltd. Email: info.pradha@gmail.com	U S Nagar	Room No. 7, Ground floor, Opp. Radha Swami Satsang Bhawan, Darau Road, Sirola Kala, Kichha, Udham Singh Nagar	MICRO	Wholesale of fertilizers and agrochemical products
1384	M/s Jay Ambey Traders Email: himanshu@edscience.org	U S Nagar	Village- Nakatpura, Sitarganj, Tehsil-Sitarganj, Udham Singh Nagar, Uttarakhand - 262405	SMALL	Rice milling
1385	Uday Traders Email: udaytradersram@gmail.com	U S Nagar	Naugaonthagoo Khatima, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1386	GAMA ORGANOMED PLUS PRIVATE LIMITED Email: gamaplus2006@gmail.com	U S Nagar	Gali no.7 Singh Colony Rudrapur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1387	Shri Satguru Fertilizers Seed & Feed Store Email: shubhamshukija@gmail.com	U S Nagar	Chakauni Kuraiya, Udham Singh Nagar, Uttarakhand Pin-263148 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1388	M/s Krishna Traders Email: Krishnatraders3692@gmail.com	U S Nagar	BARA, KICCHA ROAD, BARA, Udham Singh Nagar, Uttarakhand, 263148 Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1389	Baba Deep Singh Fertilizers & Agro Seeds Email: caaardr17@gmail.com	U S Nagar	159, Village- Baanskhera Khurd Aanshik, Kashipur, Udham Singh Nagar, Uttarakhand - 244713	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1390	RAMESH & SON'S AGRICULTURAL SERVICE CENTER Email: RGBROTHERSASSOCIATES02@GMAIL.COM	U S Nagar	VILLAGE BASKHERA KHURD KASHIPUR, UDHAM SINGH NAGAR UTTARAKHAND 244713	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1391	Gurukripa Atta Chakki Email: camohit287@gmail.com	U S Nagar		MICRO	Flour milling
1392	Kashipur Krishi Utpadan Avm Rasayan Vipran Sahkari Samiti Ltd Email: nikkichoudhary257@gmail.com	U S Nagar	Sankhera Kashipur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1393	Gujarat Crop Chemicals (India) Email: arvindsaini98756@gmail.com	U S Nagar	C/o Krishna Fertilizer Sakainiya Mode Gadarpur, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1394	SAINI PESTICIDES Email: Premusn1983@gmail.com	U S Nagar	WARD NO 04 NAGARPANCHYAT MAHUWADABRA, Udham Singh Nagar	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1395	Neelkanth Flour Minor Industry Email: nautiyalkartikeytyres@gmail.com	Uttarkashi		MICRO	Flour milling
1396	jungle engineers private limited Email: erbrahumdevgoyal@gmail.com	Uttarkashi	Vangaon	SMALL	Growing of edible nuts (almonds, cashew nuts, chestnuts, hazelnuts pistachios, walnuts and other nuts)
1397	Aarav grading and packing center Email: aravgradingpack@gmail.com	Uttarkashi	Vill. Dagoli [barnali] P.O. tikochi teh. mori dist. Uttarkashi	SMALL	Growing of apples
1398	VINOD SEB GRADING MAKUDI Email: vinodrawatmakudi@gmail.com	Uttarkashi	VILL MAKUDI P O TIKOCHI TEHSIL MORI DISTT UTTARKASHI 249185	MICRO	Preparation of crops for primary markets, i.e. cleaning, trimming, grading, disinfecting
1399	Juwantha Apple Orchard Email: juwantha124@gmail.com	Uttarkashi	Vill Makhna, Tehsil Purola, Distt. UttarKashi	MICRO	Growing of apples
1400	RANA AATA CHAKKI Email: ranaajveer776@gmail.com	Uttarkashi	VILLAGE DANDA GAON TEHSIL MORI Uttarkashi	MICRO	Flour milling
1401	Himalayan Enterprise Email: awadhes.h.alliance@gmail.com	Uttarkashi	Garampani,Gawana Plot no. A5& B13 Uttarkashi,Uttarakhand	MICRO	Grinding and processing of spices
1402	M/S MOHAN NAMKEEN INDUSTRY Email: rammohansinghrawatuttarkashi@gmail.com	Uttarkashi	MINI INDUSTRIAL ESTATE GAWANA GANESHPUR, Uttarkashi	MICRO	Manufacture of papads, appalam and similar food products
1403	Plantation Of Apple Orchard Email: sudakchhinasundriyal@gmail.com	Uttarkashi	Kyarkutti Naugaon Syuri Moter Marg, Uttarkashi	MICRO	Growing of apples
1404	RICE MILL Email: manojkumarrna@gmail.com	Uttarkashi		MICRO	Rice milling
1405	BHAWANI GANPATI PVT LTD Email: bhuwanjosshi200@gmail.com	Tehri Garhwal	VILLAGE SATAGAD BANSI	MICRO	Grinding and processing of spices
1406	R D DHAAN MILLS Email: taxyog2@gmail.com	Tehri Garhwal		SMALL	Rice milling
1407	STERLING FARMS Email: sterlingfarmsuk@gmail.com	Tehri Garhwal	Gram Sripur, Patti Saklana Near Kumalda Village	SMALL	Growing of mushrooms and truffles
1408	GAVI FOODS Email: garg.vibhu12@gmail.com	Tehri Garhwal	Tehri Club and Resort, Ntt-chamba road, Tehri Garhwal	SMALL	Growing of mushrooms and truffles
1409	AAKANSHA ORGANIC Email: aakanshaorganic@gmail.com	Tehri Garhwal	Village Manjari, Tehsil Ghansali	MICRO	Growing of perennial and non-perennial spices and aromatic crops
1410	Adhiroha Email: adhiroha@gmail.com	Tehri Garhwal	Omkarananda Ram Mandir, Malli Ghugtyani, Tapovan Rishikesh	MICRO	Growing of other cereals
1411	Agri Business Growth Centre Email: gkss2019@gmail.com	Tehri Garhwal		MICRO	Other post harvest crop activities, n.e.c.
1412	Surkanda Forest View Mushroom Cultivation and Procecing Unit Email: aca3infravision@gmail.com	Tehri Garhwal	Vill- Dang, Patti- Gusain, P.O.- Bangiyal, Distt- Tehri Garhwal, Uttarakhand	MICRO	Growing of mushrooms and truffles
1413	Shuchi foods and Mushrooms Email: monikapanwar3333@gmail.com	Tehri Garhwal	Rishikesh road,Near petrol pump, Nagni Tehri	MICRO	Growing of mushrooms and truffles
1414	Bio Nutraceuticops Pvt Ltd Email: dinesh@bionutraceuticops.com	Tehri Garhwal	Kokhliyal Gaon, Chamma Tehri Garhwal - 249145 Uttarakhand	SMALL	Growing of mushrooms and truffles
1415	NEGI KHAD BEEJ BHANDAR Email: riturajsingh8126@gmail.com	Tehri Garhwal	CHAMIYALA ROAD GHANSALI, Tehri	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1416	CHAUHAN BEEJ KHAD RASAYAN BHANDAR Email: vc0333426@gmail.com	Tehri Garhwal	GAJA MAIN MARKET, DEVPRAYAG ROAD, TEHRI GARHWAL	SMALL	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1417	Jai Sai Food & Beverages Pvt Ltd Email: kumar_amit1977@rediffmail.com	Pauri garhwal	Kotdwar	SMALL	Manufacture of other non-alcoholic beverages n.e.c.
1418	TEJAS OIL COMPANY PVT LTD Email: kumar_amit1977@rediffmail.com	Pauri garhwal	Sigaddi Growth Center Kotdwar	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
1419	glycine max international Email: gmifood@gmail.com	Pauri garhwal	Sigaddi	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
1420	Srinithi Industries Email: srinithiindustries@gmail.com	Pauri garhwal	IIE kotdwar	MICRO	Other post harvest crop activities, n.e.c.
1421	TODAYS INDIA SNACKS PRIVATE LIMITED Email: todaysindiasnacks@gmail.com	Pauri garhwal	Jassodarpur Kotdwar	SMALL	Manufacture of papads, appalam and similar food products
1422	Dinesh Chand Dhyani Email: dcdhyani68@gmail.com	Pauri garhwal	SIDC Jashodharpur	SMALL	Flour milling
1423	Naturorganics Email: naturorganics@gmail.com	Pauri garhwal	vill ulyani, meldhaar patti, po chaukhal block bironkhaal	SMALL	Other grain milling and processing n.e.c.
1424	Surmount Agro Foods Private Limited Email: ashishranamsc@yahoo.com	Pauri garhwal	B 12 SIGADDI GROWTH CENTER KOTDWARA UK	SMALL	Manufacture of containers such as tins and cans for food products and boxes
1425	SHRI DEVBHUMI UTTARAKHAND MASALA LAGHU UDYOG Email: yudhbirsingh121@gmail.com	Pauri garhwal	Bhandari Complex Kala Road Srinagar Garhwal	MICRO	Grain milling other than wheat, rice and dal
1426	Ms Brahm Dutt Email: msbrahmdutt@gmail.com	Pauri garhwal	Kotdwar	MICRO	Bee-keeping and production of honey and beeswax
1427	YOGI ATTA CHAKKI Email: mayanksati123@gmail.com	Pauri garhwal	KOTDWARA	MICRO	Flour milling
1428	CHAUNDKOT MUSHROOM UDYOG Email: deepaksinghc1991@gmail.com	Pauri garhwal	Village- Malethi Tehsil- Satpuli District- Pauri Garhwal	MICRO	Growing of mushrooms and truffles
1429	Arceli Email: shaival256@gmail.com	Pauri garhwal	Satpuli	SMALL	Growing of other oil seeds
1430	Himalayan Organic Agro Products LLP Email: hjadli@gmail.com	Pauri garhwal	C/o Milan Panday, Village Shivpur, Kotdwar	MICRO	Manufacture of papads, appalam and similar food products
1431	SWADESHI ORGANIC Email: swati123p@gmail.com	Pauri garhwal	khata no. 9, khasra no 14, ganga bhogpur talla, block yamkeshwar, Pauri Garhwal	SMALL	Preserving in sugar of fruit, nuts, fruit peels and other parts of plants
1432	HIMALAYAN FOOD INDUSTRY Email: shubhamkandwal306@gmail.com	Pauri garhwal	LALPUR GHARAT ROAD, KOTDWARA-246149 Pauri	SMALL	Manufacture of flour mixes and prepared blended flour and dough for bread, cakes, biscuits
1433	AAPNOO PUNGUDH Email: dnnplastics@gmail.com	Pauri garhwal	KHATONI NO. 434, VILLAGE KIMSERA, DUGADDA, DIST. PAURI GARHWAL UTTARAKHAND	MICRO	Growing of other flowers, including production of cut flowers, flower buds and flower seeds
1434	Neha Food Products Email: nehafood72@gmail.com	Pauri garhwal	Plot NO-F-9 SIDC Jashodharpur Kotdwar Pauri	MICRO	Manufacture of papads, appalam and similar food products
1435	SHREE KEDARNATH OIL INDUSTRIES Email: anuradhaol2021@gmail.com	Pauri garhwal	D15 INDUSTRIAL AREA BALBHADRAPUR KOTDWARA, Pauri	SMALL	Manufacture of other vegetable oil, animal oil and fats n.e.c
1436	Krishi Sampada Email: krishisampada@rediffmail.com	Pauri garhwal	Bhandari Complex Kala Road Srinagar Garhwal Pauri Garhwal Pauri	MICRO	Agricultural activities on a fee or contract basis
1437	hariom laghu udyog Email: Gari.phr@gmail.com	Almora	Ganai Chaukhutia, Almora	MICRO	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
1438	Makhan Bhog Aata Email: khatimobiletkt@gmail.com	Almora	Village- Papne- Kothar, Post- Tarikhet, Tahsil- Ranikhet, District-Almora- State- Uttrakhand-263663 Almora	SMALL	Flour milling
1439	Jagnath Krishi beej Udpadak sangh Email: jagnath20015@gmail.com	Almora	Village Falyat PO Danya Almora	MICRO	Seed processing for propagation
1440	Jhinkwan vidyut atta chakki Email: vikramsingh21972@gmail.com	Chamoli	Nagar palika Bhawan, Gopeshwar, Chamoli	MICRO	Flour milling
1441	Totemic Foods OPC Private Limited Email: naveenkandwal89@gmail.com	Chamoli	mini industrial area village kaleshwar district chamoli uttarakhand	MICRO	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
1442	tapovan food factory Email: charitdimri@gmail.com	Chamoli	mini industrial area , jaikandi, kaleshwar	SMALL	Manufacture of flour mixes and prepared blended flour and dough for bread, cakes, biscuits
1443	Garhwali Natural Food & Fruits Processing unit Email: naturalfruitprocessing79@gmail.com	Chamoli	PLOT NO. 17 ,JAYKHANDI KALESHWAR ,CHAMOLI	MICRO	Canning of fruits and vegetables
1444	SHANTI INDUSTRIES Email: riceandflour@gmail.com	Champawat	Village- Gyan Khera, Khatima road, Tanakpur	SMALL	Rice milling
1445	Shree Hari Industries Email: vedantaherbs@gmail.com	Champawat	Railway Station Road, Nr. Hotel Parwat, Tanakpur, Dist -Champawat, Uttrakhand	SMALL	Rice milling
1446	mangal foods Email: umangagrawal.22@gmail.com	Champawat	Gyan Khera Tanakpur	SMALL	Rice milling
1447	WHOLESOME FOODS Email: paveeraheja@gmail.com	Champawat	KHET 114, VILLAGE GUDMI	SMALL	Flour milling
1448	MALKUNA SPICES Email: mailkunaspices4802@gmail.com	Champawat	village Dansli post lohaghat	MICRO	Grinding and processing of spices
1449	Shivaey Enterprises Email: shivaey.enterprises@gmail.com	Champawat	KH 114 VILLAGE GUDMI	SMALL	Other semi-processed, processed or instant foods n.e.c.
1450	Natraj Foods Email: natrajfoods07@gmail.com	Champawat	WARD NO. 2, RAILWAY STATION ROAD, TANAKPUR DIST. CHAMPAWAT UTTARAKHAND-262309. LANDMARK- NR. HOTEL PARVAT	SMALL	Flour milling
1451	NANDHAUR AGRO PRODUCTS Email: shashankgoel.58@gmail.com	Champawat	KAKRALI GATE, TANAKPUR Champawat	SMALL	Rice milling

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1452	M/s KALKHUDIYA AGENCIES Email: himeshkalkhuriya@gmail.com	Champawat	KHETIKHAN ROAD, CHAMPAWAT Champawat	SMALL	Flour milling
1453	M/s Ganpati Flour Mill Email: ganpatiplacehotel@gmail.com	Champawat	Vill Chauraseti Post Champawat Dist Champawat 262523	MICRO	Flour milling
1454	BAHUDESHIYA CHETRIYA SADHAN SAHKRI SAMITI LIMITED Email: dnverma125@gmail.com	Champawat	BAHUDESHIYA CHETRIYA SADHAN SAHKRI SAMITI LIMITED. Tanakpur Distict Champawat	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1455	MAHAKAL KRISHI SEWA KENDRA Email: ysudhanshu59@gmail.com	Champawat	NEAR LAXMI DRUG HOUSE NEAR PILIBHIT CHUNGI CHURAHA TANKAPUR DISTT CHAMPAWAT UTTARAKHAND PIN 262309	MICRO	Retail sale of seeds, fertilisers, pesticides, machinery equipments and hand tools
1456	Prakash Laghu Udyog Email: pp1423670@gmail.com	Bageshwar	Bageshwar	MICRO	Growing of wheat
1457	Shankar Aata Chakki Email: shankarsingh101980@gmail.com	Bageshwar	Vill Gheti	MICRO	Growing of wheat
1458	Umesh Daliya Unit Email: umesh7886@gmail.com	Bageshwar	Mandalsera	MICRO	Growing of wheat
1459	Laxman Singh Email: rahulkoranga88@gmail.com	Bageshwar	Sali Gawon	MICRO	Flour milling
1460	Krishna Chandra Tiwari Email: kt059480@gmail.com	Bageshwar	Vill Garser Post Baijnath	MICRO	Flour milling
1461	Puran Aata Chakki Email: rajufarswan1982@gmail.com	Bageshwar	Village/Post -Payyan	MICRO	Flour milling
1462	Bhakuni Flour mill Email: singhsws91@gmail.com	Bageshwar	Vill jinkhola PO Matina	MICRO	Flour milling
1463	Ganga Laghu Udhog Email: khadak061@gmail.com	Bageshwar	Vill Simar PO Gagrigol	MICRO	Grain milling other than wheat, rice and dal
1464	Maa Bhagwati Aata Chakki Email: navingiri1985@gmail.com	Bageshwar	Vill Gwad Pajena PO Dangoli	MICRO	Flour milling
1465	Parihar Aata Chakki & Masala Udhog Email: ganeshparihar15@gmail.com	Bageshwar	Vill Riyuni Lakhmar PO Gagrigol Distt Bageshwar	MICRO	Flour milling
1466	Pindaris nature Email: tulsidevi603@gmail.com	Bageshwar	Tok Uniya Vill Surag kapkot Dist Bageshwar	MICRO	Growing of pulses (dal) and other leguminous crops such as peas and beans, not used as oilseeds
1467	Being Chips Email: pbhawana303@gmail.com	Bageshwar	Vill Manura Po Garigol 263641	MICRO	Manufacture of potato flour & meals and prepared meals of vegetables
1468	Girish Ata Chakki Email: ramduttPandey315@gmail.com	Bageshwar	Vill Chhati Post Udera	MICRO	Flour milling
1469	Jay Maa Bhagwati Flour mill Email: bora11raju@gmail.com	Bageshwar	Vill kot Tulari PO Dyonai	MICRO	Flour milling
1470	Khati Flour Mill Email: gokulsingh080h@gmail.com	Bageshwar	Add Vill Kathayatvada PO Bageshwar	MICRO	Flour milling
1471	Jai Hari Nath Packaging Email: kripalchandrakala@gmail.com	Bageshwar	Bageshwar	MICRO	Growing of asparagus, cabbages, cauliflower, broccoli, lettuce, chicory, spinach and other leafy or stem vegetables
1472	GARUR Email: vishal.zealotagritech@gmail.com	Bageshwar	Bageshwar	MICRO	Grinding and processing of spices
1473	JAI GOLU JI PACKAGING PRIVATE LIMITED Email: jgoluji12345@gmail.com	Bageshwar	Bageshwar	MICRO	Packaging activities
1474	Jhali Laghu Udyog Email: singhyashveer590@gmail.com	Rudraprayag	Vill. & PO- Musa dung	MICRO	Flour milling
1475	RUDRA FOOD PROCESSING INDUSTRY Email: devendrasbisht@gmail.com	Rudraprayag	mini industrial state bhatwarishain	SMALL	Grinding and processing of spices
1476	mahabeer singh Email: tilwara234@gmail.com	Rudraprayag	Village Jakhniyal post timli rudraprayag	MICRO	Growing of wheat
1477	Gunsola Foods & Spices Email: gunsola07@gmail.com	Rudraprayag	village tuneta tehsil jakholi rudrapryag Rudraprayag	SMALL	Grinding and processing of spices
1478	Ritu Atta Chakki Email: dansinghmehta2016@gmail.com	Pithoragarh	dhurchu pithoragarh	MICRO	Flour milling
1479	JOSHI AATA CHAKKI Email: subhashjoshipith@gmail.com	Pithoragarh		MICRO	Flour milling
1480	CHUPHAL AATA CHAKKI AND RICE WHEELERS Email: tribhuwan.chuphal2015@gmail.com	Pithoragarh	CHUPRAKHET, DIDIHAT	MICRO	Flour milling
1481	ganpati Bakers Email: anilmahrapth@gmail.com	Pithoragarh	siltham	MICRO	Manufacture of flour mixes and prepared blended flour and dough for bread, cakes, biscuits
1482	pooja masala udyog Email: prasadjagdish8888@gmail.com	Pithoragarh	talla tharkote pithoragarh	MICRO	Grinding and processing of spices
1483	jagdish atta & masala udyog Email: jagdishkohli.ot@gmail.com	Pithoragarh	takana Pithoragarh	MICRO	Grinding and processing of spices
1484	kunwar atta chakki Email: manojair01@gmail.com	Pithoragarh	nisni himtar	MICRO	Flour milling
1485	BEST BAKERY Email: bawasthi350@gmail.com	Pithoragarh	OGLA	MICRO	Manufacture of flour mixes and prepared blended flour and dough for bread, cakes, biscuits
1486	pathak flour mill Email: pathakflourmill@gmail.com	Pithoragarh	gic road berinag	MICRO	Flour milling
1487	Pratishtha Mushroom Production & Packaging Unit Email: ashok72bhandari@gmail.com	Pithoragarh	Tarigaon	MICRO	Growing of mushrooms and truffles
1488	Punetha Masala & Atta Udhog Email: imbhuwan111@gmail.com	Pithoragarh	Naya Bazar	MICRO	Grinding and processing of spices

Medium, Small & Micro Scale Agribusiness Industries of Uttarakhand (Registered in 2016-21)

No	Name of Enterprise & Email Address	District	Location	Category	Nature of Enterprise/Product
1489	KRISHNA ATTA CHAKKI Email: rakeshpith74@gmail.com	Pithoragarh	DHARAMSHALA LINE PITHORAGARH	MICRO	Flour milling
1490	Chand Soya Milk Paneer Email: deepakchand59.dc@gmail.com	Pithoragarh	Jajardewal Panda	MICRO	Growing of soya bean oil seed
1491	MS DEVBHUMI RASGANGA Email: nareshjoshi0072@gmail.com	Pithoragarh	JAJARDEWAL	SMALL	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
1492	Chand Atta Chakki Email: hchand661@gmail.com	Pithoragarh	New Rai Shiv Vihar Coloni Pithoragarh	MICRO	Growing of wheat
1493	Deepika Masala Udtog Email: tejpalb88@gmail.com	Pithoragarh	Pithoragarh	MICRO	Grinding and processing of spices
1494	Rajendra Enterprises Email: rajsingh66452@gmail.com	Pithoragarh	Pithoragarh	MICRO	Sun-drying of fruit and vegetables
1495	Rawat Atta Chakki Email: diwansingh262530@gmail.com	Pithoragarh	Vill- Bunga, Jakh Puran Pithoragarh	MICRO	Manufacture of potato flour & meals and prepared meals of vegetables
1496	M/s Shri NARAYAN INDUSTRIES Email: deephariom@gmail.com	Pithoragarh	Pithoragarh	SMALL	Flour milling
1497	Maa Bhagwati Chakki Fress Atta Email: ms2394012@gmail.com	Pithoragarh	Vill- Madkot, Teh- Bangapani Pithoragarh	MICRO	Flour milling
1498	M/s Jai Kali Mushroom Email: lalit.upreti2020@yahoo.com	Pithoragarh	Ward- kunjanpur, po- Gangolihat Pithoragarh	MICRO	Growing of mushrooms and truffles
1499	Digari Atta Chakki Email: digovindsingh223@gmail.com	Pithoragarh	Vill- Sann Pali, Po- Kanalichhina Pithoragarh	MICRO	Flour milling
1500	Kishan Atta Chakki Email: ka6900993@gmail.com	Pithoragarh	Pithoragarh	MICRO	Flour milling
1501	M/s Masala Chakki Email: harishdasila5@gmail.com	Pithoragarh	Vill- Charsula, Aincholi Pithoragarh	MICRO	Grinding and processing of spices
1502	M/S CHAND MASALA CHAKKI Email: chandbhagwan112@gmail.com	Pithoragarh	SUWAKOT WADDA, Pithoragarh	MICRO	Grinding and processing of spices
1503	KAILASH ATTA CHAKKI Email: kailashchand150680@gmail.com	Pithoragarh	KANRI GETI GADA JHULAGHAT, Pithoragarh	MICRO	Flour milling
1504	M/s Bhagwan Singh Floor Mill Email: bsbhandari93@gmail.com	Pithoragarh	Grinding of Wheat Pithoragarh	MICRO	Flour milling
1505	M/s Pithoragarh Cold Storage Plant Email: rajabhatter20@gmail.com	Pithoragarh	Near- Bin Block, Bin Pithoragarh	SMALL	Warehousing of refrigerated (cold storage)
1506	MS BHATT ATTA CHAKKI Email: sanjaybhatterpith91@gmail.com	Pithoragarh	VILL AND PO JAKH Dist Pithoragarh	MICRO	Flour milling
1507	M/s Dhami Atta Chakki Email: vinodsinghhami43@gmail.com	Pithoragarh	Vill- RanthiGaon, Boragaon, Dharchula Pithoragarh	MICRO	Flour milling
1508	TWISTER JUICE AND BEVERAGE Email: mahendrasinghpith1987@gmail.com	Pithoragarh	CHANCHALPUR LOHAKOTE DEWALTHAL Dist Pithoragarh	MICRO	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
1509	Maa Bhagwati Atta Chakki Email: poojamahar389@gmail.com	Pithoragarh	Vill- Naini Sani Pithoragarh	MICRO	Flour milling
1510	DEWALTHAL ORGANIC FRUITS AND SPICES PROCESSING CLUSTER Email: bhawanideopa84@gmail.com	Pithoragarh	VILL LOHAKOTE , DEWALTHAL, Pithoragarh	SMALL	Manufacture of sauces, jams, jellies and marmalades
1511	MAA KRIPA ATTA CHAKKI Email: pranjaljoshipith@gmail.com	Pithoragarh	NEAR KAMALAPATI BHAWAN OLD POST OFFICE TAKANA, Pithoragarh	MICRO	Flour milling

Source : Directorate of Industries, Uttarakhand

Attachment 3.7.1 Optimal Climatic Requirement of Fruits and Vegetables for Selected Crops:

Sr. No.	Crop	Temperature			Chilling Requirement (hr)	Rain/water / requirement(cm)	Reference
		Min (°C)	Max (°C)	Optimum (°C)			
1.	Peach	0°C 1.4	40°C (during summer) >16°C During winter		200 to 850°C of less than 7°C, 2.5–9.1 °C, most effective Temp.; (1.5–2.4°C and 9.2–12.4°C) = half, <1.4 °C and 12.5–15.9 °C) = 0; >16 °C=negative		Production Technology of Peach, Plum and Apricot in India, DOI, <i>Bhende Siddhesh Shamrao: Samiksha S.</i> http://dx.doi.org/10.5772/intechopen.92884 . Peach cultivation-family-origin-unsuitable-climate-and-soil/24708, Fadón et al., Agronomy https://www.yourarticlelibrary.com/cultivation/peach-
2.	Litchi	0°C	40.5 °C	32°C min. temperature of 10°C from December to February; 38°C from April to June	Nil	600-800 mm A dry climate, free from rains for about 2 months before flowering induces flower bud differentiation	Singh H.P. and Babita S. https://www.fao.org/3/ac684e/ac684e08.htm National Horticulture Board, http://nhb.gov.in/model-project-reports/Horticulture%20Crops/Litchi/Litchi1.htm s
3.	Citrus/ Sweet Orange	1°C		12- 38°C	11-15°C; or more number of hours at 11-15°C are directly associated with bud intensity.	1000-1500 mm rainfall	Flower Bud Induction of Sweet Orange Trees: Effect of Low Temperatures, Crop Load, and Bud Age, J. AMER. SOC. HORT. SCI. 129(2):158– 164. 2004. CITRUS SINENSIS MONOGRAPH, https://www.collegioboliviar.edu.co/garden/wp-content/uploads/2017/06/VPerea-Citrussinensis-2017.pdf
4.	Apple	<2.2°C Flower killing		average summer temperature should be around 21-24 °C	1000 - 1500°C of less than 7°C	1000-1250mm	National Horticulture Board, http://nhb.gov.in/pdf/fruits/apple/app012.pdf National Horticulture Board, http://nhb.gov.in/repository_files/apple/APPLE.htm NIRANJAN SINGH, D P SHARMA and HUKAM CHAND, Current World Environment Vol. 11(1), 251-259 (2016)
5.	Plum			18-23°C	800–1000°C of less than 7°C	90–110mm	ICAR, Handbook of Horticulture, New Delhi, India. Production Technology of Peach, Plum and Apricot in India, DOI: http://dx.doi.org/10.5772/intechopen.92884
6.	Walnut	-11°C	38°C	25-30 °C	700°C for Payne and 1500°C and Franquette cultivars (<7°C)	760- 800 mm	ICAR, Handbook of Horticulture, New Delhi, India. Ahmad, N & Singh, Shyam & Bakshi, Megna & Mir, Hidayatullah. (2018). Walnut, Fruit Production in India , Srikant, P. https://www.agricultureinindia.net/grow/walnut-grow/growingwalnuts-how-to-growwalnuts-climatepropagationharvesting-uses/20010
7.	Kiwifruit	-9 to -12°C	>35°C	7.5°C	800–1000 (<7°C)	1200-1500 mm	ICAR, Handbook of Horticulture, New Delhi, India.
8.	Tomato	5 °C	32°C	15-27°C		400 to 600 mm	ICAR, Handbook of Horticulture, New Delhi, India. FAO, https://www.fao.org/1-and-water/databasesand-software/cropinformation/tomato/en/

Sr. No.	Crop	Temperature			Chilling Requirement (hr)	Rain/water / requirement(cm)	Reference
		Min (°C)	Max (°C)	Optimum (°C)			
9.	Potato	0°C	30–35°C	15-25°C		500 to 700 mm	ICAR, Handbook of Horticulture, New Delhi, India. Al Mahmud, A.; Alam, M.J.; Kundu, B.C.; Skalicky, M.; Rahman, M.M.; Rahaman, E.H.M.S.; Sultana, M.; Molla, M.S.H.; Hossain, A.; ElShehawi, A.M.; et al. Selection of Suitable Potato Genotypes for Late-Sown Heat Stress Conditions Based on Field Performance and Stress Tolerance Indices. Sustainability 2021, 13, 2770. https://doi.org/10.3390/su13052770
10.	Pea	5°C	30°C	13-18°C; 22°C +/- for germination			ICAR, Handbook of Horticulture, New Delhi, India.
11.	Garlic	0°C	27°C	13-24°C for germination	Critical day length for bulbing is 12 hr	900-1000 mm	ICAR, Handbook of Horticulture, New Delhi, India. Yogesh P Khade, A Thangasamy and Kalyani Gorrepati Garlic production technology
12.	Ginger	0°C	32°C	19 - 28°C, RH-70-90%. for germination	warm and humid climate	1500-3000 mm	Kaufman S, 2016. Zingiber officinale (ginger). Invasive Species Compendium. Wallingford, UK: CABI. DOI:10.1079/ISC.57537.20203482903 Whiley, 1974. ICAR, Handbook of Horticulture, New Delhi, India.
13.	Turmeric	10°C	41 to 45°C	20-35°C for germination		1500 mm	Jayashree E, Kandiannan K, Prasath D, Sasikumar B, Senthil Kumar CM, Srinivasan V, Suseela Bhai R and Thankamani CK, ICAR- Indian Institute of Spices Research Kozhikode, Kerala ICAR, Handbook of Horticulture, New Delhi, India.

Source: JICA Survey Team

Attachment 3.7.2 Collected Photos of Influences by Climate Change in Temperate Fruits and Vegetables



Heavy rains and wind in Kumaon hills cause massive damage to peach fruits, DehradunNews–TimesofIndia



Apple farmers lose most of their crop as rain lash in Kumaon, fruit prices plummet Dehradun News-Times of India



Cherry fruit cracking OSU Extension Catalogue - Oregon State University



Fruit drops in citrus due to high temperature and moisture stress



Cracked litchi due to high temperature and low humidity



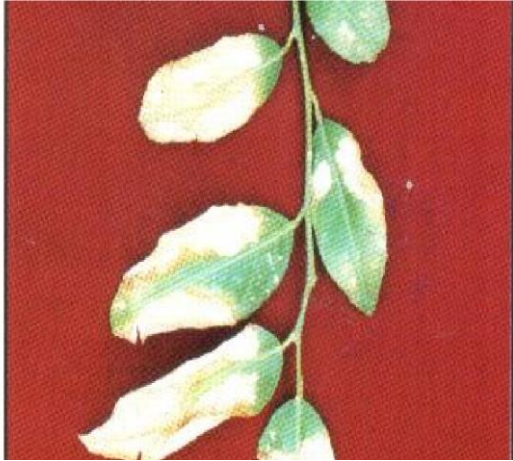
Injured citrus fruits by heat



Damage of fruit plants due to frost occurrence



Sun burn and poor colour development due to higher temperature in apple



Heat injury in citrus leaves



Damage in papaya due to late frost



A woman shows apples that had fallen after heavy snow fall before harvesting time: Source-Hindustantimes.com



Snow falls in Kashmir damages apple orchards: India News-India TV



Fruit cracking in tomato due to high rainfall and moisture stress at harvesting season

Source: Collected by JICA Survey Team



Sun burn in Potato due to high temperature

Attachment 3.7.3 Impact of Different Climatic Parameters on Crops & Agriculture System

1. Impact of change in temperature on growth and development:

Plant response to temperatures has been very complex. The responses are growth stage and tissue specific and greatly influenced by the management. The studies indicated that the effect of temperature ranged from reduced photosynthetic rates, increased water use efficiency, hastening or delaying phenological events to altering source-sink balance and reduced yield (Tables 1, 2). The severity of effect of temperature extreme depends on its coincidence with the sensitive stage of the crop. In general, seedling stage, flowering and fruit set stages are very sensitive to such extreme temperatures. The temperature threshold for tomato fruit maturation is reported to be 22 to 25°C, while for fruit set it is lower than 26°C. The optimal temperature for fruit size is reported to be 17-18°C. Similarly, optimal temperature range for citrus flowering, fruit-set and fruit growth are 10-27°C, 22-27°C and 20-33°C, respectively. The temperature in excess of 38°C affects citrus fruit set and temperature in excess of 48°C causes a 50% loss in yield due to sun burn and fruit drop. The temperature optimum for dry bean yield is 23-24°C.

Warmer temperatures during dormant season hastens flowering in temperate fruits making them exposed to spring frost resulting in fruit damage. Higher temperatures caused more twig drying in fruited plants than in un-fruited ones. Losses were also very significant in other crops, such as mustard, peas, tomatoes, onion, garlic, and other vegetable and fruit crops. High temperature and moisture stress resulted in sun burn and cracking in apples, apricot, cherries and litchi, dehydration injury to panicles and low fruit set in mango. High temperatures reduced marketable set grade potato tuber yield to the extent of 10-20%. Many such examples exist for crop loss due to weather aberrations due to increased climatic variability. However, one classical example of impact of climate change on a horticultural crop is shift in apple cultivation from 1,250 m above mean sea level to 2,500 m above mean sea level in Himachal Pradesh, partly attributed to non-fulfilment of chilling requirement for apple due to rise in temperature (Chadha, 2019).

Table 1 Effect of elevated temperature on the growth and yield of some horticultural crops

Crop	High temperature
Apple	Non-fulfillment of chilling requirement- delayed foliation and reduced fruit set
Potato	Affected tuber initiation; yield loss 10-20%; black heart in tuber (dark-grey to black discoloration)
Tomato	>30°C caused flower drop, ovule abortion, poor pollen production and viability, and reduced fruit set. Sunburn affects lycopene synthesis causing yellow areas
Litchi	Flowering affected at high day night temperature (30/25°C). More number of female flowers produced at an average temperature of 18°C. Temperatures below 23°C decrease hermaphrodite flowers
Temperate Fruit crops	Insufficient chilling delayed foliation, reduce fruit set, increased buttoning

Source: Chadha, 2019

Table 2 Effect of low temperature on the growth and yield of some horticultural crops

Crop	Low temperature/frost
Tomato	Low growth at temperatures <12°C and chill injury
Potato	Frost injury, 10-50% yield reduction
Pome and stone fruits	Snowfall coinciding flowering affected yield and quality in Kashmir

Source: Chadha, 2019

Table 3 Changes in temperature and precipitation vis-à-vis apple acreage in Himalayan state during 1980-2010

State	Period	Average Annual Temp. (°C)	Rise in Temp (°C) (1980-2008)	Precipitation (mm)	Area (000 ha)	Approx. new area covered under higher elevations
J&K Ladakh	1980-1985	13.01	1.45-2.32 0.5-1 (S) (W)	726	63.09	-
	1986-1990	13.58		817	66.85	-
	1991-1995	13.12		784	71.33	-
	1996-2000	13.91		585	82.18	6510
	2001-2002	14.46		682	96.34	8496
	2009-2010	13.32		763	138.19	25110
	2001-2002	-		Reduced	0.609	-
	2009-2010	-		(1973-2008)	0.836	227
Uttarakhand	1980-1985	12.40	1.51	1394	-	-
	1986-1990	11.45		1430	-	-
	1991-1995	13.69		1104	52.75	-

State	Period	Average Annual Temp. (°C)	Rise in Temp (°C) (1980-2008)	Precipitation (mm)	Area (000 ha)	Approx. new area covered under higher elevations
	1996-2000	13.90		1067	51.80	-
	2001-2005	13.84		935	55.98	4180
	2006-2009	13.91		1245	31.66	-24320
H.P.	1980-1985	13.03		1323	46.80	-36400
Solan/	1991-2000	13.77		1270	83.20	7000
Kangra	2001-2007	14.40		1023	90.20	-404
Mandi/Chamba/Sirmaur	1980-1985			-	953	16804
Shimla/Kullu	2005-2007			-	549	20516
Kinaur/Lahul-Spiti	1980-1985		1.37	-	12368	6433
	2005-2007			-	29172	
	1980-1985			-	30975	
	2005-2007			-	51491	
	1980-1985			-	2532	
	2005-2007			-	8965	

Source: IMF, Srinagar

2. Impact of change in rainfall and shifting timing on growth and development:

The rainfall has been one of the major factors affecting the productivity of horticultural crops. (Table 4 and 5). The rainfall amount and distribution become very important for successful production of rainfed horticultural crops. Many of the horticultural crops are sensitive to heavy rainfall events which lead to water logging. Coincidence of heavy rainfall events with flowering has deleterious effects on pollination and fruit set while when they coincide with fruit development, the yield and quality are affected. Climate is the most influencing factor for monsoon dependent Indian agriculture. The climate related aberrations have been significantly affecting the crop productivity in India. The abnormal monsoon has been affecting the productivity of kharif season crops (Chadha, 2019).

Table 4 Effect of high rainfall on the growth and yield of some horticultural crops

Crop	High rainfall
Tomatoes, cucurbits, cauliflower, etc	Flowering gets affected, flower drop, fruit drop
Citrus	Winter rains promoted vegetative flushes instead of flowering flushes

Source: Chadha, 2019

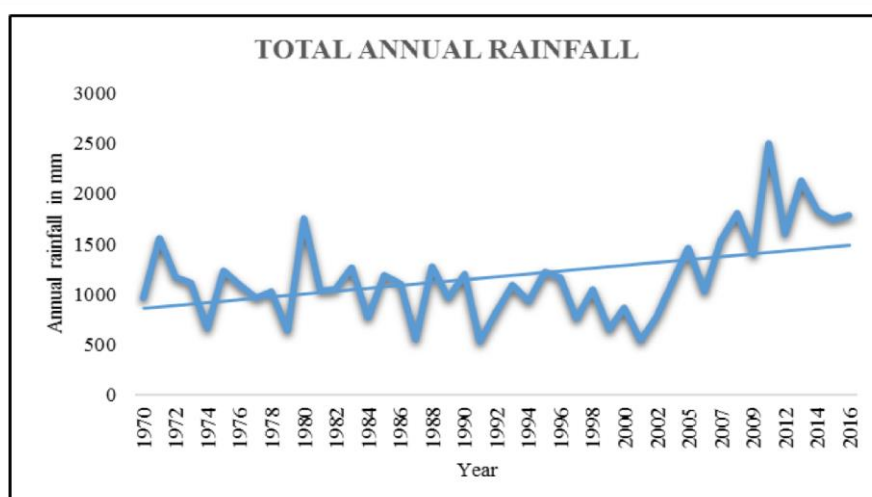
Table 5 Effect of deficit rainfall or dry spell on the growth and yield of some horticultural crops.

Crop	Rainfall deficit/dry spell
Cucurbits, beans, peas, peppers, tomatoes	Drought stress at flowering causes flower drop, affects fruit set.
Apples, apricot, cherries and litchi	Moisture stress with high temperature - sun burn and cracking
Citrus	Dry spell during flower emergence and fruit set affected flower initiation and aggravated pest (<i>Psylla</i>) incidence

Source: Chadha, 2019

Shift in monsoonal rainfall has been viewed as among the key reasons behind decreasing production of agriculture. “Rainfall isn't happening on time, sometimes it comes earlier and sometimes it's delayed,” reported a participant of FGD in Kharakiya, Bageshwar. One participant of FGD at Agora, shared; “for few years, we are experiencing rains, earlier than its original time.” Similar responses were also shared from many other places across three districts. Another aspect related to monsoonal rainfall which was mentioned as the key damaging factor for agricultural productivity, was its high intensity. For few years, many villages across the three districts experiences extreme Physical events caused due to very intense rainfall. Damages to agricultural land were reported, as the most common impact of such events. Reportedly, a sizable part of alluvial agricultural land was washed out due to extreme events of 2010, 2012 and 2013, instigated by high monsoonal rainfall. One farmer of Quiri, Pithoragarh blamed the rainfall for laundry away the fertile topsoil of his land in following words; “for last four to 5 years we witness sharp decrease in agricultural production. We work hard in farms but production remains at low end. Earlier our production was very good but now it is nothing. When the fertility of our land has been washed away then how productivity can would be improved.”

The following figure is showing annual rainfall trend from 1970 to 2016 in the Nainital district. As we can see from this graph there is fluctuations in precipitation pattern in last 30 yrs. From 2009 rainfall started increasing and in 2016 there is decline in rainfall.



Source: Indian Water Portal and Indian Meteorological Department

Figure 1 Annual Rainfall in the Nainital District (1979-2016)

3. Impact on phenology:

Time changes of different physiological activities i.e. phenology is one of the most pronounced effect of climate change (Cleland *et al.*, 2007). In temperate fruits, flower induction is deeply influenced by temperature, especially low temperature, however, strong interaction between genotype, photoperiod and temperature interactively control flowering. As per study conducted by Wolfe *et al.* (2005) there was an advance in spring phenology ranging from 2 to 8 days for the woody perennials in north-eastern USA during period 1965 to 2001 and a qualitatively consistent and similar phenology shifts with a warming trend have been reported for other mid and high-latitude regions. An earlier date of full bloom of up to 10 days was observed in apple 'Boskoop', 'Cox's Orange Pippin' and 'Golden Delicious' when comparing the last 20 years with the previous 30 years, which is less than the 14 days reported generally for Germany. Advancing trends in bloom dates of many trees indicate that dormancy breaking processes are indeed changing most likely in response to climate change.

4. Impact on dormancy and chilling requirement:

The plants use the dormancy mechanism to protect its sensitive tissue from unfavourable climatic condition. There might be alteration in the adaptability of many temperate fruit crop in the near future due to rapid climate change, and severe productivity problems might arise as well. Commercially successful cultivation of many fruit and nut trees requires the fulfillment of a winter chilling requirement, which is specific for every tree cultivar. Lack of chilling as in mild winter conditions result in abnormal pattern of bud-break and development in temperate fruit trees. Eventually, warming may affect over-winter chill requirements of temperate tree fruits and require replacement by new cultivars or species. This process ultimately results in varying crop sizes and maturity stages at the time of harvest, which can substantially reduce yield and fruit quality. Melting of ice cap in the Himalayan regions will reduce chilling effect required for the flowering of many of the horticultural crops like apple, cherry etc. For cultivars with chilling requirements above 1000 chilling hours such as apples, cherries and pears, very few locations with safe chilling levels were found to exist today, and modelling results project that virtually none will exist by mid-century (Rai *et al.*, 2015).

5. Impact on flowering and pollination:

Weather conditions during flowering and pollination and subsequent fruit growth determine the production, quantity and quality. Mild winter temperatures followed by warmer springs advanced bud burst exposing buds to frost damage in almond and apricot. In mango, low temperature (4 to 11.5°C), high humidity (>80%) and cloudy weather in January delayed panicle emergence, low temperatures during inflorescence development reduce number of perfect flowering. The perfect flowers were significantly higher in the temperature regime of around 27/13°C than in a temperature regime of around 21/4°C in mango. Minimum temperature of 14-15 °C is conducive for flowering in mango and occurrence of days with this critical temperature cause multiple flushes leading to 'recurrent flowering' and hence 'multiple harvests' of varying quality and marketability. In citrus untimely winter rains promoted vegetative flushes instead of flowering

flushes while, dry spell during flower emergence and fruit set affected flower initiation and aggravated pest (*Psylla*) incidence (Chadha, 2019).

Climate change, with a potential to affect every component of agricultural ecosystems, is reported to impact bees at various levels, including their pollinating efficiency. The changing climate scenario has contributed in significant reduction in the population of the pollinating insects. If the temperature is either very low or very high there is no fertilization, thus affecting fruit set. For fruits that are cross pollinated such as walnuts and pistachios, insufficient chilling can reduce pollination leading to reduced crop yields. The optimum temperature for pollination and fertilization in temperate fruits like apple, pear, plum, cherry etc. is between 20-25 °C. Low temperatures and rainy or foggy conditions had observed to have a negative effect during pollination in sour cherry (Zavalloni *et al.*, 2008).

According to Vedwan and Rhoades (2001) climatic changes alter the pattern of blossoming, bearing and, therefore, fruit yield and the quality of apple deteriorated under Western Himalayan condition of India. The greater rise in winter and spring (January to March) temperatures lead to earlier flowering, which coincides with the time of spring frost resulting in a remaining risk of frost damage to apple flowers. In temperate climate areas, frost can also represent the main cause of weather related damage to crops. Apple and other temperate fruit are vulnerable to spring (late) frosts. During the bloom stage, a single event with temperatures going a few degrees below zero is sufficient to damage flower buds or even kill them. While light frosts result in the deterioration of fruit quality, severe frosts threaten the harvest itself.

6. Impact of climate change on yield:

Apple productivity declined up to 1500 m above mean sea level to the tune of 40-50% due to high temperatures resulting in lack of chilling requirement and warmer summers in lower elevations resulting into shifting of apple production to higher elevation (2700 m msl). High temperature and moisture stress resulted in sun burn and cracking in apples, apricot, cherries and litchi, dehydration injury to panicles and low fruit set in mango. In potato, frost damage reduced tuber yield by 10-50% depending upon intensity and coincidence with sensitive stage, while yield loss due to high temperature was to the tune of 10-20% depending coincidence with sensitive stage. High temperatures reduced marketable grade potato tuber yield extent of 10-20%.

7. Impact of climate change on Soil factors:

Elevated CO₂ increases the activities of amylase, cellulase while decreases the soil pH, dehydrogenase and phosphatase activity as well as the soil free amino acids in the coconut seedling rhizosphere. Similarly, elevated temperature increased activities of cellulase and invertase while it decreased the activities of dehydrogenase, urease, phosphatase and amylase. It also decreased the soil respiration. In addition, high rainfall events cause severe soil erosion and loss of fertility in top soil. The soil micro flora and fauna are also influenced affecting soil fertility.

8. Impact of droughts, cold, frost and hailstorms:

Cold wave during December 2002-January 2003, caused considerable damage to horticultural crops such as mango, guava, papaya, brinjal, tomato, potato. The level of damage was more in mango (>-40%) and litchi (30-80%) orchards. It also affected the fruit crops such as guava, kinnow and ber causing reduction in size of the fruit and poor quality. Occurrence of frost during January in Rajasthan has affected cumin resulting in total crop failure. In potato, frost damage reduced tuber yield by 10-50% depending upon intensity and coincidence with sensitive stage, while yield loss due to high temperature was to the tune of 10-20% depending on coincidence with sensitive stage. In 2007-08, frost injury damaged 2009-13 period in many fruit crops, particularly mango in north-western India. Hailstorms during 2009 in Himachal Pradesh significantly affected apple yield. Sub-zero temperatures for a day in 2013 damaged mango plantations in parts of Uttar Pradesh and Uttarakhand (Chadha, 2019).

9. Impact of elevated CO₂ on growth and development:

The impacts on horticultural crops have been studied using several approaches such as open top chambers, free atmospheric CO₂ enrichment facilities as well as using the simulation models. The elevated CO₂ enhanced the growth and productivity of many horticultural crops as most of them are C3 crops (Table 6). The elevated CO₂ is

reported to enhance physiological water use efficiency as a consequence of reduced transpiration. In elevated CO₂ conditions, rooting and colonization of mycorrhizae have increased which may have significant implications on nutrient uptake and management in horticultural crops. The water use efficiency of crops also increases in elevated CO₂ conditions. In elevated CO₂ conditions, protein concentration in produce reduces, in nitrogen limiting conditions (Table 7).

Table 6 Effect of elevated CO₂ on the growth and yield of some horticultural crops

Crop	CO ₂ (550 ppm)
Tomato	24% more fruits
Sweet potato	Pn rate, growth, quality and yield increased
Sour orange plants	Higher growth, fruit production
Onion	Bulb size and yield of onion increased

Source: JICA Survey Team

Table 7 Effect of elevated CO₂, change on quality of horticultural crops

Crop	Parameter
Apple	Exposure to direct sunlight and high temperatures cause accumulation of sugars, high temperatures affects fruit firmness; causes sunburn, loss of texture and development of water core in fruits, In ripening apples, anthocyanins are synthesized at temperatures <10°C. High temperatures affect the biosynthesis of anthocyanin pigment and cause poor red peel
Sweet potato	Elevated CO ₂ , increased starch, carotene and glucose
Tomato	High CO ₂ - increase in lycopene and carotenoid content; increased vitamin C, sugars and acids

Source: JICA Survey Team

10. Impact on Post-harvest quality:

According to **Moretti *et al.* (2010)** temperature variation can directly affect crop photosynthesis, and a rise in global temperature can be expected to have significant impact on the postharvest quality by altering important quality parameters such as synthesis of sugars, organic acids, antioxidant compounds, peel colour and firmness. Grapes had higher sugar content and lower levels of tartaric acid when grown under high temperatures (Kliewer and Lider 1970).

11. Impact on pest and disease incidence:

Climate change could alter stages and rates of development of pathogen, modify host resistance and physiology of host-pathogen interactions. Climate change could lead to Changes in geographical distribution, Changes in population growth rates, Increased overwintering, Increase in the number of generations, Extension of developmental seasons, Changes in crop-pest synchrony of phenology, Changes in interspecific interactions of insects and Increased risk of invasion by migrant pests. In addition to direct impact of climate change on apple productivity, it has also aggravated infestation of some diseases and pests resulting in more losses in yield (Gautam *et al.*, 2013).

Under the changing climate situations, existing fungal pathogens, bacteria, viruses may cause more damage. Some of the minor pests may become major pests in future. Added to these, vector population may increase and new pathogens may emerge. Increase in temperature with low RH (less than 60%) reduced leaf spot diseases in banana in the sub humid region. Advancement in appearance of aphids by two weeks with increase in 1°C temperature reduced growing period for seed crop in potato. Increased temperature beyond 20°C during winter affects cultivation of seasonal button mushroom and increases incidence of insect pest and diseases. Temperature rise from 20 to 22°C increase the incidence of pests and diseases in case of Cymbidium orchid. The tea mosquito bug populations and damage score in cashew were negatively correlated with minimum temperature (15-20°C), RH (85-90%) and positively with bright sunshine hours (9-10 hours). Bright sunshine hours less than two hours per day triggers incidence of inflorescence blight in cashew. Changes in rainfall and temperature patterns caused increased incidence of apple scab, powdery mildew in apple and flea beetle in almost all temperate crops. Activity and duration of pests like DBM in cauliflower and *Heliothis* borer in tomato increase with increase in temperature. The pest- predator dynamics may alter.

Attachment 3.7.4 Collected Photos of Existing Countermeasures for Climate Change

These photos are collected by JICA Survey Team as existing countermeasures for climate change in Uttarakhand or adjacent area.



Widely provided hail net for apple on the slope in Himachal Pradesh



Traditional counter measures for frost or cold damages after Papaya germination or transplantation in the beginning stage of the growth.



Bottom heating system: In India it is innovative equipment for germination, grafting or growing of seedlings for fruits and vegetables after germination under cold temperature.



Small size poly house is one of essential tools not only for individual farmer / group of farmers for crop and seedling production also.



Countermeasure for late frost during flowering time. Late frost makes damage on blooming and causes less yield and poor quality.

Source: JICA Survey Team



Drip irrigation is essential for proper watering and saving irrigation water.

Attachment 3.7.5 Candidate Varieties to be Compared for Promotion

Some important cultivars of temperate fruit crops which have been recommended for subtropical conditions or in areas experiencing mild winter and low chilling (Uppal, *et al.*, 1993; Chadha, 1998; Chanana, 2001; Seth *et al.*, 1984) are given as follows.

Table Suggested low chill cultivars of temperate fruits for areas experiencing mild winter and low chilling

Fruit crops	Low chill cultivars	Chilling requirement
Apple	Tropical Beauty, Parlin's Beauty, Anna, Maayan, Tamar, Vered, Schlomit, Naomi, Michal, Winter Banana	<800
Peach and Nectarines	Florda Prince, Pratap, Shan-e-Punjab, Earli Grand, Saharanpur Prabhat, Flordasun, Flordared, Sunred Nectarine, Florda Vally, Sharbati	<300
Pear	Patharnakh (Sand Pear), Gola, China, Le-Conte, Smith, Kieffer, Garber, Punjab Nectar, Punjab Beauty, Punjab Gold, Punjab Soft, Baggugosha.	<200
Plum	Satluj Purple, Kala Amritsari, Jamuni, Alubokhara, Alucha Black, Titron, Fla 1-2	<250
Apricot	Chaubattia Alankar, Chaubattia Madhu, Chaubattia Kesri, Trevatt, New Castle, Kaisha,	-
Almond	Perkin's Wonder, California Paper Cell	-
Strawberry	Chandler, Selva, Pujaro, Fern, Pusa Early Dwarf	<250

Source: Uppal, *et al.*, 1993; Chadha, 1998; Chanana, 2001; Seth *et al.*, 1984

Table List of vegetables varieties and their advance line tolerant to abiotic stress

Tolerant	Crop	Variety	Advanced Line
Drought/rainfed	Tomato	Arka Vikas	RF- 4A
	Cow pea	Arka Garima, Arka Suman, Arka Samrudhi	-
High temperature	Capsicum		IIHR Sel-3
	French bean		IIHR-19-1
	Peas		IIHR-1 and IIHR-8
	Cauliflower		IIHR 316-1 and IIHR-371-1

Source: Singh *et al.*, 2009; Singh, 2010

Table Biotic and abiotic stress resistant rootstock of apple

Rootstock	Parentage	Characters
B.9 (Bud. 9, Budagovsky 9)	M.8 x 'Red Standard	It is slightly more dwarfing than M.9 and is slightly more productive. Other traits of note: Very early precocity; very winter hardy; little suckering; requires support; adapted to well-drained soil; very resistant to crown rot; more fire blight resistant than M.9.
B.118 (Bud.118, Budagovsky 118)	Moscow M.9 pear' x	It is reported to be very cold hardy and produces a tree size of about 85% of seedling. It is more precocious than the seedling and can be grown without support. It is moderately resistant to fire blight and crown rot.
EMLA 7	-	EMLA 7 is very winter hardy. It is susceptible to suckering. It is extremely tolerant to fire blight.
EMLA 26	-	Smaller than a half size tree, very adaptable for close plantings and double rows.
EMLA 106	-	This rootstock produces a tree about half to two-thirds the size of a standard tree. It does not sucker and the rootstock is resistant to woolly aphid.
EMLA 111	-	Good producing rootstock is well anchored and tolerant of drought conditions.
M.26 (Malling 26)	M.16 x M.9	very early bearing; good productivity; may need support early on; winter hardy; prefers well drained soil; little suckering; susceptible to woolly apple aphid.
G.11	M.26 x Robusta 5 crabapple	G.11 is moderately resistant to fire blight; moderately susceptible to woolly apple aphid and crown rot.
G.41	M.27 x Robusta 5	highly resistant to fire blight and phytophthora and it appears to be tolerant of

Rootstock	Parentage	Characters
	crabapple	replant disease (ARD)
G.890		Semi-dwarfing rootstock; intermediate precocity; winter hardy
G.935	Ottawa 3 x Robust 5 crabapple	Early bearing; winter hardy; moderate suckering; requires support; very productive; well adapted to most soils; highly resistant to crown rot; highly resistant to fireblight.
M9-337	selection from M.9	Virus-free certified clonal stock, very precocious and tolerant to a wide range of soil and climatic conditions.
Supporter 4	M.9 x M.4	Relatively frost resistant, dwarfing apple rootstock

Source: <https://treefruit.wsu.edu/web-article/apple-rootstocks/>

Table Rootstocks for Kiwifruit:

Rootstock	Characters
D1	Tolerant to calcareous soil. It is clonal rootstock used in Italy.
TR 2	In New Zealand enhanced flowering in Hayward.
Actinidia kolomikta, and A. poligama:	Cold hardy rootstock
A. arguta	Late flowering, hairless, edible skin, bearing fruit having 10g weight.

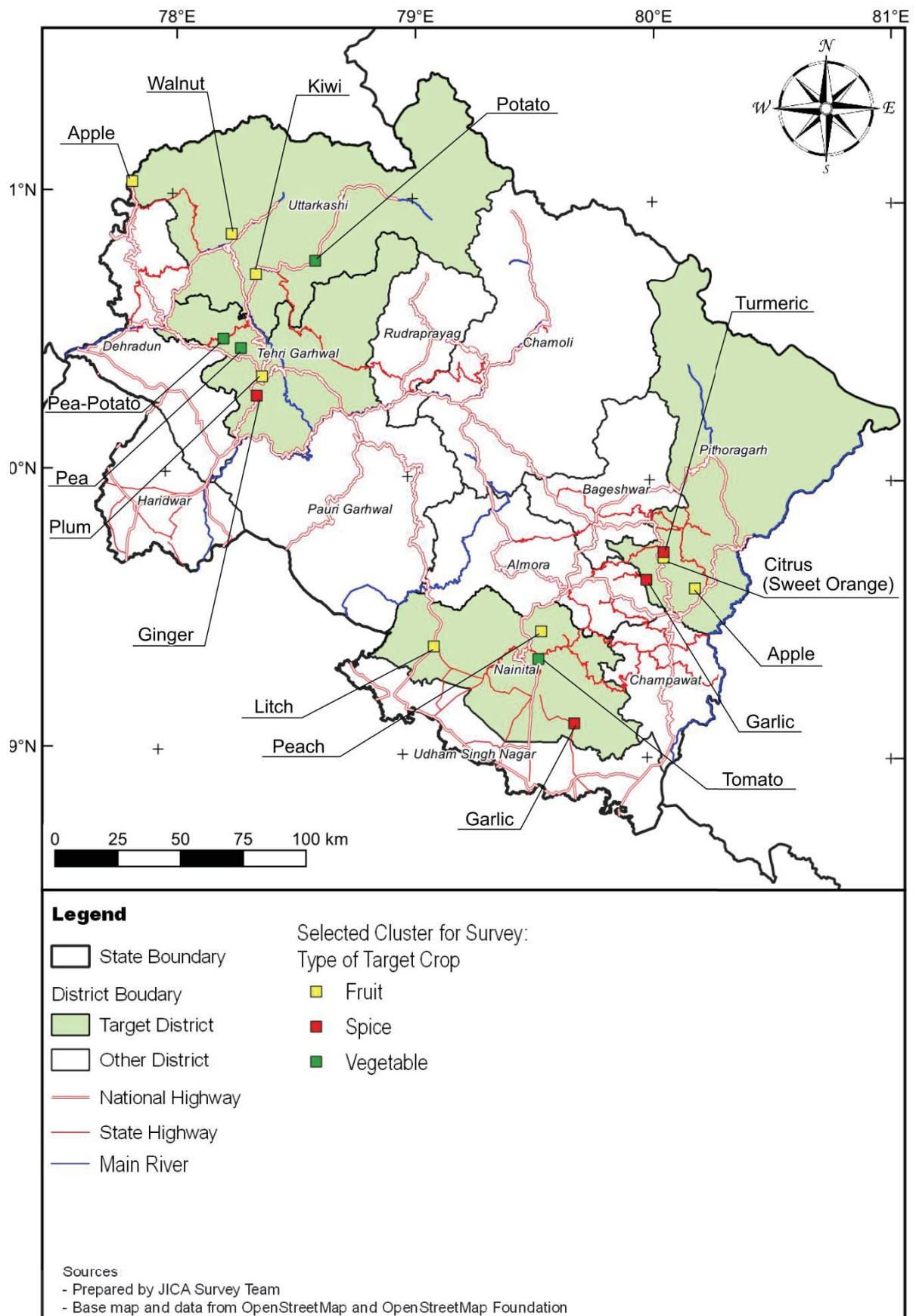
Source: <https://treefruit.wsu.edu/web-article/apple-rootstocks/>

Root Stock for Tomato:

Despite the issue associated with the cost of grafted plants, the tomato grafting industry in the world has rapidly expanded in recent years. In the country, more seed companies are now bringing commercial solanaceous and cucurbit rootstock cultivars. Plants are now grafted in commercial nurseries in many states, targeting diverse markets of different production sizes, including supermarkets, greenhouses, high tunnels, and open fields. A grafting study was conducted at TNAU, Tamil Nadu with three rootstocks viz., *Solanum torvum*, *Solanum sisymbirifolium* and *Solanum capsicoides* and two scions viz., TNAU tomato hybrid CO 3 and Shivam. Among the rootstocks *Solanum capsicoides* took less time to germinate and germination percentage was more in *Solanum sisymbirifolium* both at 15 and 25 days after sowing. Success percentage was more in graft combination of Shivam with *Solanum sisymbirifolium* on 30th and 45th day (Bharathi *et al.*, 2021).

Attachment for Chapter 4

Attachment 4.2.1 Mapping of Identified Clusters and Crops



Attachment 4.2.2 Proposed Plan for Training Infrastructures

✧ Nainital

1	Location	Ramnagar	Ramnagar	Haldwani	Nainital	Bhimtal	Ramghar
2	Facility Name	Govt. Food Science Training Centre	Govt. Community Fruit Preservation and Training Centre	Govt. Community Fruit Preservation and Training Centre	Govt. Community Fruit Preservation and Training Centre	Govt. Community Fruit Preservation and Training Centre	Govt. Community Fruit Preservation and Training Centre
3	Activity in recent years	1-year diploma course	Community food preservation	Community food preservation	Community food preservation	Community food preservation	Community food preservation
		Technical support to private	Short term training	Short term training	Short term training	Short term training	Short term training
4	Staff (Work/Sanction)	12/17	2/3	3/4	2/4	3/4	1/3
5	Building construction	New building	New building	New building	New building	New building	New building
6	Equipment supply required	Bread slicer	Steam jacket pan	Steam jacket pan	Steam jacket pan	Steam jacket pan	Steam jacket pan
		Deck oven	Kettle	Kettle	Kettle	Kettle	Kettle
		Proving chamber	Fruit mill	Fruit mill	Fruit mill	Fruit mill	Fruit mill
		Dough sheeter	Sealing machine	Sealing machine	Sealing machine	Sealing machine	Sealing machine
		Bread mould	Source pan	Source pan	Source pan	Source pan	Source pan
		Steam jacket pan	Packing machine	Packing machine	Packing machine	Packing machine	Packing machine
		Kettle	Dehydrator	Dehydrator	Dehydrator	Dehydrator	Dehydrator
		Fruit mill	Pulper	Pulper	Pulper	Pulper	Pulper
		Sealing machine	Cooking machine	Cooking machine	Cooking machine	Cooking machine	Cooking machine
		Source pan	Storage rack & crate	Storage rack & crate	Storage rack & crate	Storage rack & crate	Storage rack & crate
		Packing machine	Tray	Tray	Tray	Tray	Tray
		Dehydrator					
		Pulper					
		Cooking machine					
		Storage rack & crate					
		Tray					

Source: UKDHFP

✧ Pithoragarh

1	Location	Pithoragarh	Didihat	Baluwakot
2	Facility Name	Govt. Food Processing Centre	Govt. Food Processing Centre	Govt. Food Processing Centre
3	Activity in recent years	Community food processing	Community food processing	Community food processing
		2-days training		
4	Staff (Work/Sanction)	3/4	2/3	3/4
5	Building construction	New building	New building	New building
6	Equipment supply required	Fruits crush machine	Fruits crush machine	Fruits crush machine
		Citrus fruit juicer	Citrus fruit juicer	Citrus fruit juicer
		Pulper	Pulper	Pulper
		Mixture	Mixture	Mixture

	Deep freezer	Deep freezer	Deep freezer
	Freezer	Freezer	Freezer
	Electric weight machine	Electric weight machine	Electric weight machine
	Fruits meal	Fruits meal	Fruits meal
	Sealing machine	Sealing machine	Sealing machine
	Dehydrator	Dehydrator	Dehydrator
	Storage rack	Storage rack	Storage rack
	Tray	Tray	Tray

Source: UKDHFP

❖ Uttarkashi

1	Location	Uttarakhashi	Bhatwari	Nogaun
2	Facility Name	Govt. Community Fruit Conservation and Processing Unit	Govt. Community Fruit Conservation and Processing Unit	Govt. Community Fruit Conservation and Processing Unit
3	Activity in recent years	Community food processing	Community food processing	Community food processing
		Short term training	Short term training	Short term training
4	Staff (Work/Sanction)	3/4	3/2	4/4
5	Buidling construction	New buidling	New buidling	New buidling
6	Equipment supply required	Steam jacket pan	Steam jacket pan	Steam jacket pan
		Vaccume pressure pan	Vaccume pressure pan	Vaccume pressure pan
		Electric grinder	Electric grinder	Electric grinder
		Packing & sealing machine	Packing & sealing machine	Packing & sealing machine
		Pulper	Pulper	Pulper
		Electric juicer	Electric juicer	Electric juicer
		Storage tank	Storage tank	Storage tank
		Freezer	Freezer	Freezer
		Vegetable cutting machine	Vegetable cutting machine	Vegetable cutting machine
		Vegetable slicer	Vegetable slicer	Vegetable slicer
		Sugarcane juicer	Sugarcane juicer	Sugarcane juicer
		Gravy machine	Gravy machine	Gravy machine
		Food processing table	Food processing table	Food processing table
		Amla shredding machine	Amla shredding machine	Amla shredding machine
		Water purifier	Water purifier	Water purifier
		Cooking machine	Cooking machine	Cooking machine
		Dehydrator	Dehydrator	Dehydrator
		Apple juicer	Apple juicer	Apple juicer
		Storage rack & crate	Storage rack & crate	Storage rack & crate
		Tray	Tray	Tray

Source: UKDHFP

❖ Tehri Garhwal

1	Location	Baurari	Chamba	Ghansali	Muni Ki Reti
2	Facility Name	Govt. Community Fruit Conservation Processing Unit	Govt. Community Fruit Conservation Processing Unit	Govt. Community Fruit Conservation Processing Unit	Govt. Community Fruit Conservation Processing Unit
3	Activity in recent years	Community food processing	Community food processing	Community food processing	Community food processing
		Trainng at community level	Trainng at community level	Trainng at community level	Trainng at community level
4	Staff (Work/Sanction)	3/4	3/3	2/3	3/4

5	Buidling construction	New buidling	New buidling	New buidling	New buidling
6	Equipment supply required	Steam jacket pan	Steam jacket pan	Steam jacket pan	Steam jacket pan
		Vaccume pressure pan	Vaccume pressure pan	Vaccume pressure pan	Vaccume pressure pan
		Electronic grinder	Electronic grinder	Electronic grinder	Electronic grinder
		Packing & sealing machine	Packing & sealing machine	Packing & sealing machine	Packing & sealing machine
		Pulper Machine	Pulper Machine	Pulper Machine	Pulper Machine
		Electronic juicer	Electronic juicer	Electronic juicer	Electronic juicer
		Storage tank	Storage tank	Storage tank	Storage tank
		Freezer	Freezer	Freezer	Freezer
		Vegetable cutting machine	Vegetable cutting machine	Vegetable cutting machine	Vegetable cutting machine
		Sugarcane juice machine	Sugarcane juice machine	Sugarcane juice machine	Sugarcane juice machine
		Vegetable cutter/slicer	Vegetable cutter/slicer	Vegetable cutter/slicer	Vegetable cutter/slicer
		Gravy machine	Gravy machine	Gravy machine	Gravy machine
		Food processing table	Food processing table	Food processing table	Food processing table
		Amla shredding machine	Amla shredding machine	Amla shredding machine	Amla shredding machine
		Water purifire	Water purifire	Water purifire	Water purifire
		Cooking machine	Cooking machine	Cooking machine	Cooking machine
		Dehydrating machine	Dehydrating machine	Dehydrating machine	Dehydrating machine
		Apple juicer	Apple juicer	Apple juicer	Apple juicer
		Aluminium tray	Aluminium tray	Aluminium tray	Aluminium tray
		Storage rack and crate	Storage rack and crate	Storage rack and crate	Storage rack and crate

Source: UKDHFP

Attachment for Chapter 5

Attachment 5.1.1 Analysis Result for Crop Selection

(1) Result from Crop Screening

		Without % Share in Uttarakhand Market							
		Local Market				With Delhi Market			
Year	Crop Group	Nainital	Pithoragarh	Tehri	Uttarkashi	Nainital	Pithoragarh	Tehri	Uttarkashi
2015/16- 2019/20	Fruits	Peach	Pear	Mango	Apple	Peach	Pear	Mango	Apple
	Veg	Tomato	Tomato	Pea	Potato	Tomato	Tomato	Pea	Potato
	Spice	Ginger, Turmeric	Garlic	Coriander Garlic Ginger	Ginger	Ginger	Garlic	Ginger	Ginger
2014/15- 2018/19	Fruits	Peach	Pear	Mango	Apple	Peach	Pear	Mango	Apple
	Veg	Onion	Potato	Pea	Potato	Onion	Potato	Pea	Potato
	Spice	Turmeric	Garlic	Ginger	Ginger	Turmeric	Garlic	Ginger	Ginger

		With % Share in Uttarakhand Market							
		Local Market				With Delhi Market			
Year	Crop Group	Nainital	Pithoragarh	Tehri	Uttarkashi	Nainital	Pithoragarh	Tehri	Uttarkashi
2015/16- 2019/20	Fruits	Peach	Pear	Mango	Apple	Peach	Pear	Mango	Apple
	Veg	Tomato	Tomato	Pea	Pea	Tomato	Tomato	Pea	Pea
	Spice	Turmeric	Garlic	Ginger	Ginger	Turmeric	Garlic	Ginger	Ginger
2014/15- 2018/19	Fruits	Peach	Pear	Mango	Apple	Peach	Pear	Mango	Apple
	Veg	Onion	Potato	Pea	Potato	Onion	Potato	Pea	Potato
	Spice	Turmeric	Garlic	Ginger	Ginger	Turmeric	Garlic	Ginger	Ginger

(2) Proposal by JICA Survey Team

District	Nainital	Pithoragarh	Tehri Garhwal	Uttarkashi
Fruit	Peach	Pear	Mango	Apple
Vegetable	Tomato or Onion	Tomato or Potato	Pea	Potato
Spice	-	-	-	-

Attachment 5.1.2 List of Clusters Surveyed

No.	District	Crop Name	Cluster Name	Block Name	SRCs/FPOs/LCs/ Federation	Villages (Road Head and Remote)
1	Nainital	Peach	Ramgarh	Ramgarh	Mukteshwar Kisan Producer Company Ltd. (FPO)	Jhutiya, Naithana (RH);Simayal,Baret (R)
2		Litchi	Ramnagar	Ramnagar	Purvi Ramnagar Bahudessiya Sadhan Sahkari Samiti (Purvi Ramnagar, SRC)	Kaamdevpur, Jogipura (RH); Nathhupur choi,Chilkiya (R)
3		Tomato	Alchouna	Bhimtaal	Bhimtal Bahudessiya Sadhan Sahkari Samiti (Bhimtal, SRC)	Alchouna (RH), Chanfi (R)
4		Garlic	Kuwarpur	Haldwani	Kuwarpur Bahuudessiya Sadhan Sahkari Samiti (Kunwarpur Multipurpose Cooperative Society)	Kunwarpur,DevalaMalla (RH)
1	Pithoragarh	Citrus Sweet Orange	Udhyari	Berinag	Matree Shakti Nidhi Swayat Sahkarita	Udiyari,Baitholi (RH) ; Puranathal (R) ,
2		Apple	Bhilot to Baman	Bin	Thalkedar Swatya Sahkarita	Bamanthal (R); Bhalot,Seri Kanda (RH)
3		Turmeric	Kotesher	Berinag	Berinaag Bahudessiya Sadhan Sahkari Samiti (Berinag, Multipurpose Cooperative Society)	Jakh,Kanda Kiroli (RH)
4		Garlic	Kuntola	Gangoliha t	Nauling Swayat Sahkarita (Nauling, SRC)	Pokhri,Chouki (RH); Dasila Khet,Jholiya (R)
1	Uttarkashi	Potato	Gorsali	Bhatwari	Maa Chandomati Aajeevika Swayat Sahkarita (Maa Chandomati SRC) (ILSP)	Gorsali, Dwari, Pahi (RH), Sari (R)
2		Apple	Aarakot	Mori	Aarakot Bahuuddeshiya Sadhan Sahkari Samiti (Aarakot multipurpose cooperative Society)	Thunara, Dagoli, Aarakot (RH), Kalich (R)
3		Walnut	Gangtadi	Naugaon	Saptrishi Aajeevika Swayat Sahkarita (Saptrishi SRC) (ULIPH)	Ghangtadi,Mashalgaon (RH),Nagad Gaon(R)

No.	District	Crop Name	Cluster Name	Block Name	SRCs/FPOs/LCs/ Federation	Villages (Road Head and Remote)
4		Kiwi	Dunda	Dunda	Raj Rajeshwari Aajeevika Swayat Sahkarita (Raj Rajeshwari SRC) (ULIPH)	Kamadh(RH), Thandi, Kumar kot(R)
1	Tehri Garhwal	Plum	Chopriar Gaon	Chamba	Chamba Mussorrie Aajeevika Swayat Sahkarita (Chamba Mussorrie SRC) (ILSP)	Chapriar Gaon(RH), Dungli, Gunogi (R)
2		Potato/Pea	Batwaldhar	Jaunpur	Maa Surkunda Aajeevika Swayat Sahkarita (Maa Surkunda SRC)	Kalaban Degna, Semwal Gaon (RH), Haveli (R)
3		Pea/ Potato	Jwarana	Thauldhar	Bhadeti Bahuudessiya Sadhan Sahkari Samiti (Bhadeti SRC)	Jwarna, Thandar (RH) , Sour (R)
4		Ginger	Khadi	Chamba	Aampata Bhuudeshy Sadhan Sahkari Samiti (Aampata Multipurpose Cooperative Society)	Rampur, Gaind (RH), Moun (R)

Source: UKDHFP

Note: SRC* - Self-Reliant Cooperative, LC - Livelihood Cooperative, RH - Road Head Village, R- Remote Village

Attachment 5.1.3 Questionnaires for Supply Chain Survey

1) Questionnaire Survey on Farm Household
- Farm Household (Cultivator) –
Under Jica's Preparatory Survey for Integrated Horticulture Development In Uttarakhand

District:

Serial No. :	Enumerator:	Date: / /
--------------	-------------	-------------------------

BASIC INFORMATION OF INFORMANT:

Name of Informant: _____		Mobile Phone No: _____	
Block: _____		Gram Panchayat: _____	
Village: _____			
Religion of Household (✓): Hindu <input type="checkbox"/> Muslim <input type="checkbox"/> Christian <input type="checkbox"/> Other <input type="checkbox"/>		Household with Type of Cards (✓): BPL <input type="checkbox"/> Antodaya <input type="checkbox"/> MGNREGA <input type="checkbox"/> Old Age Pension <input type="checkbox"/> Anupama Yojana <input type="checkbox"/>	
Social Stratum (✓): Scheduled Caste <input type="checkbox"/> Scheduled Tribe <input type="checkbox"/> Other Backward Class <input type="checkbox"/> Other <input type="checkbox"/>		Tribal Community: _____	
Membership:			
FPO <input type="checkbox"/> FPC <input type="checkbox"/> Cooperative <input type="checkbox"/> SHG <input type="checkbox"/> Water Users' Association <input type="checkbox"/>		Growers' Association <input type="checkbox"/> Crop: _____	
Other: _____		Other: _____	
Land Holding Category (✓)	Marginal (< 1 ha or 2.5ac) <input type="checkbox"/>	Small (1-2 ha or 2.5-5 ac) <input type="checkbox"/>	Large (2 ha or 5 ac <) <input type="checkbox"/>
Main crop Kharif: _____, _____, _____ Rabi : _____, _____, _____		Water source for cropping (✓): Rain <input type="checkbox"/> Irrigation <input type="checkbox"/> (pond/canal/well/stream/spring) Rain <input type="checkbox"/> Irrigation <input type="checkbox"/> (pond/canal/well/stream/spring)	
Primary Income Sources(✓): (Multiple answers)			
Paddy cultivation <input type="checkbox"/>	Cattle breeding <input type="checkbox"/>	Permanent employment <input type="checkbox"/>	
Other Cereal cultivation <input type="checkbox"/>	Daily husbandry <input type="checkbox"/>	Agriculture labor <input type="checkbox"/>	
Pulses cultivation <input type="checkbox"/>	Poultry farming <input type="checkbox"/>	Non agriculture labor <input type="checkbox"/>	
Vegetables cultivation <input type="checkbox"/>	Swine husbandry <input type="checkbox"/>	Emigrant worker <input type="checkbox"/>	
Fruits cultivation <input type="checkbox"/>	Goat breeding <input type="checkbox"/>	Cottage industry <input type="checkbox"/>	
Spices/Herbs cultivation <input type="checkbox"/>	Fish culture <input type="checkbox"/>	Business <input type="checkbox"/>	
Sericulture <input type="checkbox"/>	Timber industry <input type="checkbox"/>		
Floriculture <input type="checkbox"/>	Minor Forest Products <input type="checkbox"/>	Others <input type="checkbox"/>	

1. HOUSEHOLD (HH) PROFILE:

	Name of Family Members	Sex(✓)		Age	Level of Education Attained*	Marital Status**	Occupation***	
		M	F				Main	Secondary
1	HH Head (self)	<input type="checkbox"/>	<input type="checkbox"/>					
2		<input type="checkbox"/>	<input type="checkbox"/>					
3		<input type="checkbox"/>	<input type="checkbox"/>					
4		<input type="checkbox"/>	<input type="checkbox"/>					
5		<input type="checkbox"/>	<input type="checkbox"/>					
6		<input type="checkbox"/>	<input type="checkbox"/>					
7		<input type="checkbox"/>	<input type="checkbox"/>					

Notice: **The household is the basic family unit operated around one Chula (cooking unit).**

- * IL= Illiterate; AL = Adult Literate ; P= Primary(5th); UP= Upper Primary(6,7th);
S= Secondary (8,9,10th); HS= High Secondary (11,12th); G= Graduate and above;
P= Professional ; NS = Non School Going
- ** M= Married ; N = Not Married ; DV= Divorced ; S= Separated ; W= Widow/er
- *** C = Agriculture/Cultivator ; AL= Agricultural Labor ; B= Business ; S= Service ;
CI = Cottage Industry : NAL = Non-Agricultural Labor ; HW= Household Work ;
SW = Seasonal Worker; STU = Student; CW = Casual Worker; U =Unemployed

2. HOUSEHOLD CHARACTERISTICS

2.1 TYPE OF HOUSE (✓)

Hut _____ Pacca _____ Kaccha _____ Kaccha & Pacca _____
Other _____
(Mud, Thatched Roof) (Cement, Tin roof)

2.2 ELECTRICITY(✓): Yes _____ No _____

If “no”, what do you use for lighting? (✓) Kerosene _____ Oil _____ Candle _____

2.3 HEALTH & NUTRITION

2.3.1 What are the most common diseases encountered in your family during the last year? (Please select the three (3) most severe diseases (✓))

Anemia _____ Typhoid _____ Diarrhea _____ Fever _____ Injury _____
Respiratory(TB, Asthma) _____ Skin Disease _____ Other _____

2.3.2 How many times in a day does your family eat?

Male			Female		
Above 18 (inclusive)	Below 17 (inclusive)	Below 5 (inclusive)	Above 18 (inclusive)	Below 17 (inclusive)	Below 5 (inclusive)

2.3.3 What are the food items (vegetables, fruits, cereals, dairy and other food groups etc.) that you consume in bulk at home? How do you get them?

Name of the Food Item	Approximate volume consume in a year (kg)	Main Source of Procurement			
		From own farm	PDS	Buy at the market (please put the name of the market)	Other means of procurement

*Please use overleaf for any extra items.

2.3.4 In your household, who buys the food?

	Male Adult	Female Adult
Items		

2.3.4 Other than the above, what are the vegetables and fruits that you consume from your own farm?

2.3.5 In your family, do you feel that some nutrition is missing? Yes ____ No ____
If yes, please describe your concern:

2.3.6 What vegetables and fruits do you wish to add to your every day diet of your family?

2.4 FUEL CONSUMPTION

2.4.1 Source of household fuel (✓):

Forest Product (wood, charcoal, other) ____ Crop Residues ____ Dung Cakes ____
Kerosene ____ Electricity ____ Gas Cylinder ____ Others ____

2.5 ASSET OWNERSHIP (Number of Each)

1	Radio	
2	TV	
3	Bicycle	
4	Motorcycle	

5	Mobile phone	
6	Computer	
7	Internet connection	
8	Car	

3 LAND HOLDING AND LAND TENURE

3.1 Breakdown of holding area:

LAND CATEGORY 1	Owned Land 2	Rented in Land 3	Leased Out Land 4	Any Encroached Land 5
Total Land	ac.	ac.	ac.	ac.
Total Cultivated:	ac.	ac.	ac.	ac.
Non-Irrigated	ac.	ac.	ac.	ac.
Irrigated	ac.	ac.	ac.	ac.
Orchard/Tree Crops	ac.	ac.	ac.	ac.
Residential/Home Garden	ac.	ac.	ac.	ac.
Pasture/Grazing Land	ac.	ac.	ac.	ac.
Barren Land	ac.	ac.	ac.	ac.
Other	ac.	ac.	ac.	ac.

4 COMPOST APPLICATION

4.1 Do you know compost for enrich the farmland? (✓) Yes ____ No ____

4.2 Do you apply compost to your farm? (✓) Yes ____ No ____

If "yes", what kind of compost did you apply?

Compost material	Target crops	Amount (metric ton) / Acre	Origin of the material
Green manure (weed , sorghum , others:)			
Coarse materials (straws , sawdust , wood chip , others:))			
Chicken dung , Vermicompost , others:			
Others			

5 FARM INPUTS

5.1 Please list the machinery you have and indicate:

Machinery and Equipment	Number	Purchase Price* (Rs/numbers)	Annual Operating Cost (Rs/year)
Tractor			
Wagon			
Power tiller			
Seed drill			
Draught cattle (buffalos/bullock)			
Plough (wood / iron)			
Harrow			
Thresher			
Hand sprayer			
Hand tools (spade, sickle, khurpa, kulhari)			
Seed Sprayer			
Diesel pump			
Electric pump			
Other type of pump (Please specify:)			
Bullock cart			
Other			

* Only for equipment purchased from year 2016 to now.

5.2 How do you purchase the chemicals and fertilizers?

From local shop ☐ From Farmers' Organization ☐ From Trader ☐
Others ()

5.3 How do you apply the chemicals?

- Did you select the chemical properly for crop and disease/insect?
Proper chemical for crop ☐ for disease ☐ for insect ☐ weed ☐ others ☐.
- Did you follow the instruction for applying the chemicals?
dilution ☐, amount ☐, application timing ☐, other conditions ☐.
- Did you protect yourself and neighbours from the chemicals? Yourself ☐, Neighbours ☐.
- Did you record the chemical application? Yes ☐, No ☐.

5.4 Do you hire any types of farm machineries last year?

Machinery and Equipment	Number hired	Hiring Rate (Rs/ hour or day)	Annual Total (Rs/year)
Tractor		H/ D	
Wagon			
Power tiller			
Seed drill			
Draught cattle (buffalos/bullock)			

Machinery and Equipment	Number hired	Hiring Rate (Rs/ hour or day)	Annual Total (Rs/year)
Plough (wood / iron)			
Harrow			
Thresher			
Hand sprayer			
Hand tools (spade, sickle, khurpa, kulhari)			
Seed Sprayer			
Diesel pump			
Electric pump			
Other type of pump (Please specify:)			
Bullock cart			
Other			

6 CROP PRODUCTION

6.1 Summary of crop production in 2020 (2020 Rabi and 2020 Kharif)

CROP/Varieties	NON-IRRIGATED		IRRIGATED	
	Area	Production	Area	Production
Kharif:				
1.1 Tomato/	ac.	kg	ac.	kg
1.2 Potato/	ac.	kg	ac.	kg
1.3 Peas/	ac.	kg	ac.	kg
1.4 Cabbage/	ac.	kg	ac.	kg
1.5 Lettuce/	ac.	kg	ac.	kg
1.6 Cauliflower/	ac.	kg	ac.	kg
1.7 Onion/	ac.	kg	ac.	kg
1.8 Capsicum/	ac.	kg	ac.	kg
1.9 French bean/	ac.	kg	ac.	kg
1.10 Green chili/	ac.	kg	ac.	kg
1.11 Ginger/	ac.	kg	ac.	kg
1.12 Apricot/	ac.	kg	ac.	kg
1.13 Pear/	ac.	kg	ac.	kg
1.14 Plum/	ac.	kg	ac.	kg
1.15 Apple/	ac.	kg	ac.	kg
1.16 Walnut/	ac.	kg	ac.	kg
1.17 Kiwifruits/	ac.	kg	ac.	kg
1.18 _____ / _____	ac.	kg	ac.	kg
Rabi:**				
2.1 Tomato/	ac.	kg	ac.	kg
2.2 Potato/	ac.	kg	ac.	kg
2.3 Peas/	ac.	kg	ac.	kg

2.4 Cabbage/	ac.	kg	ac.	kg
2.5 Lettuce/	ac.	kg	ac.	kg
2.6 Cauliflower/	ac.	kg	ac.	kg
2.7 Onion/	ac.	kg	ac.	kg
2.8 Capsicum/	ac.	kg	ac.	kg
2.9 French bean/	ac.	kg	ac.	kg
2.10 Green chili/	ac.	kg	ac.	kg
2.11 Ginger/	ac.	kg	ac.	kg
2.12 Apricot/	ac.	kg	ac.	kg
2.13 Pear/	ac.	kg	ac.	kg
2.14 Plum/	ac.	kg	ac.	kg
2.15 Apple/	ac.	kg	ac.	kg
2.16 Walnut/	ac.	kg	ac.	kg
2.17 Kiwifruits/	ac.	kg	ac.	kg
2.18 _____/_____	ac.	kg	ac.	kg

** Rabi includes the summer season.

Be careful with the unit!!! Production here is not a unit yield!!!

The answer here is total production of crops from the cultivated/harvested area.

Unit yield will be calculated later.

Please add lines if there are two or more varieties for one crop

Conversion e.g. from quintal to kg has to be appropriately made!

7. MARKETING

7.1 Where do you sell your produces mainly?

Type of the Market	Location/ Name	Crop sold	Frequency Code: Please see below.	Distance from you house
At Home/ Farm Gate				
At the Crop Field/ Farm				
Collection Point in the village				< 5 km <input type="checkbox"/> , 5-10 km <input type="checkbox"/> , 10-20 km <input type="checkbox"/> , > 20 km <input type="checkbox"/>
Collection point outside the village				< 5 km <input type="checkbox"/> , 5-10 km <input type="checkbox"/> , 10-20 km <input type="checkbox"/> , > 20 km <input type="checkbox"/>
APMC market yard				< 5 km <input type="checkbox"/> , 5-10 km <input type="checkbox"/> , 10-20 km <input type="checkbox"/> , > 20 km <input type="checkbox"/>
Apni mandi				< 5 km <input type="checkbox"/> , 5-10 km <input type="checkbox"/> , 10-20 km <input type="checkbox"/> , > 20 km <input type="checkbox"/>
Others ()				< 5 km <input type="checkbox"/> , 5-10 km <input type="checkbox"/> , 10-20 km <input type="checkbox"/> , > 20 km <input type="checkbox"/>

Code: 1. Common, 2. Sometimes, 3.No Practice

7.2 Who are the main buyers of your produces? Please indicate the approximate % of produces sold to each buyer.

Crop	Farmers' Organization (FPO/ FPC)	Village collector	Trader in APMC market yard	Local retailer	Consumer	Inter-state middleman	Supermarket/ Processor/ Exporter/ Hotel

7.3 Do you know how to grade the produce? Yes ☐ No ☐

If no, why you do not grade your produce?

Do not know the need of it ☐ No reason ☐ Others ()

7.4 Where do you gather information related to market?

From other farmers ☐ From Farmers Organization ☐ eNam ☐
internet ☐ Traders ☐ Newspaper ☐
Radio ☐ Extension Workers ☐
Others ()

7.5 What are the difficulties in selling your produce?

Not getting good price ☐ Market is too far. ☐ Small volume to sell ☐ Low quality ☐
Others ()

If the answer is low quality, what are the reasons for low quality?

Not enough fertilizers/ chemicals ☐ Poor planting materials ☐
Poor packing materials ☐ Lack of Storage facilities ☐
Others: ()

7.6 Does the Farmers' Organization help you in selling your produce to get good price?

Yes ☐ No ☐

7.7 Who in your family decides when to sell what volume?

Adult men ☐ Adult women ☐ Men and women jointly ☐

7.8 Have you taken part in the collective/ group marketing of the vegetables and fruits?

Yes ☐ No ☐

If Yes, what were the advantages you expected? Have your expectations met?

No	Expected Advantages of Collective/ Group Marketing	Tick if expected	Tick if fulfilled
1	High selling price due to increased bargaining power		
2	Increased knowledge/skill about farming, post-harvest, and marketing practice		
3	Saving transportation cost		
4	Easy access to equipment, machinery and facilities for farming, post-harvest handling and marketing		
5	Easy access to market information		
6	Easy access to loan/credit		
7	External support (from Govt. NGO, etc.) to improve farming, post-harvest marketing and marketing practice		
<Add other expectation if there is>			

If No, please tell us the reasons for not participating.

No	Reasons why not start Joint Marketing	Tick where appropriate
1	No benefit/profit from joint marketing (no difference from individual marketing)	
2	Want to keep high quality of products without mixing with the products from other members	
3	Many troubles in managing conflicting interests among group members	
4	No leadership/No joint marketing group in the community	
5	No idea how to organize and manage a joint marketing	
6	No external support	
	<Add other expectation if there is>	

8 HOUSEHOLD INCOME IN YEAR 2020

8.1 Farm Crop Income in Year 2020 (2020 Rabi and 2020 Kharif)

NAME OF CROP/Varieties	Total Production (kg)	Loss (kg)	Quantity Sold (kg)	Unit Value to Sell (Rs./kg)
	1	3	4	5
<i>Kharif:(irrig.+non irrig.)</i>				
1.1 Tomato/				
1.2 Potato/				
1.3 Peas/				
1.4 Cabbage/				
1.5 Lettuce/				
1.6 Cauliflower/				
1.7 Onion/				
1.8 Capsicum/				
1.9 French bean/				
1.10 Green chili/				
1.11 Ginger/				
1.12 Apricot/				
1.13 Pear/				
1.14 Plum/				
1.15 Apple/				
1.16 Walnut/				
1.17 Kiwifruits/				
1.18 _____/_____				
Rabi:**				
2.1 Tomato/				
2.2 Potato/				
2.3 Peas/				
2.4 Cabbage/				
2.5 Lettuce/				

2.6 Cauliflower/				
2.7 Onion/				
2.8 Capsicum/				
2.9 French bean/				
2.10 Green chili/				
2.11 Ginger/				
2.12 Apricot/				
2.13 Pear/				
2.14 Plum/				
2.15 Apple/				
2.16 Walnut/				
2.17 Kiwifruits/				
2.18 /				

** Rabi includes the summer season. Note: 1= 2+ 3+ 4

Please add lines if there are two or more varieties for one crop

8.2 Agricultural Labor Income in Year 2020 (2020 Rabi and 2020 Kharif)

Members of the Family *	Male/Female (✓)	Daily Wage (Rs/day)	No. days per year (days/year)	Total Annual Wages (Rs/year)	Total Annual Wages from Share Cropping (Rs/year)
1 HH Head	M __ ; F __				
2	M __ ; F __				
3	M __ ; F __				
4	M __ ; F __				
5	M __ ; F __				

* Use same categories as on page 1.

8.3 Income from other sources in Year 2020 (2020 Rabi and 2020 Kharif)

Items	Daily (Rs./day)	Monthly (Rs./month)	Annual Income (Rs/year)
1 Salary from other occupation such as government employee, driver, factory worker, pensions, etc.			
2 Wages for casual work			
3 Earnings from sale of fuel wood & forest products			
4 Earnings from sale of fodder products			
5 Earnings from livestock and poultry products			
6 Earnings from tree crops; own trees and others' trees			
7 Earnings from fish culture			
8 Earnings from sericulture			
9 Earnings from floriculture			
10 Earnings from home garden			
11 Earnings from cottage industry			
12 Earnings from own business such as provision store and dhaba			
13 Receipt of gifts and remittances from relatives and others (emigrant)			
14 Hire charges for farm machinery, equipment, and work animals			
15 Income from leased land			
16 Interest earned from money loan and bank deposits			
17 Other sources			

Note : This question should be answered principally by the housewife or by women and men jointly.

9 HOUSEHOLD EXPENSES IN YEAR 2020 (2020 Rabi and 2020 Karif)

9.1 Farming Expenses in Year 2020 (2020 Rabi and 2020 Karif)

Items	Yearly Expenses
1 Agricultural inputs:	
1.1 Fertilizers	Rs./year
1.2 Compost/ Manure (Type:)	Rs./year
1.3 Pesticides	Rs./year
1.4 Seed / Seedlings for vegetables and fruits	Rs./year
1.5 Agri plastics or nets for mulching / tunnels	Rs./year
2 Agricultural hired labor	Rs./year
3 Maintenance cost of machinery / equipment	Rs./year
4 Livestock maintenance*	Rs./year
5 Other _____	Rs./year
Total yearly expenses	Rs./year

* This must be consistent with the answer of total annual maintenance expenditures of question 4.1

9.2 Breakdown of living expenses by month or by year

Items	Monthly	Yearly
1 Food		
1.1 Food items other than fruits and vegetables	Rs/month	Rs/year
1.2 Vegetables	Rs/month	Rs/year
1.3 Fruits	Rs/month	Rs/year
2 Alcohol	Rs/month	Rs/year

3	Tobacco & cigarettes (biri, pan, etc)	Rs/month	Rs/year
4	Fuel and light (wood, kerosene, electricity)	Rs/month	Rs/year
5	Clothing & foot wear	Rs/month	Rs/year
6	Medical	Rs/month	Rs/year
7	Education	Rs/month	Rs/year
8	Construction, repairs and furnishing for dwelling unit	Rs/month	Rs/year
9	Travel and transport	Rs/month	Rs/year
10	Social (festivals, rituals, and entertainment)	Rs/month	Rs/year
11	Loan repayment & rent	Rs/month	Rs/year
12	Others (consumer goods & services)	Rs/month	Rs/year
13	Total (monthly expenses x 12)	Rs/month	Rs/year

Note : This question is to be addressed to both men and women in the household

10 FARMERS' NEEDS ASSESSMENT

10.2 ISSUES and ASPIRATIONS

10.2.1 What do you wish to improve in your present farm management ?

	Variety you wish to improve on	What are the problems you have? (Please select 3 most urgent problems that you are facing.)	How are you going to improve?
Cereal			
Pulses			
Vegetables			
Fruits			
Livestock			

Cod for Problems:

- 1 Lack of knowledge; 2 Low price of farm products; 3 Poor condition of farm roads
4 Poor condition of village roads; 5 Lack of storage facilities; 6 Cannot repay loan;
7 Low yield of crops; 8 Flooding damage; 9 Poor maintenance of irrigation facilities
10 Shortage of irrigation water in dry season; 11 Shortage of irrigation water in rainy season
12 Drought damage; 13 Low soil fertility; 14 Damage of pests and diseases;
15 Weed damage; 16 Damage by wild animals; 17 Difficulty in hiring animal/mechanical power
18 Shortage of labor; 19 No good quality seeds and saplings are available near by;
20 Expensive price of farm inputs such as seed, fertilizers, and agrochemicals 21 Other ____

10.2.2 What are the crops/ varieties that you are interested in cultivating. Please tick 3 crops that you are most interested in. If you are interested in (a) particular variety, please tell us. (Enumerators: Please record the variety in the space next to the name of the crop.

Kharif		
Irrigated	Rainfed	Crops/ Varieties
		1.1 Tomato/
		1.2 Potato/
		1.3 Peas/
		1.4 Cabbage/
		1.5 Lettuce/
		1.6 Cauliflower/
		1.7 Onion/
		1.8 Capsicum/
		1.9 French bean/
		1.10 Green chili/
		1.11 Ginger/
		1.12 Apricot/
		1.13 Pear/
		1.14 Plum/
		1.15 Apple/
		1.16 Walnut/
		1.17 Kiwifruits/
		1.18 _____ / _____

Rabi		
Irrigated	Rainfed	Crops
		2.1 Tomato/
		2.2 Potato/
		2.3 Peas/
		2.4 Cabbage/
		2.5 Lettuce/
		2.6 Cauliflower/
		2.7 Onion/
		2.8 Capsicum/
		2.9 French bean/
		2.10 Green chili/
		2.11 Ginger/
		2.12 Apricot/
		2.13 Pear/
		2.14 Plum/
		2.15 Apple/
		2.16 Walnut/
		2.17 Kiwifruits/
		2.18 _____ / _____

10.3 HINDERING FACTORS

What are the obstacles / reasons for these improvements / mentioned above not being implemented ?

Please select the three (3) important obstacles / reasons (✓).

- | | | |
|----|--------------------------|---|
| 1 | <input type="checkbox"/> | Not willing to do it |
| 2 | <input type="checkbox"/> | Lack of market information |
| 3 | <input type="checkbox"/> | I want to do, but farmers' group does not agree to do it. |
| 4 | <input type="checkbox"/> | Lack of materials and equipment |
| 5 | <input type="checkbox"/> | Lack of Government concern |
| 6 | <input type="checkbox"/> | I am in the process of doing it. |
| 7 | <input type="checkbox"/> | Extension officer does not give me any assistance |
| 8 | <input type="checkbox"/> | Size of land |
| 9 | <input type="checkbox"/> | Bad luck |
| 10 | <input type="checkbox"/> | Lack of enough irrigation water |
| 11 | <input type="checkbox"/> | Lack of enough capital (No access to credit and subsidy) |
| 12 | <input type="checkbox"/> | Other _____ |

10.4 NEEDS

What are your most immediate needs ?

Please select the three (3) most important needs (✓).

- | | | | | | |
|---|--------------------------|-------------------------|----|--------------------------|-----------------------------|
| 1 | <input type="checkbox"/> | Bullock (pair) | 10 | <input type="checkbox"/> | Deep tube well |
| 2 | <input type="checkbox"/> | Bullock cart | 11 | <input type="checkbox"/> | Shallow well (Dug well) |
| 3 | <input type="checkbox"/> | Bullock (Pair) and Cart | 12 | <input type="checkbox"/> | Drip irrigation system |
| 4 | <input type="checkbox"/> | Diesel or Electric Pump | 13 | <input type="checkbox"/> | Sprinkler irrigation system |

- | | |
|---|--|
| 5 <input type="checkbox"/> More land (and/or Consolidated)
6 <input type="checkbox"/> More irrigation water
7 <input type="checkbox"/> Pond or Reservoir
8 <input type="checkbox"/> Deep tube well
9 <input type="checkbox"/> Shallow well (Dug well) | 14 <input type="checkbox"/> More credit
15 <input type="checkbox"/> Market information
16 <input type="checkbox"/> Storage facilities near by
17 <input type="checkbox"/> Technical support / trainings
1 <input type="checkbox"/> Other _____ |
|---|--|

11 IRRIGATION

11.1 Do you think you have sufficient water in Kharif and Rabi seasons for cropping?

SEASON	WATER AVAILABILITY(✓)				
	IRRIGATION			Rainfed	
	Yes	No	Not irrigated	Yes	No
2018 Kharif	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2018 Rabi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	
2019 Kharif	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2019 Rabi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	
2020 Kharif	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2020 Rabi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	
2021 Kharif	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11.2 Do you have any problems specifically on irrigation facilities/system?

Please select the three (3) most serious problems (✓).

- 1 ☐ Far from outlets of minor/sub minor canal
- 2 ☐ Lack of water course/field channel
- 3 ☐ Lack of land leveling of the land
- 4 ☐ Insufficient water management (Water Users' Association activities have not yet been started)
- 5 ☐ Lack of water volume itself in minor/sub minor canal
- ☐ Lack of maintenance skills/funds of facilities/system for irrigation
- 6 ☐ Siltation in minor/sub minor canal
- 7 ☐ Other _____

11.3 Are you aware of any activities (meeting, canal cleaning, and any others) being implemented by Water Users' Association? (✓) Yes____ No____

11.4 Have you attended any activities organized by Water Users' Association? (✓) Yes____ No____

11.5 Once you get irrigation water from some system, some fee and water tax are going to be charged for operation and maintenance of the irrigation system. Do you agree to pay any fee and water tax (though amount has not yet been decided)? (✓) Yes____ No____

If "No", what are the conditions for the agreement of payment?

- 1 ☐ Irrigation water comes to the land sufficiently
- 2 ☐ Water management is properly made
- 3 ☐ Others _____

11.6 If you receive irrigation benefit from irrigation projects, what items do you think important / necessary? (✓)

(Multiple answer)

- | | | |
|---|--------------------------|---|
| 1 | <input type="checkbox"/> | Greater finance requirement |
| 2 | <input type="checkbox"/> | Additional labor required for intensified agriculture |
| 3 | <input type="checkbox"/> | Requirement of on-farm water management by Water Users' Association |
| 4 | <input type="checkbox"/> | Need to activate Water Users' Association |
| 5 | <input type="checkbox"/> | Need to pay water fees and be responsible for the O&M |
| 6 | <input type="checkbox"/> | That women are also expected to become participating in Water Users' Association |
| 7 | <input type="checkbox"/> | That NGOs or community organization will help in activating Water Users' Association and improving water and farm management capacities |
| 8 | <input type="checkbox"/> | Other _____ |

12 CREDIT AND INDEBTEDNESS

12.1 Did you or any other member of your HH borrow money in 2020 (✓) Yes ____ No ____

12.2 If "Yes", who? (✓) Man _____, Woman _____.

12.3 If "Yes", could you please indicate the type, purpose, source, and conditions, as follows:

Item	For Agri. Operating		For buying Agriculture Inputs	For reaching market	For Personal
	Kharif	Rabi			
Source (see code below)					
Purpose (see code below)					
Amount of Loan (Rs.)	Rs.	Rs.	Rs.	Rs.	Rs.
Interest Rate/Year or Month	%	%	%	%	%
Mortgage (see code below)					

* Small scale & cottage industry

Source: A = Cooperative Bank; B = Commercial Bank/RRB; C = Land Development Bank. D = friends and relatives; E = money lenders; F = middlemen/traders in farm products or inputs; G = land owners or machinery owners; H = other.

Purpose: 1= Paddy production; 2 = other crop production; 3 = bullock purchase; 4= machinery purchase; 5 = other farm capital purchases, e.g. land, well; 6 = small scale business. 7 = marriage; 8 = funeral; 9 = other consumption; 10 = other.

Mortgage: a = Real estate (land, house); b = Livestock; c = Personal property (television, motorbike, etc); d = Other; e = None

13 EXTENSION SERVICE

13.1 What are your means of getting the latest information on farming practice ? (✓)

(Multiple answer)

- | | | |
|---|--------------------------|--|
| 1 | <input type="checkbox"/> | Radio programs |
| 2 | <input type="checkbox"/> | TV program |
| 3 | <input type="checkbox"/> | Community meetings and KVK (Krishi Vigyan Kendra) |
| 4 | <input type="checkbox"/> | Agriculture Extension Worker (VAW) |
| 5 | <input type="checkbox"/> | Newspapers, leaflets, other printed material |
| 6 | <input type="checkbox"/> | Word of mouth (other farmer, neighbors, relatives) |
| 7 | <input type="checkbox"/> | Agriculture fairs, farm days, etc. |

- | | | |
|----|--------------------------|-----------------------------------|
| 8 | <input type="checkbox"/> | Own experience |
| 9 | <input type="checkbox"/> | NGO involved in rural development |
| 10 | <input type="checkbox"/> | Other _____ |

13.2 Have members of your household been provided training and/or agricultural extension services during the past year ? (✓) Yes ____ No ____

If "Yes", on what subject have you acquired skills ? (✓)

(Multiple answer)

- | | | |
|---|--------------------------|--|
| 1 | <input type="checkbox"/> | Crop production/cropping pattern/farming practices |
| 2 | <input type="checkbox"/> | Livestock/vaccination/artificial insemination |
| 3 | <input type="checkbox"/> | Fisheries |
| 4 | <input type="checkbox"/> | Cooperative activities/enrollment/share & saving deposits/credit |
| 5 | <input type="checkbox"/> | Land improvement/irrigation/drainage |
| 6 | <input type="checkbox"/> | Horticulture/tree crops |
| 7 | <input type="checkbox"/> | Income generating activities in the household |
| 8 | <input type="checkbox"/> | Other _____ |

13.3 How many times does the village extension worker visit you during the past year ? ____ times/
year

13.4 Do you ever ask any information to the Extension Office/village extension officer ? (✓)
Yes ____ No ____

If your answer is "Yes", for what purpose do you ask? **(Multiple answer)**

- | | | |
|---|--------------------------|--|
| 1 | <input type="checkbox"/> | To get advice on plant protection |
| 2 | <input type="checkbox"/> | To get advice on application of fertilizer |
| 3 | <input type="checkbox"/> | To get advice on water management |
| 4 | <input type="checkbox"/> | To get advice on improvement of farming practices & yields |
| 5 | <input type="checkbox"/> | To get advice on new crop varieties |
| 6 | <input type="checkbox"/> | To get advice on other economic opportunities |
| 7 | <input type="checkbox"/> | To get advice on special women's program |
| 8 | <input type="checkbox"/> | Other _____ |

If your answer is "No", why you do not ask information to the Extension Office/village extension officer ? **(Multiple answer)**

- | | | |
|---|--------------------------|---|
| 1 | <input type="checkbox"/> | My farm is too far away |
| 2 | <input type="checkbox"/> | It is difficult to make contact with those officers to ask for advice |
| 3 | <input type="checkbox"/> | There is no village extension officer in our village |
| 4 | <input type="checkbox"/> | No women extension worker to advise women farmers |
| 5 | <input type="checkbox"/> | Not concerned |
| 6 | <input type="checkbox"/> | Other _____ |

Note: Question 13 to be answered principally by women, or by men and women jointly.

14 ROLE OF WOMEN IN AGRICULTURE

14.1 Do women in this HH own any agriculture land? (✓) Yes ____ No ____

14.2 What farming and marketing activities are mainly/ usually done by women/girls? (**Multiple answer**)

- | | |
|---|---|
| 1 <input type="checkbox"/> Planting | 6 <input type="checkbox"/> Harvesting |
| 2 <input type="checkbox"/> Weeding | 7 <input type="checkbox"/> Packing/
Bundling |
| 3 <input type="checkbox"/> Harvesting | 8 <input type="checkbox"/> Negotiating price when selling |
| 4 <input type="checkbox"/> Threshing / Winnowing / Cleaning | 9 <input type="checkbox"/> Selling in the local market |
| 5 <input type="checkbox"/> Irrigation Water Management | 10 <input type="checkbox"/> Others _____ |

14.3 How much time in a day do women spend in agricultural activities?

Number of hours during farming peak season? _____ hours

Number of hours during farming low season? _____ hours

14.4 How much time in a day do women spend on domestic chores?

No of hours during farming peak season? _____ hours

No of hours during farming low season? _____ hours

14.5 Who makes decision on farming in your family? (✓)

Issues	Mostly Men only	Mostly Women only	Mostly jointly men and women
Which crops to grow			
Which pesticides/ chemicals to use			
What volumes to sell			
Where to sell			
What prices			
Whether to take loan			

14.6 What types of groups do women in your family belong to?

SHG ☐ Farmer Producer Organization/ Company ☐

Cooperatives ☐ Other _____

14.7 Are there any special agricultural extension programs for women? (✓) Yes _____ No _____

If Yes, what kind of activity ? _____

Provided by which institution/organization ? _____

END

2) Check list for Key Informant Interview: Farmers Organization

Informant ID: _____

Date: _____	Name of the Surveyor: _____
-------------	-----------------------------

1. Organizational Profile

1.1 Establishment

Name of the Organization: _____			
Location	District: _____	Block: _____	
	G. Panchayat _____		
	Name of the Contact Person: _____		
	Mobile No: _____		
Type of Organization:			
<input type="checkbox"/> Producer Organization <input type="checkbox"/> Producer Company <input type="checkbox"/> Cooperative <input type="checkbox"/> Autonomous Society <input type="checkbox"/> Trust <input type="checkbox"/> Others (Please specify: _____)			
Year established: _____			
Registration No: _____		Registered Authority: _____	
Executive Members:			
Position	Name	Occupation	Engagement to FO
			Full time/ Part time
			Full time/ Part time
			Full time/ Part time
			Full time/ Part time
			Full time/ Part time
			Full time/ Part time
			Full time/ Part time
			Full time/ Part time
			Full time/ Part time

1.2 Number of Members:

Please tell us the number of members in your organization.

Membership Category	Number of Members	
Individual:	M: _____	F: _____
Groups:	Producer's Group : () SHG: () Cooperative: () JLG: () Other Type of Organization: () (Please specify the type:)	

1.3 What are the main functions of the organization? (Multiple answer)

- ☐ Marketing of agriculture produce ☐ Market information dissemination
☐ Dissemination of information on agriculture (production)
☐ Provide credit to the members ☐ Provide saving function for the members
☐ Provide farm inputs at lower costs to the members
☐ Provide farm machineries for the members

☐ Others (Please specify: _____)

1.4 Facilities of the Organization

Type of facilities	Owned or Rented (Tick where applicable)	O&M (Tick where applicable)
Collection points	<input type="checkbox"/> owned <input type="checkbox"/> rented	<input type="checkbox"/> outsourced <input type="checkbox"/> own
Primary Processing/ Grading Unit	<input type="checkbox"/> owned <input type="checkbox"/> rented	<input type="checkbox"/> outsourced <input type="checkbox"/> own
Packing facilities	<input type="checkbox"/> owned <input type="checkbox"/> rented	<input type="checkbox"/> outsourced <input type="checkbox"/> own
Storage	<input type="checkbox"/> owned <input type="checkbox"/> rented	<input type="checkbox"/> outsourced <input type="checkbox"/> own
Truck	<input type="checkbox"/> owned <input type="checkbox"/> rented	<input type="checkbox"/> outsourced <input type="checkbox"/> own
Motorcycle	<input type="checkbox"/> owned <input type="checkbox"/> rented	<input type="checkbox"/> outsourced <input type="checkbox"/> own
Office	<input type="checkbox"/> owned <input type="checkbox"/> rented	<input type="checkbox"/> outsourced <input type="checkbox"/> own
Others: (Please specify: _____)	<input type="checkbox"/> owned <input type="checkbox"/> rented	<input type="checkbox"/> outsourced <input type="checkbox"/> own

1.5 Financial Status of the organization in the past 3 years

a) What is the main source of revenue for the organization?

- ☐ Membership fee ☐ Margin taken from the sales of produces
☐ Financial Assistance from Government/ NGO/ Donor Project etc.

(Please specify: _____)

☐ Others (Please specify: _____)

b) What were the annual turn over of the organization in the past 3 years?

FY 2018	FY 2019	FY 2020

2. Support for Organization

2.1 What are the types of technical and financial supports does your organization receive and from which organization?

Name of the Organisation/ Company/ Individual	Type of Organisation	Please describe the type of assistance you receive
	<input type="checkbox"/> Government <input type="checkbox"/> NGO <input type="checkbox"/> Private <input type="checkbox"/> Individual	

	<input type="checkbox"/> Others ()	
	<input type="checkbox"/> Government <input type="checkbox"/> NGO <input type="checkbox"/> Private <input type="checkbox"/> Individual <input type="checkbox"/> Others ()	
	<input type="checkbox"/> Government <input type="checkbox"/> NGO <input type="checkbox"/> Private <input type="checkbox"/> Individual <input type="checkbox"/> Others ()	

*If an NGO is working with the organization, please schedule a follow up interview.

3. Marketing

3.1 What are the main commodities dealt with and their volumes and selling prices in FY 2020?

Produce	Volumes collected (kg)	Volumes sold (kg)	Unit value per kg	Main Buyer (Please indicate code)

Code: 1. Local trader 2. Inter state Trader 3. Retailers (Big Bazaar, Reliance etc.) 4. Local market 5. Processing industry 6. Others (Please specify)

3.2 When you procure the produce from your members, do you pay them in cash or on credit?

☐ Cash payment on the spot (please go to (a)) ☐ Pay them later (please go to (b))

(a) If the payment is in cash, how do you meet the fund?

☐ Savings/ capital fund of the organization ☐ loan from financial institutions (i.e. bank, MFI, etc.)

☐ Others ()

(b) If the payment is made later, when do you pay them?

☐ On an average 1 week later ☐ On an average 2-3 months later

3.3 When you sell, do you get the payment from the buyers in cash on the spot or on credit?

☐ Cash payment on the spot ☐ On credit

3.4 How do you identify the market?

--

3.5 What are the sources of market information?

- ☐ eNam ☐ from other farmers ☐ from extension workers
☐ Other sources (Please specify: _____)

3.6 When you decide to sell the produce, what are the most important factors do you take into account?

- ☐ Unit price ☐ Accessibility to the selling point ☐ Approach by the buyer/ trader
☐ Others (Please specify: _____)

3.7 What is the benefit sharing mechanism among the members? Please describe.

4. Challenges

4.1 What are the challenges in marketing the produce? Please tick where applicable.

- | Tick | Challenges |
|--------------------------|----------------------------------|
| <input type="checkbox"/> | Lack of price information |
| <input type="checkbox"/> | Lack of means of transportation |
| <input type="checkbox"/> | Lack of storage facilities |
| <input type="checkbox"/> | Lack of knowledge in quality |
| <input type="checkbox"/> | Lack of capital |
| <input type="checkbox"/> | Price is always low) |
| <input type="checkbox"/> | Unable to negotiate |
| <input type="checkbox"/> | Others: (Please specify: _____) |
| <input type="checkbox"/> | Others: (Please specify: _____) |
| <input type="checkbox"/> | Others: (Please specify: _____) |
| <input type="checkbox"/> | Others: (Please specify: _____) |

5. Brand

5.1 Please tell us the strengths and weaknesses of the produces that you are dealing with.

Strenghts	Weaknesses

5.2 If you see the produces from other locations/ states, how do you compare the produce that you are dealing with?

Particulars	Responses
Appearance	
Taste	

Scent	
Color	
Freshness	
Price	
Packing	
Promotion	
Timing of marketing	

5.3 Do the members of your organization know about Uttarakhand brand? ☐ Yes ☐ No

5.4 What do you do to promote Uttarakhand brand?

5.5 What are the advantages of Uttarakhand as a brand?

5.6 How Uttarakhand brand can be improved?

6. Indian Agriculture Acts of 2020 (Farm Bills)

6.1 Are you aware of Farm Bills 2020? Very Well ☐ Somewhat ☐ Do not Know ☐

6.2 In your view, how are your members affected by this bills? Please tell us 3 points seriously affecting the members and your organisation.

6.2.1 Members

Positive	Negative
1.	1.
2.	2.
3.	3.

6.2.2 Your Organisation

Positive	Negative
1.	1.
2.	2.

3.	3.
----	----

7. In your view, to promote vegetables and fruits supply chain, what types of policies and interventions needed?

--

END

3) Check list for Key Informant Interview: Supply Chain Stakeholders

Informant ID:

Enumerator:	Date:
-------------	-------

1. Informant

Name of the Company/ Office/ Organization:

Location (District/ Block/ G. Panchayat or

Municipality):

Name of the Informant:

Mobile Phone No:

2. Business Profile

Please tell us the type of business activities that your company/ office/ organization are engaged. (Please tick where applicable.)

No	Type of business activities	Please tick if Yes
1	Buying farm produce and selling or processing them	
2	Transporting farm produce	
3	Organizing an auction of farm produce	
4	Grading/sorting/packing farm produce before marketing	
5	Storing farm produce for a certain period	
6	Processing farm produce (dry, juice, puree, jam, pickles, etc.)	
7	Providing market information to farmers (prices, quality needs, etc.)	
8	Providing farmers technical assistance to improve crop productivity and quality	
9	Providing or arranging farm inputs to farmers	
10	Providing or arranging advance payment or credit to farmers	
<Describe other services if the participants have>		

3. Commodities

3.1 Please tell us five popular crops and their reasons.

No	Names of the Crops	Reasons
1		
2		
3		
4		
5		

3.2 Please tell us five promising crops in the area in the future and their reasons.

No	Names of the Crops	Reasons
1		
2		
3		
4		
5		

4. Markets

What are the next destination of the produces that you handle? Please indicate the destination and approximate % of the volumes sold to each destination.

No	Main crops handled	Destination 1		Destination 2		Destination 3	
1			%		%		%
2			%		%		%
3			%		%		%

4			%		%		%
5			%		%		%

5. Margin

Please share the % of margin against the sourcing rates.

No	Main crops handled	Destination 1		Destination 2		Destination 3	
1			%		%		%
2			%		%		%
3			%		%		%
4			%		%		%
5			%		%		%

6. Sourced volume and Loss

What are the % of losses during various stages of transaction?

No	Main crops handled	Total Sourced Volume (Kg)	Total Volume of Loss (Kg)	Loss at storage (A)	Loss during packing (B)	Loss during transportation (C)	Loss during processing (D)
1				%	%	%	%
2				%	%	%	%
3				%	%	%	%
4				%	%	%	%
5				%	%	%	%

Remarks: A, B, C, D shall be estimated against the total volume of loss.

7. Quality

7.1 When you source the produces for local and/ or high-end market, what are the most important factor that you consider?

No	Crop	Target Market	Quality Factor Please indicate the code below.					
			Fresh /Shiny	Color	Shape	Size	Smell/ Aroma	Other Important Factor (Specify)
		Local						
		High end						
		Local						
		High end						
		Local						
		High end						
		Local						
		High end						
		Local						
		High end						

Code: 1. Critically important 2. Important 3. Pay a little attention 4. No attention

7.2 What are the critical issues do you find when you procure the following crops?

N o	Crop	Quality Factor (Please indicate the code below where applicable)		
		Serious	Some-times	Not Serious

Code: 1 Not fresh, 2 Much damage due to rough handling, 3 Improper packing, 4 Not clean (not washed), 5 Not well sorted (various size, shape, maturity, etc.), 6 Mixed with foreign matter (intentionally for increasing volume/weight), 7 Small lot volume, 8 Unstable supply,

9. Others (Please specify:)

8. Brand

8.1 Do you see the advantage in Uttarakhand as a brand in the market? ☐ Yes ☐ No

If yes, what are the advantages?

8.2 What are the current image/ assessment of Uttarakhand as a brand?

8.3 What can be improved to gain better value as a brand? What are your expectations on Uttarakhand as brand?

9. Intention for Value Addition

If you have any plans to invest in facilities./ equipment for enhancing the value of commodities, please briefly tell us.

10. Views on Supply Chain Promotion Policy of the Government

Please tell us your view on the supply chain promotion policy for fruits and vegetables of the Government.

11. Economic Implication of Improvement in Storage Facilities

11.1 In your view, are the values of the commodity enhanced by introducing the following storage facilities?

Type of Storage	Commodities				
Cold Storage					
CA Storage					

Code: 1. Highly likely, 2. Not likely, 3. Not needed, 4. No point in investing, 5. Already proper storage available, 6. Others (Please specify:)

11.2 In the above, if you feel the values of a particular commodity can be enhanced by improving the storage facilities, please tell us to what extent it will enhance the value. For instance, % increment from the current profit margin.

Commodity	% added to the current profit margin	Other points to be noted

END

4) Questionnaire for High-end Business Operators in a Vegetables & Fruits Supply Chain

Code No.		Date of interview	(day)/	(month)/	(year)
----------	--	-------------------	--------	----------	--------

A General Information

A-1	Name of Company/Business Operator	
A-2	Name of Respondent & Position	
A-3	Location of the Office	
A-4	Tel No. & E-mail	

B Business Type (tick applicable one)

B-1 Business Type	Yes	B-2 Major Customers/Market	
		a. In UK	b. Outside UK
(1) Supermarket Chain			
(2) Food Processing			
(3) Restaurant			
(4) Hotel			
(5) Exporter			
(6) Other (Specify:)			

C Procurement of Vegetables & Fruits for your Business Operation

C-1 List important vegetables & fruits in your business operation (up to 5 commodities)

Vegetables & Fruits
(1)
(2)
(3)
(4)
(5)

C-2 List promising vegetables & fruits considering your future business operation (up to 5 commodities)

Vegetables & Fruits	Reason to choose (see foot note & add brief explanation)
(1)	
(2)	
(3)	
(4)	
(5)	

(Note) 1: Increasing market demand 2. Increasing local production 3. Government policy 4. Other (specify in cell)

C-2 Major suppliers of the vegetables & fruits

Vegetables & Fruits (see C-1)	Major Supplier (see footnote)
(1)	
(2)	
(3)	
(4)	
(5)	

(Note) 1: Middleman/Wholesaler 2. Retailer 3. Farmers/FPO 4. Other (specify in the cell)

C-3 Reasons for choosing the suppliers in C-2 (see footnote)

Vegetables & Fruits (see C-1)	a. Stable supply	b. Reasonable price	c. High quality produce	d. Long relation	e. Other (specify in the cell)
(1)					
(2)					
(3)					
(4)					
(5)					

(Note) 1: Highly Yes 2. Yes 3. NA

C-4 Dissatisfaction with the suppliers in C-2 (see footnote)

Vegetables & Fruits (see C-1)	a. Late supply	b. High price	c. Low quality	d. Failure in agreement	e. Other (specify in the cell)
(1)					
(2)					
(3)					
(4)					
(5)					

(Note) 1: Yes 2. To some extent 3. No

C-5 Important quality factor of the vegetables & fruits (tick applicable cells)

Vegetables & Fruits (see C-1)	a. Fresh/ Shiny	b. Color	c. Shape	d. Size	e. Smell/ Aroma	f. Other (specify in the cell)
(1)						
(2)						
(3)						
(4)						
(5)						

D Contract Farming with Farmers/FPO

D-1 Experience in contract farming for the procurement of vegetables & fruits

(1) Yes ☐ (2) No ☐

D-2 Positive image/expectation/experience in contract farming

Image/Expectation/Experience	tick applicable cell		
	Highly	Slightly	No
(1) Low procurement cost			
(2) High quality of produce			
(3) Stable procurement			
(4) Social contribution (good reputation in running business)			
<Describe additional one if the respondent has>			

D-3 Negative image/expectation/experience in contract farming

Image/Expectation/Experience	tick applicable cell		
	Highly	Slightly	No
(1) High procurement cost			
(2) Low quality of produce			
(3) Unstable procurement			
(4) Many troubles with farmers in managing the contract			
<Describe additional one if the respondent has>			

E Market Information Source

Information Sources	a. Familiar Source (see footnote)			b. Reliability (see footnote)		
E-1 People in the same business						
E-2 Commission agents						
E-3 Traders/Middlemen						
E-4 APMC						
E-5 Websites (AGMRAKNET, etc.)						
E-6 TV/Radio programs						
E-7 Newspapers/Magazines						
<Add other source if there is>						

(Note) 1: Very much 2. To some extent 3. Less/No

F Investment Plan

F-1 On-going investment plan to promote prosperity of the business

(1) Yes ☐ (go to F-2 & F-3) (2) No ☐ (skip F-2 & F-3)

F-2 If Yes, make a brief explanation of the investment plan

--

F-3 If Yes, expecting government supporting scheme if you have

a.Name of the Govt Scheme	b. Nodal Office/Department	c.Type of Assistance (see footnote & conditions)

(Note) 1: Credit 2. Grant 3. Technical Assistance 4. Other (Specify)

G Government Policy Measures to facilitate the Development of Vegetables & Fruits Supply Chain

G-1 Interesting policy measures

Policy Measures	tick applicable cell		
	Highly	Slightly	No
(1) Introducing/developing new crops or new varieties			
(2) Improving farmers' skills in growing crops			
(3) Improving post-harvest handling skills of farmers			
(4) Promoting contract-farming			
(5) Promoting to organize farmers in FPOs/FPCs, cooperatives, etc.			
(6) Improving post-harvest handling skills of traders/middlemen			
(7) Disseminating market information among stakeholders			
(8) Building a workable quality standard & inspection system			
(9) Facility construction & renovation of APMC markets to streamline the distribution			
(10) Promoting private operated markets			
(11) Promoting cold chain networks			
(12) Improving road networks & facilities			
(13) Disseminating information of new technologies			
(14) Enhancing capacity development programs/services for the private sector to promote their business operation			
(15) Enhancing financial support programs for the private sector to promote their investment			
(16) Promoting business partnership between local companies and outside companies including international companies			
(17) Introducing capital inflow from other states/countries			
<Describe additional one if the respondent has>			

G-2 Make additional comments about the government policy

--

H Comments on Indian Agriculture Acts of 2020 (Farm Bills)

- The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020
- Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020
- Essential Commodities (Amendment) Act, 2020

<Favorable comments>

No	Favorable Comments

<Negative comments>

No	Negative Comments

END

5) Check list for Key Informant Interview: Supporting Actors

Informant ID:

Enumerator:	Date:
-------------	-------

12. Informant

Name of the Company/ Office/ Organization:

Location (District/ Block/ G. Panchayat or

Municipality):

Name of the Informant:

Mobile Phone No:

13. Nature of Business/ Services offered to the Farmers/ Farmers' Organization

Please tell us the type of business activities that your company/ office/ organization are engaged. (Please tick where applicable.)

No	Nature of Business	Please tick if Yes
1	Financial Institution (Loan/ Credit facilities)	
2	Agriculture related Technology Company	
3	Farm Input Supplier (seeds, chemicals, planting materials, farm equipment, etc.)	
4	Packaging Material Supplier	
5	NGO supporting Farmers' Organization	
6	Technical Training	
7	Others()	
8	Others()	

14. Commodities

14.1 In your view, what are the five popular crops and their reasons.

No	Names of the Crops	Reasons
1		
2		
3		
4		
5		

14.2 In your view, what are the five promising crops in the area in the future and their reasons.

No	Names of the Crops	Reasons
1		
2		
3		
4		
5		

15. Challenges faced by the farmers

What are the common issues faced by the farmers/ your clients?

	Issues
Production Technology	
Seeds and Planting Materials	
Agro chemicals	
Storage	
Transportation	

Processing/ value addition	
Marketing	
Finance	
Others	

16. What are the difficulties that you face while delivering your services to the farmers/ farmers' organizations?

17. What are the interventions required for the horticulture in Uttarakhand to gain stronger market recognition?

7. Brand

7.1 Do you see the advantage in Uttarakhand as a brand in the market? ☐ Yes ☐ No

If yes, what are the advantages?

7.2 What are the current image/ assessment of Uttarakhand as a brand?

7.3 What can be improved to gain better value as a brand? What are your expectations on Uttarakhand as brand?

8. Views on Supply Chain Promotion Policy of the Government

Please tell us your view on the supply chain promotion policy for fruits and vegetables of the Government.

9. Interventions taken by the government in relation to Farm Law and your views on the interventions

9.1 Please tell us the interventions taken by the government in relation to Farm Law.

9.2 What are your views on the government interventions?

END

Preliminary Findings from the Supply Chain Survey

(Farm Household Survey)

1. Introduction

The farm household survey as part of the Supply Chain Survey was conducted in the selected crop clusters in 4 districts of Nainital, Pithoragarh, Tehri Garhwal and Uttarkashi based on the questionnaire designed by the survey team in July 2021. In total 57 villages were surveyed. In this survey in order to capture the perspectives of Male Headed Households (MHH) and Female Headed Households (FHH). 115 households or 35.9% of sample households comprise of the total sample households of 320. There is a high percentage of female headed households in the sample in Pithoragarh. According the field data collection team in Pithoragarh, this is due to the male out migration. The estimated ratio of de-facto FHH is currently under processing and will be reported in the final report.

The summary of the sample households is given in the table below and the survey findings are presented in the subsequent sections.

Table 1.1 Survey Clusters and Households

District	Block	Crop	Cluster Name	Type of Households		
				FHH*	MHH**	Total
Nainital	Bhimtal	Tomato	Alchouna	1	19	20
	Haldwani	Garlic	Kuwarpur		20	20
	Ramgarh	Peach	Ramgarh	8	12	20
	Ramnagar	Litchi	Ramnagar		20	20
	Total			9	71	80
Pithoragarh	Berinag (1)	Sweet Orange	Udhyari	16	4	20
	Berinag (2)	Turmeric	Koteshwer	11	9	20
	Gangolighat	Garlic	Kuntola	15	5	20
	Vin	Apple	Bhilot to Baman	14	6	26
	Total			56	24	80
Tehri Garhwal	Chamba	Ginger	Khadi	4	18	22
	Fakot (Narendra Nagar)	Plum	Chopriar Gaon	10	8	18
	Jaunpur	Potato/ Pea	Batwaldhar	10	10	20
	Thauldhar	Pea/ Potato	Jwarana	7	13	20
	Total			31	49	80
Uttarkashi	Bhatwari	Potato	Gorsali	6	14	20
	Dunda	Kiwifruits	Dunda	2	18	20
	Mori	Apple	Aarakot	3	17	20
	Naugaon	Walnut	Gangtadi	8	12	20
	Total			19	61	80
Total (Counts)				115	205	320

Note: *FHH=Female Headed Household; **MHH: Male Headed Household

Source: Supply Chain Survey, JICA Survey Team

Remarks 1: There has been an error in data entry in block names in Pithoragarh. The data is in the process of recalculation for Pithoragarh. However, this has not affected the overall results of the calculation. Due to the time constraints, in this preliminary report, block names in Pithoragarh may not be consistent in all the sections and the tables in Attachment. This shall be corrected in the final report.

Remarks 2: Unless indicated, the "Total No of HH" in this survey refers to FHH=115 HHs, MHH=205 HHs and Total = 320.

2. Characteristics of the Sample Households

2.1 Demography

The total number of females in the survey area was 642 and that of male was 758. The average household size was 4.4 in four districts. Among the informants, 97.5% of households follow Hinduism. Out of the total number of survey household, 179 households or 55.9% are general and 115 households or 35.9% were OBC (Attachment 1 - Table 0-4).

Table 2.1 Demographic Characteristics of the Sample Households

District	Block	Demographic Characteristics			
		Male	Female	Total	Average HH size
Nainital	Bhimtal	53	40	93	4.7
	Haldwani	51	40	91	4.6
	Ramgarh	49	30	79	4.0
	Ramnagar	59	42	101	5.1
	Total	212	152	364	4.6
Pithoragarh	Berinag (1)	35	42	77	3.9
	Berinag (2)	33	46	79	4.0
	Gangolighat	38	46	84	4.2
	Vin	50	45	95	4.8
	Total	156	179	335	4.2
Tehri Garhwal	Chamba	50	46	96	4.4
	Fakot	41	38	79	4.4
	Jaunpur	47	33	80	4.0
	Thauldhar	53	45	98	4.9
	Total	191	162	353	4.4
Uttarkashi	Bhatwari	44	34	78	3.9
	Dunda	57	40	97	4.9
	Mori	52	31	83	4.2
	Naugaon	46	44	90	4.5
	Total	199	149	348	4.4
Total (Counts)		780	781	1,400	4.4

Source: Supply Chain Survey, JICA Survey Team

2.2 Entitlements

To understand the socio-economic background of the survey households, the informants were asked to share the information on the entitlement documents issued by the government. 61.9% or 198 household hold BPL status and 20.6% or 66 households responded as APL. 10 households indicated holding Antyodaya status, which provides the most vulnerable households to purchase food grains at the subsidized rate. 29 households or 9.1% of the total number of households indicated that they hold MGNREGA card. The gender segregated data showed that the 87 households or 75.7% of the FHHs identified themselves as BPL while that of MHH was 54.1% of the total number of MHHs. The proportion of APL households among MHHs was 24.4% and that of FHHs was 13.9%. For the data table please see Attachment 1 - Table 0-3. .

Table 2.2 Socio Economic Background by Entitlements

District	Block	BPL	Antyodaya	MGNREGA	Old Age Pension	Anupama Yojana	APL	Total
Nainital	Bhimtal	10	1	0	0	0	0	11
	Haldwani	5	0	0	0	0	15	20
	Ramgarh	9	0	2	0	0	0	11
	Ramnagar	4	0	0	0	0	13	17
	Total	28	1	2	0	0	28	59
Pithoragarh	Berinag (1)	14	3	0	0	0	3	20
	Berinag (2)	15	1	0	0	0	3	19
	Gangolighat	20	0	0	0	0	0	20
	Vin	13	0	0	0	0	5	18
	Total	62	4	0	0	0	11	77
Tehri Garhwal	Chamba	15	0	0	0	0	6	21
	Fakot	5	1	0	0	0	10	16
	Jaunpur	19	0	0	0	0	0	19
	Thauldhar	19	1	1	1	0	0	22
	Total	58	2	1	1	0	16	78
Uttarkashi	Bhatwari	18	0	1	0	0	0	19
	Dunda	7	3	0	0	0	10	20
	Mori	9	0	15	0	0	0	24
	Naugaon	16	0	10	0	0	1	27
	Total	50	3	26	0	0	11	90
Total (Counts)		198	10	29	1	0	66	304

District	Block	BPL	Antyodaya	MGNRE GA	Old Age Pension	Anupama Yojana	APL	Total
% (N=320)		61.9	3.1	9.1	0.3	0.0	20.6	95.0

Source: Supply Chain Survey, JICA Survey Team

2.3 Membership to Various Groups

Out of the total household, 57.5% of the total number of households indicated that they were members of some kind of group. Most common group type that the respondent households had membership was the cooperative. 36.6% of the informants had membership of cooperative. SHG membership remained to the tune of 25.9%. FPO and FPC s were yet to be common. 8.7 % or 10 households took part in FPO and 1 household in FPC. The membership to FPO appeared to be less among women. In total, FHH had 75.7% of the membership to some organisation whereas the figure for MHH remained 47.3%.

Table 2.3 Membership to Various Groups

District	Block	FPO			FPC			Cooperative		
		FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal			0			0			0
	Haldwani			0			0			0
	Ramgarh			0			0			0
	Ramnagar			0			0			0
	Total	0	0	0	0	0	0	0	0	0
Pithoragarh	Berinag (1)			0			0	2	1	3
	Berinag (2)			0			0	1	2	3
	Gangolighat			0			0	5		5
	Vin	1		1		1	1	4	2	6
	Total	1	0	1	0	1	1	12	5	17
Tehri Garhwal	Chamba		2	2			0	3	11	14
	Fakot	1	1	2			0	2	4	6
	Jaunpur	3	6	9			0	9	7	16
	Thauldhar			0			0			0
	Total	4	9	13	0	0	0	14	22	36
Uttarkashi	Bhatwari			0			0	3	8	11
	Dunda			0			0			0
	Mori			0			0			0
	Naugaon			0			0			0
	Total	0	0	0	0	0	0	3	8	11
Total (Counts)		10	18	28	0	2	2	55	62	117
% (N= Total No of HHs)		8.7	8.8	8.8	0.0	1.0	0.6	47.8	30.2	36.6

District	Block	SHG			FIG			Total No of Responses		
		FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal			0			0	0	0	0
	Haldwani			0			0	0	0	0
	Ramgarh	4	3	7	2	2	4	6	5	11
	Ramnagar			0			0	0	0	0
	Total	4	3	7	2	2	4	6	5	11
Pithoragarh	Berinag (1)	7		7			0	9	1	10
	Berinag (2)			0			0	1	2	3
	Gangolighat	10		10			0	15	0	15
	Vin	4		4	5	3	8	14	6	20
	Total	21	0	21	5	3	8	39	9	48
Tehri Garhwal	Chamba	1	8	9		1	1	4	22	26
	Fakot	4	3	7			0	7	8	15
	Jaunpur			0			0	12	13	25
	Thauldhar	5	10	15			0	5	10	15
	Total	10	21	31	0	1	1	28	53	81
Uttarkashi	Bhatwari	4	7	11		5	5	7	20	27
	Dunda		5	5			0	0	5	5
	Mori			0			0	0	0	0
	Naugaon	4	4	8	3	1	4	7	5	12

District	Block	SHG			FIG			Total No of Responses		
		FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total
	Total	8	16	24	3	6	9	14	30	44
Total (Counts)		43	40	83	10	12	22	87	97	184
% (N= Total No of HHs)		37.4	19.5	25.9	8.7	5.9	6.9	75.7	47.3	57.5

Source: Supply Chain Survey, JICA Survey Team

2.4 Land Holding Status

88.7% of the FHHs and 65.9% of MHHs are marginal farmers owning the land less than 1 ha or 2.5 acre. The proportion of small and semi medium and large farmers are higher among the MHHs in comparison to that of FHHs. The proportion of semi-medium farmers is the highest in Nainital. Nainital has large scale farmers while none was reported in other districts.

Table 2.4 Land Holding Status

District	Block	Marginal (<1 ha or 2.5 ac)			Small (1-2 ha or 2.5-5 ac)			Semi Medium and Medium (2 ha - 10 ac)		
		FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal	1	16	17		1	1		2	2
	Haldwani		3	3		10	10		2	2
	Ramgarh	3	5	8	5	7	12			0
	Ramnagar		6	6		7	7		6	6
	Total	4	30	34	5	25	30	0	10	10
Pithoragarh	Berinag (1)	16	4	20			0			0
	Berinag (2)	11	9	20			0			0
	Gangolighat	13	5	18	2		2			0
	Vin	13	5	18			0			0
	Total	53	23	76	2	0	2	0	0	0
Tehri Garhwal	Chamba	3	15	18		1	1	1	1	2
	Fakot	8	7	15	1	1	2	1		1
	Jaunpur	10	10	20			0			0
	Thauldhar	7	10	17		3	3			0
	Total	28	42	70	1	5	6	2	1	3
Uttarkashi	Bhatwari	6	13	19		1	1			0
	Dunda	2	16	18		2	2			0
	Mori	2	1	3	1	12	13		2	2
	Naugaon	7	10	17	1		1			0
	Total	17	40	57	2	15	17	0	2	2
% (N= Total No of HHs)		88.7	65.9	74.1	8.7	22.0	17.2	1.7	6.3	4.7

District	Block	Large (10 ha+ or 20 ac+)			Total No of Counts		
		FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal			0	1	19	20
	Haldwani		5	5	0	20	20
	Ramgarh			0	8	12	20
	Ramnagar		1	1	0	20	20
	Total	0	6	6	9	71	80
Pithoragarh	Berinag (1)			0	16	4	20
	Berinag (2)			0	11	9	20
	Gangolighat			0	15	5	20
	Vin			0	13	5	18
	Total	0	0	0	55	23	78
Tehri Garhwal	Chamba			0	4	17	21
	Fakot			0	10	8	18
	Jaunpur			0	10	10	20
	Thauldhar			0	7	13	20
	Total	0	0	0	31	48	79
Uttarkashi	Bhatwari			0	6	14	20
	Dunda			0	2	18	20
	Mori			0	3	15	18
	Naugaon			0	8	10	18
	Total	0	0	0	19	57	76

District	Block	Large (10 ha+ or 20 ac+)			Total No of Counts		
		FHH	MHH	Total	FHH	MHH	Total
Total (Counts)		0	6	6	114	199	313
% (N= Total No of HHs)		0.0	2.9	1.9	35.6	62.2	97.8

Source: Supply Chain Survey, JICA Survey Team

2.5 Main Crop

The crops cultivated during Kharif included paddy, finger millet and potato. Tomato and peas were also grown. During Rabi, mustard, potato, tomato are grown along with barley and what. Please see Attachment 1 - Table 0-7 (3).

2.6 Access to Irrigation

In Kharif, 26.6% of households had access to irrigation. The proportion of FHHs having access to irrigation (17.4%) was almost half of what was reported among the MHHs (31.7%). In Rabi season, the use of irrigation becomes even less. Only 10% of the total number of HHs use irrigation during the season. The main water source was reported to be canal in both seasons (Attachment 1 - Table 0-7(2)).

Table 2.5 Access to Irrigation

(a) Kharif

District	Block	Kharif - Rainfed			Kharif - Irrigated		
		FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal	1	9	10	1	18	19
	Haldwani		7	7		13	13
	Ramgarh	5	7	12	2	6	8
	Ramnagar		6	6		14	14
	Total	6	29	35	3	51	54
Pithoragarh	Berinag (1)	11	4	15			0
	Berinag (2)	7	9	16			0
	Gangolighat	7	5	12	4		4
	Vin	13	4	17	1		1
	Total	38	22	60	5	0	5
Tehri Garhwal	Chamba	3	15	18			0
	Fakot	7	7	14	5	2	7
	Jaunpur	5	9	14	2	4	6
	Thauldhar	5	10	15	3	2	5
	Total	20	41	61	10	8	18
Uttarkashi	Bhatwari	6	8	14			0
	Dunda			0	1	5	6
	Mori	3	15	18		1	1
	Naugaon	6	11	17	1		1
	Total	15	34	49	2	6	8
Total (Counts)		79	126	205	20	65	85
% (N= Total No of HHs)		67.8	61.5	64.1	17.4	31.7	26.6

Source: Supply Chain Survey, JICA Survey Team

(b) Rabi

District	Block	Rabi - Rainfed			Rabi - Irrigated		
		FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal	1	3	4	1	9	10
	Haldwani		2	2		3	3
	Ramgarh	2	2	4	2	2	4
	Ramnagar		4	4		4	4
	Total	3	11	14	3	18	21
Pithoragarh	Berinag (1)	9	2	11			0
	Berinag (2)	9	6	15			0
	Gangolighat	6	2	8			0
	Vin	7	1	8	1		1
	Total	31	11	42	1	0	1
	Chamba	3	13	16		1	1

District	Block	Rabi - Rainfed			Rabi - Irrigated		
		FHH	MHH	Total	FHH	MHH	Total
Tehri Garhwal	Fakot	2	3	5	2		2
	Jaunpur	4	6	10	2	1	3
	Thauldhar	4	9	13	2	1	3
	Total	13	31	44	6	3	9
Uttarkashi	Bhatwari	2	2	4			0
	Dunda			0			0
	Mori	2	13	15		1	1
	Naugaon	5	7	12			0
	Total	9	22	31	0	1	1
Total (Counts)		56	75	131	10	22	32
% (N= Total No of HHs)		48.7	36.6	40.9	8.7	10.7	10.0

Source: Supply Chain Survey, JICA Survey Team

2.7 Main Source of Household Income

Most frequently mentioned income source was vegetable cultivation which accounts for 71.3% of the total number of households mentioned followed by animal husbandry/ dairy by 48.1% and earning from the agriculture labour which accounted for 40% of the households. Other sources include fruits cultivation, paddy, other cereal cultivation and wages from non-agriculture labour work. The details are given in the Attachment 1 - Table 0-8.

2.8 Education and Occupation of population 18 years and older

For women, 24.4% of the 18 + population have completed secondary education and 17.2% completed higher education. 17.5 % of women of the same group stopped at the primary level. On the other hand, 31.9% of male of 18; completed higher education and 31% completed secondary education. Those left education at primary level is nearly half of the percentage of women. For both 14.8% of men and 11.4% of women completed graduate level higher education. (Attachment 1 - Table 1.2)

2.9 Occupation

The main occupation of the 18+ population was the agriculture/ cultivation. For women, along with farming activities, they do household work as secondary work. Agriculture labour was frequently indicated as secondary occupation for men. (Attachment 1 - Table 1.3)

2.10 Living Conditions

(1) Housing and Access to Electricity

All the surveyed household, 66.9% of informants live in the permanent structured house. 27.8% of houses are mixture of temporary and permanent structures. 98.1% out of total sample households indicated that they are connected with electricity supply. (Attachment 1 - Table 2.1 & 2.2)

(2) Health and Nutrition

Common ailment is overwhelmingly fever. Food intake is across the age groups, 3 times a day was dominant. The infants irrespective of gender tend to eat more often. The common food items consumed at home comprise of vegetable, rice, milk, fruits and cereals. The average annual consumption of food these food items was 352 kg for vegetable, 324kg for rice, 168kg for fruits. As for mil, 1,050 kg was calculated for milk and curds. These figures were as per the responses given by the informants. Some other informants had given itemized volumes. For instance, for vegetables, they indicated potato, tomato, peas etc., apple and orange for fruits ,and milk/ curds or milk or ghee and cheese whereas most informants indicated category of food items. (Attachment 1 - Table 2.3.3)

a) Food Items Sourced from Own Farm

Among the food items, 77.2% of the households procure vegetables from own farm. The volume of cereals, fruits, milk, rice, vegetables and wheat sourced from own farm are given in Table 2.7 below. (Attachment 1 - Table 2.3.4)

Table 2.6 Items Procured from Own Farm

District	Block	Cereals	Fruits	Milk	Rice	Vegetables	Wheat	Total
Nainital	Bhimtal	5	3	5		15		28
	Haldwani	20	13	14		20		67
	Ramgarh		15	1		16		40
	Ramnagar	8	16	6		6		36
Pithoragarh	Berinag	32	17	19	8	37	8	128
	Gangolighat	15	2	5	5	20	5	56
	Vin	1	2	1	4	5	4	21
	Vind	2	3	5	8	15	12	55
Tehri Garhwal	Chamba		3	15	4	19	4	70
	Fakot		3	6	12	11	2	54
	Jaunpur	3	10	11	1	15	5	67
	Thauldhar	4	7	11		14	6	62
Uttarkashi	Bhatwari	1	1	15		9	14	70
	Dunda	18	8	6	2	16	2	58
	Mori		11		7	11	2	41
	Naugaon		8	7	19	18	11	92
Total (Counts)		109	122	127	70	247	75	945
% to Total no of HH		34.1	38.1	39.7	21.9	77.2	23.4	
Total Annual Average Volume (kg)		347.9	55.5	318.5	120.9	132.9	136.9	164.7

Source: Supply Chain Survey, JICA Survey Team

b) Food Items Sourced through PDS

Cereals, flour, rice and wheat are mainly sourced through PDS. The average volume of these items procured through PDS was 227.6 kg of cereals and 113.1 kg of wheat, 79.6 kg of rice and 37.5 kg of flour per household respectively.

Table 2.7 Food Items Source through PDS and Annual Average Volume Procured in kg

District	Block	Cereals	Flour	Rice	Wheat	Total
Nainital	Bhimtal	16				16
	Haldwani	20				20
	Ramgarh	14	3	4		21
	Ramnagar	16				16
Pithoragarh	Berinag	32		8	8	50
	Gangolighat	15		5	5	25
	Vin	1		4	4	9
	Vind	2		12	12	28
Tehri Garhwal	Chamba		10	20	11	
	Fakot		14	14	3	
	Jaunpur	3		11	12	
	Thauldhar	4	5	5	6	
Uttarkashi	Bhatwari	2	1	15	14	35
	Dunda	18		1	2	21
	Mori		4	20	15	39
	Naugaon		7	18	10	44
Total (Counts)		143	44	137	102	447
% to Total no of HH		44.7	13.8	42.8	31.9	
Total Annual Average Volume (kg)		227.6	37.5	79.6	113.1	130.3

Source: Supply Chain Survey, JICA Survey Team

c) Sourced from Market

62.2% of the households purchases vegetables from the market and 45.0% of them procures fruits from the market. For the cereals, rice and wheat the volume purchased from the market is many folds of what is consumed from their own production.

Table 2.8 Food Items Sourced from Market

District	Block	Cereals	Fruits	Milk	Rice	Vegetables	Wheat	Total
Nainital	Bhimtal	5	6			5		16
	Haldwani	13	17	10		13		53
	Ramgarh	16	15	4		15		58
	Ramnagar	8	17			18		43
Pithoragarh	Berinag	23	31	1	7	34	8	110
	Gangolighat	1	6		5	19	5	40
	Vin	1	2		3	5	4	18
	Vind	2	3		11	13	10	48
Tehri Garhwal	Chamba		7	10	20	18	11	
	Fakot		9	10	15	15	2	
	Jaunpur	2	1	5		4	1	
	Thauldhar	2	1	7		6	5	
Uttarkashi	Bhatwari	2	4	7	12	3	2	40
	Dunda		17	16		16		53
	Mori		1	4	16	1	16	53
	Naugaon		7	3	17	14	9	74
Total (Counts)		75	144	77	106	199	73	873
Total (% to the Total Counts of Responses)		5.4	10.4	5.6	7.7	14.4	5.3	63.2
% to Total no of HH		23.4	45.0	24.1	33.1	62.2	22.8	
Total Annual Average Volume (kg)		1,068.0	300.0	955.9	753.8	777.9	1,260.7	716.0

Source: Supply Chain Survey, JICA Survey Team

Names of the markets that the survey households procure these foods are given in the table below.

Table 2.9 Names of the Market from where the Food Items are Purchased

District	Block	Cereals	Fruits	Milk	Rice	Vegetables	Wheat
Nainital	Bhimtal	Bhimtal, Chai	Bhimtal, Haldwani	Bhimtal market, Haldwani		Bhimtal	
	Haldwani	Devla malla, Haldwani, Local market	Haldwani	Devla malla, Haldwani		Devla malla, Haldwani	
	Ramgarh	Local Market	Local Market	Local market	Ramgarh		
	Ramnagar	Ramnagar Market	Ramnagar	Ramnagar market		Ramnagar	
Pithoragarh	Berinag	Berinag, Local Market	Berinag, Local Market			Berinag, Thauldhar	
	Gangolighat		Local Market			Gangolighat	
	Vin		Pithoragarh		Pithoragarh	Pithoragarh	Pithoragarh
	Vind						
Tehri Garhwal	Chamba				Chamba	Chamba	
	Fakot				Khadi	Khadi	
	Jaunpur	Local market		From village, Local market			Local market
	Thauldhar			From village, Local market		Chamba, Satyon, Thauldhar	Satyon, Thauldhar
Uttarkashi	Bhatwari		Uttarkashi local market	Local Market	Local market, Uttarkashi	Uttarkashi	
	Dunda		Local market, Kamad	Local Market, Kamad		Khadi	
	Mori			Local Market	Local market	Khadi	Local market
	Naugaon		Badkot, Local market	Local Market	Badkot, Local market	Badkot, Khadi	Local market

Source: Supply Chain Survey, JICA Survey Team

Purchasing of the food items are largely done by male household members for both FHH and MHH.

Table 2.10 Family Members Buying Food Items in the Market

District	Block	Male Adult			Female Adult			Total No of Responses
		FHH	MHH	Total	FHH	MHH	Total	
Nainital	Bhimtal	1	19	20	1	7	8	28
	Haldwani		20	20		5	5	25
	Ramgarh	7	12	19	1		1	20
	Ramnagar		19	19		10	10	29
Pithoragarh	Berinag	24	12	36	24	11	35	71
	Gangolighat	14	5	19	2	5	7	26
	Vin	5		5	5		5	10
	Vind	9	5	14	9	3	12	26
Tehri Garhwal	Chamba	4	15	19		11	11	30
	Fakot	9	7	16	8	3	11	27
	Jaunpur	10	6	16	1		1	17
	Thauldhar	7	11	18	4	9	13	31
Uttarkashi	Bhatwari	6	12	18	1	1	2	20
	Dunda	2	18	20	2	17	19	39
	Mori	3	15	18		5	5	23
	Naugaon	7	12	19	1	3	4	23
Total (Counts)		108	188	296	59	90	149	445
Total (% to the Total Counts of Responses)				66.5			33.5	
% to the Total HH		93.9	91.7	92.5	51.3	43.9	46.6	93.9

Source: Supply Chain Survey, JICA Survey Team

d) Other Vegetables and Fruits Consumed from Own Farm

Many items were indicated by the informants that they take from own farm. The following items were most frequently mentioned by the informants. These included cabbage, capsicum, tomato, potato and peas. Further details are given in Attachment 1 - Table 2.3.4.

Table 2.11 Other Items Consumed from Own Farm

District	Block	Cabbage	Capsicum	Peas	Potato	Tomato
Nainital	Bhimtal	5	1	4	6	6
	Haldwani		1	3	3	7
	Ramgarh	2	10	6	3	1
	Ramnagar			3	3	2
Pithoragarh	Berinag	13	21	2	12	9
	Gangolighat	7	10			
	Vin		2			
	Vind	3	12	4	5	5
Tehri Garhwal	Chamba	2	4	1	4	2
	Fakot	1		1	1	1
	Jaunpur	1		3	3	5
	Thauldhar	7	3	7	7	2
Uttarkashi	Bhatwari	5		1	2	1
	Dunda	3	2	1	1	2
	Mori	10	8	7	2	5
	Naugaon	7	7	3	3	8
Total (Counts)		66	81	46	55	56
% to the Total HH		20.6	25.3	14.4	17.2	17.5

Source: Supply Chain Survey, JICA Survey Team

e) Deficiency in Nutrition

85% of the households indicated that they are lacking nutrition. FHH feels less nutritional deficiency in comparison to MHH. Wide variety of fruits and vegetables that the survey household indicated to add

to their everyday diet, which included apple, banana, broccoli, cheese (paneer), jackfruits and etc (Attachment 1 - Table 2.3.6)

Table 2.12 Sense of Nutritional Deficiency

District	Block	Yes (Deficient)			No (Not Deficient)		
		FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal		1	1	1	18	19
	Haldwani		2	2		17	17
	Ramgarh			0	8	11	19
	Ramnagar			0		19	19
Pithoragarh	Berinag			0	26	11	37
	Gangolighat			0	15	5	20
	Vin			0	5		5
	Vind			0	9	4	13
Tehri Garhwal	Chamba		2	2	2	15	17
	Fakot		1	1	9	6	15
	Jaunpur		1	1	9	8	17
	Thauldhar			0	7	11	18
Uttarkashi	Bhatwari		7	7	3	3	6
	Dunda			0	1	13	14
	Mori			0	3	15	18
	Naugaon			0	8	10	18
Total (Counts)		0	14	14	106	166	272
% to the Total HH		0.0	6.8	4.4	92.2	81.0	85.0

Source: Supply Chain Survey, JICA Survey Team

(3) Fuel Consumption

53.8% of the total households still use wood and charcoal for household energy but the gas cylinder usage has reached 85.6%. Despite the availability of electricity, only 25% of the households was using it for household energy. The survey results also suggested that the cow dung cake was not used as household energy any longer while it is still a common practice for many households in the region to keep cattle at home. The detail is given in Attachment 1 - Table 2.4.1.

Table 2.13 Household Energy

District	Block	Forest Product (Wood, Charcoal, Other)			Electricity			Gas Cylinder		
		FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal		4	4		16	16	1	21	22
	Haldwani		2	2		13	13		13	13
	Ramgarh			0			0	8	12	20
	Ramnagar		1	1		17	17		17	17
Pithoragarh	Berinag	20	4	24	6		6	11	13	24
	Gangolighat		2	2		1	1	15	5	20
	Vin	5		5			0	5		5
	Vind	7	2	9			0	9	5	14
Tehri Garhwal	Chamba	2	17	19	1	1	2	4	17	21
	Fakot	9	8	17			0	9	8	17
	Jaunpur	4	4	8	4	1	5	9	7	16
	Thauldhar	5	9	14	2	2	4	5	11	16
Uttarkashi	Bhatwari	3	13	16		3	3	4	12	16
	Dunda	2	16	18	2	11	13	2	15	17
	Mori	3	12	15			0	3	15	18
	Naugaon	6	12	18			0	6	12	18
Total (Counts)		66	106	172	15	65	80	91	183	274
% to the Total HH		57.4	51.7	53.8	13.0	31.7	25.0	79.1	89.3	85.6

Source: Supply Chain Survey, JICA Survey Team

(4) Asset Ownership

95.9% of the households own TV. Mobile phone is owned by 95.6%. Motorcycle is owned by one third of the total survey households. Further details are given in Attachment 1 - Table 2.5.

Table 2.14 Household Assets

District	Block	TV			Motorcycle			Mobile Phone		
		FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total
Nainital	Bhimtal	1	19	20		5	5	1	19	20
	Haldwani		20	20		16	16		20	20
	Ramgarh	8	12	20	4	6	10	8	12	20
	Ramnagar		20	20		14	14		17	17
Pithoragarh	Berinag	24	13	37	3	2	5	26	13	39
	Gangolighat	15	5	20	12		12	15	5	20
	Vin	5		5			0	5		5
	Vind	9	4	13	1		1	9	5	14
Tehri Garhwal	Chamba	4	15	19	1	3	4	3	17	20
	Fakot	9	7	16	5	4	9	8	7	15
	Jaunpur	10	9	19	9	1	10	10	8	18
	Thauldhar	7	12	19	3	4	7	7	12	19
Uttarkashi	Bhatwari	6	14	20	1	5	6	6	14	20
	Dunda	2	18	20		2	2	2	18	20
	Mori	3	16	19		2	2	3	16	19
	Naugaon	8	12	20	1	2	3	8	12	20
Total (Counts)		111	196	307	40	66	106	111	195	306
% to the Total HH		96.5	95.6	95.9	34.8	32.2	33.1	96.5	95.1	95.6

Source: Supply Chain Survey, JICA Survey Team

3. land Holding and Land Tenure

Out of 320 households, 288 households responded that they own land. The average size of the land owned by FHH is 1.8 acre and 2.4 acre for MHH. Out of which, 1.2 ha is under cultivation among the FHH and 2 acres for MHHs. Average size of Non irrigated lands was 1 acre for FHH and 1.2 acre for MHH. In this area, renting in and out of land was not common.

Table 3.1 Total Land Owned

District	Block	FHH		MHH		Total	
		No of Responses	Average (ac.)	No of Responses	Average (ac.)	No of Responses	Average (ac.)
Nainital	Bhimtal			13	5.3	13	5.3
	Haldwani			7	6.0	7	6.0
	Ramgarh	8	3.0	12	2.7	20	2.8
	Ramnagar			16	1.9	16	1.9
Pithoragarh	Berinag	26	0.9	13	1.1	39	1.0
	Gangolighat	15	3.1	5	0.4	20	2.4
	Vin	5	1.4			5	1.4
	Vind	9	1.7	5	1.8	14	1.8
Tehri Garhwal	Chamba	3	1.7	17	2.7	20	2.5
	Fakot	9	1.5	8	1.4	17	1.4
	Jaunpur	10	1.4	10	1.5	20	1.4
	Thauldhar	7	2.1	13	2.5	20	2.3
Uttarkashi	Bhatwari	5	1.7	14	1.8	19	1.8
	Dunda	2	1.5	17	2.3	19	2.2
	Mori	3	2.5	16	3.2	19	3.1
	Naugaon	8	1.9	12	1.5	20	1.6
Total		110	1.8	178	2.4	288	2.2

Source: Supply Chain Survey, JICA Survey Team

The access to irrigation was indicated to be limited as shown in 2.6. However, in this question, higher proportion of households have shown the ownership of irrigated land. This may imply the mal functioning of the irrigation facilities or lack of water sources for irrigation.

Table 3.2 Irrigated Land Owned

District	Block	FHH		MHH		Total	
		No of Responses	Average (ac.)	No of Responses	Average (ac.)	No of Responses	Average (ac.)
Nainital	Bhimtal	1	0.2	19	3.9	20	3.7
	Haldwani			19	6.7	19	6.7
	Ramgarh	8	0.4	12	0.6	20	0.5
	Ramnagar			14	2.0	14	2.0
Pithoragarh	Berinag	7	0.3	3	0.5	10	0.3
	Gangolighat	10	1.1			10	1.1
	Vin	1	0.5			1	0.5
	Vind	5	0.5			5	0.5
Tehri Garhwal	Chamba			2	0.3	2	0.3
	Fakot	7	2.0	6	0.1	13	1.1
	Jaunpur	8	0.7	10	0.9	18	0.8
	Thauldhar	4	0.8	10	0.7	14	0.7
Uttarkashi	Bhatwari					0	
	Dunda	2	0.8	18	0.8	20	0.8
	Mori					0	
	Naugaon	4	0.4	5	0.2	9	0.3
Total (Counts)		57	0.8	118	2.3	175	1.8
% to Total HHs		49.6		57.6		54.7	

Source: Supply Chain Survey, JICA Survey Team

Orchard is owned by 32.8% of the total survey households. The average size of orchard is more than 2 acres in Ramnagar in Nainital and Chamba in Tehri Garhwal followed by Mori in Uttarkashi (1.9 acre) and Gangolighat (1.8 acre). The average size of orchard owned by FHH is 57% smaller than that of MHH. The detail is given in Attachment 1 - Table 3.1 onwards.

Table 3.3 Irrigated Land Owned

District	Block	FHH		MHH		Total	
		No of Responses	Average (ac.)	No of Responses	Average (ac.)	No of Responses	Average (ac.)
Nainital	Bhimtal			2	0.3	2	0.3
	Haldwani					0	
	Ramgarh	7	0.8	9	1.3	16	1.0
	Ramnagar			16	2.2	16	2.2
Pithoragarh	Berinag	1	0.5	2	0.2	3	0.3
	Gangolighat	5	1.8			5	1.8
	Vin	3	0.3			3	0.3
	Vind	4	0.3	3	0.3	7	0.3
Tehri Garhwal	Chamba	1	2.0			1	2.0
	Fakot	2	0.8	1	0.2	3	0.6
	Jaunpur	7	0.6	2	0.3	9	0.5
	Thauldhar	4	0.8	4	0.8	8	0.8
Uttarkashi	Bhatwari			1	0.2	1	0.2
	Dunda			1	0.5	1	0.5
	Mori	3	1.8	16	2.0	19	1.9
	Naugaon	4	0.2	7	0.3	11	0.2
Total (Counts)		41	0.8	64	1.4	105	1.2
% to Total HHs		35.7		31.2		32.8	

Source: Supply Chain Survey, JICA Survey Team

4. Farming Practices

4.1 Compost Application

Compost is known by the vast majority of the households in the survey area and compost application is actually practiced as much as 79.7% of the households.

Table 4.1 Knowledge and Application of Compost

District	Block	Know about Compost			Apply Compost		
		Yes	No	Total	Yes	No	Total
Nainital	Bhimtal	15		15	13		13
	Haldwani	11		11	12		12
	Ramgarh	20		20	20		20
	Ramnagar	14	1	15	15		15
	Total	60	1	61	60	0	60
Pithoragarh	Berinag (1)	19		19	18	1	19
	Berinag (2)	20		20	19	1	20
	Gangolighat	16		16	17		17
	Vin	14		14	14		14
	Total	69	0	69	68	2	70
Tehri Garhwal	Chamba	17	4	21	19	3	22
	Fakot	14	3	17	12	6	18
	Jaunpur	16		16	16		16
	Thauldhar	14		14	14		14
	Total	61	7	68	61	9	70
Uttarkashi	Bhatwari	13		13	17		17
	Dunda	15		15	15		15
	Mori	19		19	17	2	19
	Naugaon	17	1	18	17		17
	Total	64	1	65	66	2	68
Total		254	9	263	255	13	268
% to Total (N=320)		79.4	2.8	-	79.7	4.1	-

Source: Supply Chain Survey, JICA Survey Team

(1) Application of Green Manure

The types of green manure were not specified but 81 households or 28.8% of the total no of households indicated the application of green manure. Green manure is applied to almost all the crops grown by the survey households. Green manure appeared to be applied to all crops but particularly so with potato, paddy, and pea. The farmers procure green manure from the local sources, home, forest and agriculture department. The volume applied could not be processed due to the error in data.

(2) Coarse Materials

34 households across the districts apply coarse materials like straws, sawdust, wood chip and etc. The crops that the farmers apply coarse materials to any crops that they grow (14 households mentioned that they apply.) included beans, tomato and garlic. The materials are locally procured. The volume applied could not be processed due to the error in data.

(3) Animal Origin

31.3% of the households indicated that they apply manure deriving from animal. Commonly used manure was cow dung, but majority did not specify the type. Animal origin manure is applied to all crops, but particular mentioning included litchi, mango, vegetables, wheat and paddy. The volume applied could not be processed due to the error in data.

4.2 Farm inputs

(1) Farm Machineries Owned

Various farm machineries are owned by the surveyed households. The type of machineries, no of households owning, average number of machineries used, price and annual maintenance cost are reported in Attachment 1 - Table 5.1. The data of farm machineries of which the number of owners were high is presented hereunder.

a. Tractor

Tractor was only owned in farm households in Nainital and those in Gangolighat in Pithoragarh. The average cost of tractor was 373, 389 INR and annual maintenance cost of 37,982 INR.

Table 4.2 Ownership and Usage of Tractor

District	Block	No of HH Using	Average No of Machineries Used	Average Price of the Machineries	Average Annual Maintenance Cost
Nainital	Bhimtal	1	1	405,000	40,000
	Haldwani	9	1	518,889	28,444
	Ramgarh	1	1	20,000	1,667
	Ramnagar	3	1	416,667	103,333
	Total	14	1	453,214	43,405
Pithoragarh	Berinag (1)	1	1	80,000	40,000
	Berinag (2)				
	Gangolighat	3	1	98,667	12,000
	Vin				
	Total	4	1	94,000	19,000
Tehri Garhwal	Chamba				
	Fakot				
	Jaunpur				
	Thauldhar				
	Total				
Uttarkashi	Bhatwari				
	Dunda				
	Mori				
	Naugaon				
	Total				
Total		18	1	373,389	37,982

Source: Supply Chain Survey, JICA Survey Team

b. Power Tiller

Power Tiller was owned by the households across the survey districts. Each household is owning 1 power tiller on an average. The average price of power tiller was 31,789 and annual maintenance cost was 7,772 INR.

Table 4.3 Ownership and Usage of Power Tiller

District	Block	No of HH Using	Average No of Machineries Used	Average Price of the Machineries	Average Annual Maintenance Cost
Nainital	Bhimtal	4	1	20,875	16,950
	Haldwani	2	1	28,000	10,000
	Ramgarh	5	1	21,516	1,491
	Ramnagar		1		
	Total	11	1	22,462	6,419
Pithoragarh	Berinag (1)	1	1	100,000	15,000
	Berinag (2)				
	Gangolighat				
	Vin	1	1	140,000	7,000
	Total	2	1	120,000	11,000
Tehri Garhwal	Chamba	1	3	18,000	5,000
	Fakot				
	Jaunpur	3	1	25,667	10,000
	Thauldhar	5	1	25,000	4,000
	Total	9	1	24,444	5,400
Uttarkashi	Bhatwari	1	1	24,000	24,000
	Dunda				
	Mori				
	Naugaon				
	Total	1		24,000	24,000
Total		23	1	31,786	7,772

Source: Supply Chain Survey, JICA Survey Team

c. Cattle

Cattle is not a machinery but is the most common source of power to plough. Across the survey districts 163 households owned 2 cattle on an average. The cost of purchasing was 41,261 INR on an average with an annual maintenance cost of 19,160 INR.

Table 4.4 Ownership and Usage of Cattle

District	Block	No of HH Using	Average No of Machineries Used	Average Price of the Machineries	Average Annual Maintenance Cost
Nainital	Bhimtal	9	4	91,889	34,000
	Haldwani	5	2	58,000	13,000
	Ramgarh				
	Ramnagar	1	3	200,000	100,000
	Total	15	3	87,800	31,400
Pithoragarh	Berinag (1)	8	2	19,250	18,750
	Berinag (2)	12	1	26,250	28,750
	Gangolighat	20	2	27,050	15,470
	Vin	6	2	42,500	35,000
	Total	46	2	27,500	21,764
Tehri Garhwal	Chamba	9	1	30,000	8,556
	Fakot	6	1	45,833	14,200
	Jaunpur	19	2	41,729	21,583
	Thauldhar	19	3	60,067	16,545
	Total	53	2	46,516	15,919
Uttarkashi	Bhatwari	13	2	19,083	17,250
	Dunda	20	2	60,035	9,789
	Mori				
	Naugaon	16	2	14,567	20,400
	Total	49	2	35,068	14,270
Total		163	2	41,261	19,160

Source: Supply Chain Survey, JICA Survey Team

d. Plough

Plough is owned by 98 households. Each household owns 2 ploughs on an average. The tendency is that the plough is owned mostly by the survey households in Tehri Garhwal and Uttarkashi. The cost of acquiring the plough was 3,562 INR with an average annual maintenance cost of 2,483 INR.

Table 4.5 Ownership and Usage of Plough

District	Block	No of HH Using	Average No of Machineries Used	Average Price of the Machineries	Average Annual Maintenance Cost
Nainital	Bhimtal	2	1	1,000	1,000
	Haldwani				
	Ramgarh				
	Ramnagar				
	Total	2	1	1,000	1,000
Pithoragarh	Berinag (1)				
	Berinag (2)				
	Gangolighat				
	Vin	2	1	1,750	500
	Total	2	1	1,750	500
Tehri Garhwal	Chamba	9	1	5,533	3,200
	Fakot	3	1	1,400	500
	Jaunpur	13	3	3,740	1,689
	Thauldhar	17	3	5,188	1,591
	Total	42	2	4,589	1,941
Uttarkashi	Bhatwari	16	2	4,755	5,312
	Dunda	16	2	2,953	1,600
	Mori	2	1	1,500	1,500
	Naugaon	18	1	1,689	1,900
	Total	52	2	2,979	3,345
Total		98	2	3,562	2,483

Source: Supply Chain Survey, JICA Survey Team

e. Sprayer

Sprayer was owned by 76 households. In Bhimtal and Ramgarh in Nainital, the number of sprayers used was 5 and 4 machines respectively, which was the highest among the reported figures. The informants more commonly own 1-2 sprayers. The price of sprayer was reported to be 2,320 with a range between 200 INR to 20,000 INR. The annual maintenance cost was arrived at 2,837 INR.

Table 4.6 Ownership and Usage of Sprayer

District	Block	No of HH Using	Average No of Machineries Used	Average Price of the Machineries	Average Annual Maintenance Cost
Nainital	Bhimtal	4	5	2,200	833
	Haldwani	4	1	4,750	1,225
	Ramgarh	1	4	20,000	1,666
	Ramnagar	2	1	3,000	
	Total	11	3	4,667	1,133
Pithoragarh	Berinag (1)	2	1	750	
	Berinag (2)	11	1	1,000	
	Gangolighat	5	1		
	Vin	18	1	1,433	
	Total	36	1	1,292	
Tehri Garhwal	Chamba	11	1	991	1,575
	Fakot	1	1	18,000	
	Jaunpur	8	2	2,438	4,688
	Thauldhar	4	2	2,375	5,000
	Total	24	2	2,413	3,988
Uttarkashi	Bhatwari	1	1	200	200
	Dunda				
	Mori				
	Naugaon	4	1	1,675	700
	Total	5	1	1,380	450
Total		76	1	2,320	2,837

Source: Supply Chain Survey, JICA Survey Team

(2) Agrochemicals**a. Sources of Chemicals and Fertilizers**

77.8% of the survey households procure chemicals and fertilizers from the local shop. Other sources included Farmers' Organization and trader.

Table 4.7 Sources of Chemicals and Fertilizers

District	Block	Local Shop	Farmers' Organization	Trader	Others
Nainital	Bhimtal	18	2	15	15
	Haldwani	15	12	16	14
	Ramgarh	7	9		
	Ramnagar	19	10	19	17
	Total	59	33	50	46
Pithoragarh	Berinag (1)	19		1	
	Berinag (2)	18	5		1
	Gangolighat	12		8	
	Vin	20			
	Total	69	5	9	1
Tehri Garhwal	Chamba	19	2	4	4
	Fakot	17	7	2	4
	Jaunpur	13	11	5	
	Thauldhar	19	13	8	
	Total	68	33	19	8
Uttarkashi	Bhatwari	1	2		3
	Dunda	19	1	1	
	Mori	18	2	1	
	Naugaon	15	8		
	Total	53	13	2	3
Total		249	84	80	58
% (N=320)		77.8	26.3	25.0	18.1

Source: Supply Chain Survey, JICA Survey Team

b. Purposes of Chemical Application

64.4% of the households use the chemicals for disease and 55.9% for insect. 36.3% of households use for weed control. Usage of chemical fertilizer for the crop was limited to 36.6% of households.

Table 4.8 Purposes of Chemical Application

District	Block	For Crop	For Disease	For Inset	Weed	Total
Nainital	Bhimtal	10	16	18	11	55
	Haldwani	11	12	11	7	41
	Ramgarh	10	4	8		22
	Ramnagar	4	20	18	18	60
	Total	35	52	55	36	178
Pithoragarh	Berinag (1)	1	17	7	2	27
	Berinag (2)	6	17	11		34
	Gangolighat	1	13	10	1	25
	Vin	15	20	20	7	62
	Total	23	67	48	10	148
Tehri Garhwal	Chamba	15	16	12	8	51
	Fakot	6	15	3		24
	Jaunpur	8	11	10	12	41
	Thauldhar	10	15	17	13	55
	Total	39	57	42	33	171
Uttarkashi	Bhatwari			1		1
	Dunda	1	7	4	9	21
	Mori	2	6	12	17	37
	Naugaon	17	17	17	11	62
	Total	20	30	34	37	121
Total		117	206	179	116	618
% (N=320)		36.6	64.4	55.9	36.3	-

Source: Supply Chain Survey, JICA Survey Team

c. Which Instructions Followed

Application of agro chemicals needs to be done as per the instructions. Thus, the informants were asked to indicate which type of instructions they followed when applying the agro chemicals. 65.9% of the households followed the amount to apply and 42.8% followed the instruction of when to apply.

Table 4.9 Instructions for Chemical Application That were Followed

District	Block	Dilution	Amount	Application Timing	Other Conditions	Total
Nainital	Bhimtal	7	15	15	1	38
	Haldwani	6	12	11	2	31
	Ramgarh		15	4		19
	Ramnagar	11	15	17	5	48
	Total	24	57	47	8	136
Pithoragarh	Berinag (1)		16	9	2	27
	Berinag (2)		19	12		31
	Gangolighat	4	14	7		25
	Vin	7	20	14		41
	Total	11	69	42	2	124
Tehri Garhwal	Chamba	11	16	9		36
	Fakot	1	14	4		19
	Jaunpur	2	11	3		16
	Thauldhar	4	7	7		18
	Total	18	48	23	0	89
Uttarkashi	Bhatwari					0
	Dunda			14		14
	Mori	1	19	2		22
	Naugaon	1	18	9		28
	Total	2	37	25	0	64
Total		55	211	137	10	413
% (N=320)		17.2	65.9	42.8	3.1	-

Source: Supply Chain Survey, JICA Survey Team

d. Protection from Chemicals

While applying agro chemicals, the one who is applying in the field as well as the neighbours need to be taken care. Among the survey households 71.9% of the households protect the one who is applying the agro chemicals, but much less care was given to the neighbours.

Table 4.10 Protection from Chemicals

District	Block	Protected Self	Protected Neighbor	Total
Nainital	Bhimtal	15	3	18
	Haldwani	9	3	12
	Ramgarh	11		11
	Ramnagar	19	5	24
	Total	54	11	65
Pithoragarh	Berinag (1)	15		15
	Berinag (2)	17		17
	Gangolighat	19		19
	Vin	17		17
	Total	68	0	68
Tehri Garhwal	Chamba	14		14
	Fakot	12	1	13
	Jaunpur	17	5	22
	Thauldhar	16	6	22
	Total	59	12	71
Uttarkashi	Bhatwari	2	1	3
	Dunda	19	6	25
	Mori	11	8	19
	Naugaon	17	9	26
	Total	49	24	73
Total		230	47	277
% (N=320)		71.9	14.7	86.6

Source: Supply Chain Survey, JICA Survey Team

e. Records of Chemicals Applied

Out of the survey households, 22.5% of the households across the survey districts kept the records of the agro chemicals applied. The number of farmers keeping records were high in Gangolighat in Pithoragarh and Ramnagar in Nainital. (Attachment 1 - Table 5.3 (4))

(3) Hired Farm Machineries in 2020

Not many households indicated that they hire farm machineries. Tractor, cattle and plough were the most frequent responses during the survey. The data of these three items are given here under and that of other items are given in Attachment 1 - Table 5.4.

a. Tractor

The tractor was mostly hired by the farmers in Nainital. The average annual hiring charge was 35,450 INR.

Table 4.11 Hired Farm Machineries - Tractor

District	Block	No of HH Hired	No of Machineries Hired	Average Annual Hire Charges
Nainital	Bhimtal			
	Haldwani	9	1	48,150
	Ramgarh			
	Ramnagar	5	1	24,480
	Total	14	1	40,260
Pithoragarh	Berinag (1)	3	1	31,700
	Berinag (2)			
	Gangolighat			
	Vin			
	Total	3	1	31,700
Tehri Garhwal	Chamba			5,000
	Fakot			
	Jaunpur	1	1	5,000
	Thauldhar			
	Total	1	1	5,000
Uttarkashi	Bhatwari			
	Dunda			
	Mori			
	Naugaon			

	Total			
Total		18	1	35,450

Source: Supply Chain Survey, JICA Survey Team

b. Cattle and Plough

Cattle was mostly hired in Tehri Garhwal. Mostly 2 cattle were hired. The average hiring rate was not consistent and could not be verified. The average charges for hiring cattle last year were 15,550 INR. (Attachment Table 5.4 (4)).

Similar to cattle, plough was hired in Tehri Garhwal and Uttarkashi. On an average, a pair of plough were hired. The cost of hiring the plough during 2020 was 2,088 INR. (Attachment 1 - Table 5.4.(5))

5.1 Production of Various Crops

In the Season of Kharif, tomato, cabbage, potato, and capsicum are cultivated by 50% of the survey households across 4 districts. During the dry season of Rabi, potato is cultivated mostly in Tehri Garhwal and Uttarkashi. Crop and season wise production area, volume and unit yield is given in Attachment 2.

5. Marketing

5.2 Where to sell the produce mainly (Attachment 1 - Table 7.1)

(1) Nainital

In Nainital APMC market yard and apni mandi were main locations for selling their produces. The distance to APMC market yard in Nainital was more than 20km from the home of the informants and the distance to apni mandi was 5 to 10 km or 20 km or farther.

Table 5.1 Access to Market - Nainital

Type of the Market	Experienced Farmers	Frequency	Distance from you house
At Home/ Farm Gate	0	NA	
At the Crop Field/ Farm	0	NA	
Collection Point in the village	6	No answer	No answer
Collection point outside the village	0	NA	
APMC market yard	57	Common: 34 Sometimes: 7 No answer: 16	< 5 km: 0, 5-10 km: 1, 10-20 km: 7, > 20 km: 19, No answer: 30
Apni mandi	24	Common: 18 Sometimes: 3 No answer: 3	< 5 km: 0, 5-10 km: 5, 10-20 km: 2, > 20 km: 5, No answer: 12
Others	0	NA	
No Marketing	1		

Source: Supply Chain Survey, JICA Survey Team

(2) Pithoragarh

In the case of Pithoragarh, APMC market yard was common location for selling their produces. For many informants it is farther than 20 km from their houses. Otherwise, local markets and shops were used for selling the produces which are within the range of 10-20 km from their home.

Table 5.2 Access to Market - Pithoragarh

Type of the Market	Experienced Farmers	Frequency	Distance from you house
At Home/ Farm Gate	0	NA	
At the Crop Field/ Farm	0	NA	
Collection Point in the village	0	NA	
Collection point outside the village	0	NA	

APMC market yard	40	Common: 18 Sometimes: 5 No answer: 17	< 5 km: 0, 5-10 km: 6, 10-20 km: 3, > 20 km: 14, No answer: 17
Apni mandi	15	Common: 15 Sometimes: 0 No answer: 0	< 5 km: 0, 5-10 km: 1, 10-20 km: 2, > 20 km: 12, No answer: 0
Others (Local markets, Local shops)	27	Common: 8 Sometimes: 9 No answer: 10	< 5 km: 7, 5-10 km: 0, 10-20 km: 14, > 20 km: 0, No answer: 6
No Marketing	0		

Source: Supply Chain Survey, JICA Survey Team

(3) Tehri Garhwal

In Tehri Garhwal and Uttarkashi, most commonly place where the farmers sell their produces was collection point outside of the village. The distance between the house and the collection point is more than 20 km.

Table 5.3 Access to Market – Tehri Garhwal

Type of the Market	Experienced Farmers	Frequency	Distance from you house
At Home/ Farm Gate	2	Sometimes: 2	
At the Crop Field/ Farm	2	Common: 2	
Collection Point in the village	47 (Cooperatives, Local markets, Local shops)	Common: 19 Sometimes: 24 No answer: 4	< 5 km: 4, 5-10 km: 17, 10-20 km: 2, >20 km: 6, No answer: 18
Collection point outside the village	57 (Coop Federations, Local markets)	Common: 16 Sometimes: 38 No answer: 3	< 5 km: 4, 5-10 km: 9, 10-20 km: 2, > 20 km: 14, No answer: 28
APMC market yard	19	Common: 3 Sometimes: 15 No answer: 1	< 5 km: 0, 5-10 km: 1, 10-20 km: 1, > 20 km: 3, No answer: 14
Apni mandi	38	Common: 20 Sometimes: 15 No answer: 3	< 5 km: 0, 5-10 km: 4, 10-20 km: 0, > 20 km: 17, No answer: 17
Others	3	Common: 2 Sometimes: 1	< 5 km: 0, 5-10 km: 0, 10-20 km: 0, > 20 km: 2, No answer: 1
No Marketing	10		

Source: Supply Chain Survey, JICA Survey Team

Table 5.4 Access to Market - Uttarkashi

Type of the Market	Experienced Farmers	Frequency	Distance from you house
At Home/ Farm Gate	0	NA	
At the Crop Field/ Farm	0	NA	
Collection Point in the village	9 (Local markets)	Common: 2 Sometimes: 7	< 5 km: 0, 5-10 km: 1, 10-20 km: 5, >20 km: 2, No answer: 1
Collection point outside the village	39 (Local markets in Uttarkashi and Dehradun)	Common: 14 Sometimes: 7 No answer: 3	< 5 km: 0, 5-10 km: 0, 10-20 km: 1, > 20 km: 28, No answer: 10
APMC market yard	1	Sometimes: 1	< 5 km: 0, 5-10 km: 0, 10-20 km: 1, > 20 km: 0
Apni mandi	0	NA	NA
Others (Local market)	25	Common: 19 Sometimes: 7	< 5 km: 1, 5-10 km: 0, 10-20 km: 5, > 20 km: 2, No answer: 17
No Marketing	7		

Source: Supply Chain Survey, JICA Survey Team

5.3 Main Buyers of the Produces

(1) Nainital

Across all crops, buyers are the traders in APMC market in the case of Nainital.

Table 5.5 Main Buyers - Nainital

Crop	No of Answers	Buyers						
		Farmers' Organization (FPO/FPC)	Village collector	Trader in APMC market yard	Local retailer	Consumer	Inter-state middleman	Supermarket/Processor/Exporter/Hotel
Tomato	34	0	0	34	0	0	0	0
Peas	20	0	0	20	0	0	0	0
Potato	16	0	0	16	0	0	0	0
Capsicum	14	0	0	14	0	0	0	0
Onion	5	0	0	5	0	0	0	0
Cabbage	4	0	0	4	0	0	0	0
Okra	1	0	0	1	0	0	0	0
Vegetables	5	0	0	5	0	0	0	0
Garlic	14	0	0	14	0	0	0	0
Litchi	18	0	0	15	2	0	8	0
Peach	15	0	0	15	0	0	0	0
Apricot	13	0	0	13	0	0	0	0
Mango	10	0	0	8	2	0	0	0
Pear	8	0	0	8	0	0	0	0
Apple	2	0	0	2	0	0	0	0
Kiwifruit	1	0	0	1	0	0	0	0
Fruits	5	0	0	5	0	0	0	0
Pulses & Beans	14	0	0	14	0	0	0	0
Paddy	28	0	0	26	2	0	0	0
Wheat	21	0	0	19	2	0	0	0
Maize	3	0	0	3	0	0	0	0
Sugarcane	3	0	0	3	0	0	0	0
Total	254	0	0	245	8	0	8	0

Source: Supply Chain Survey, JICA Survey Team

(2) Pithoragarh

In Pithoragarh, all the crops except paddy are sold to the local retailers. Potato, tomato, cabbage, capsicum can be bought by the Farmers' Organization and directly by the consumer.

Table 5.6 Main Buyers - Pithoragarh

Crop	No of Answers	Buyers						
		Farmers' Organization (FPO/FPC)	Village collector	Trader in APMC market yard	Local retailer	Consumer	Inter-state middleman	Supermarket/Processor/Exporter/Hotel
Potato	20	7	0	2	16	8	0	0
Tomato	11	9	0	0	11	10	0	0
Cabbage	10	6	0	0	10	5	0	0
Capsicum	8	7	0	1	8	7	0	0
Cauliflower	3	3	0	0	3	1	0	0
Radish	3	3	0	0	3	1	0	0
Onion	2	1	0	0	2	1	0	0
Peas	1	1	0	0	1	0	0	0
Vegetables	51	3	0	4	47	9	0	0
Ginger	14	0	0	4	12	1	0	0
Garlic	9	2	0	2	7	2	0	0
Apple	3	0	0	2	1	0	0	0
Pear	3	0	0	0	3	0	0	0
Fruits	3	0	0	0	3	0	0	0
Paddy	1	0	0	1	0	0	0	0

Cereals	20	0	0	2	18	1	0	0
Taro	2	2	0	0	2	2	0	0
Total	164	44	0	18	147	48	0	0

Source: Supply Chain Survey, JICA Survey Team

(3) Tehri Garhwal

In Tehri Garhwal, variations of buyers are seen in comparison to other districts. Main buyers are local retailers, Farmers' Organisation and village collector. Consumers, interstate middlemen and supermarket/ processor/ exporter/ hotel are also buying produces like peas, potato, cabbage, tomato, capsicum, and pulses & beans.

Table 5.7 Main Buyers – Tehri Garhwal

Crop	No of Answers	Buyers						
		Farmers' Organization (FPO/ FPC)	Village collector	Trader in APMC market yard	Local retailer	Consumer	Inter-state middleman	Supermarket/ Processor/ Exporter/Hotel
Peas	48	32	27	4	35	18	18	9
Potato	41	28	24	6	32	20	13	8
Cabbage	31	21	19	3	23	19	16	2
Tomato	19	12	14	1	14	10	5	1
Capsicum	9	7	4	1	9	3	2	3
Cauliflower	3	3	1	0	3	1	1	2
Leek	1	0	0	0	0	0	1	0
Vegetables	4	2	3	1	3	1	1	0
Ginger	10	1	0	2	8	1	5	0
Turmeric	2	0	0	0	0	0	2	0
Apple	13	9	0	1	10	0	0	8
Peach	1	1	0	0	0	0	0	1
Apricot	1	1	0	0	1	0	0	1
Kidney Bean	15	13	6	1	8	5	8	0
Horse Gram	7	7	1	0	3	0	3	0
Soybean	2	2	2	0	2	2	0	0
Pulses & Beans	25	16	14	3	17	14	15	8
Paddy	1	0	0	0	0	1	0	0
Total	233	155	115	23	168	95	90	43

Source: Supply Chain Survey, JICA Survey Team

(4) Uttarkashi

In Uttarkashi, village collector, local retailer and farmers' organizations are the common buyers. Supermarket/ processor exporter/ hotel are common buyers of potato and apple.

Table 5.8 Main Buyers – Uttarkashi

Crop	No of Answers	Buyers						
		Farmers' Organization (FPO/ FPC)	Village collector	Trader in APMC market yard	Local retailer	Consumer	Inter-state middleman	Supermarket/ Processor/ Exporter/Hotel
Potato	60	15	29	1	20	2	1	12
Peas	18	7	5	0	11	0	0	1
Tomato	6	0	6	0	0	0	0	0
Cabbage	6	0	1	0	5	0	0	0
French Bean	1	0	1	0	0	0	0	0
Chili	1	0	0	0	1	0	0	0
Vegetables	9	0	5	0	6	1	0	0
Ginger	7	5	0	0	7	0	0	0
Apple	20	0	5	0	0	0	1	14
Pear	8	0	3	0	0	0	1	4
Apricot	2	0	2	0	0	0	0	0

Kidney Bean	18	12	5	0	13	0	0	0
Soybean	6	5	2	0	2	0	0	1
Amaranth	2	1	0	0	1	0	0	0
Millet	1	1	0	0	0	0	0	0
Finger Millet	1	1	0	0	0	0	0	0
Paddy	1	1	0	0	0	0	0	0
Walnut	3	0	2	0	0	0	0	1
Local Products	17	12	16	0	13	3	0	0
Total	187	60	82	1	79	6	3	33

Source: Supply Chain Survey, JICA Survey Team

5.4 Knowledge of Grading

In all the districts, almost all the farmers knew how to grade the produce. The share of informants not knowing the was slightly high in Pithoragarh and Tehri Garhwal, but it is 10% or less.

Table 5.9 Knowledge of Grading

District	Know		Do not Know		No Answer		Total	
	Counts	%	Counts	%	Counts	%	Counts	%
Nainital	79	98.8	0	0.0	1	1.3	80	100.0
Pithoragarh	71	88.8	8	10.0	1	1.3	80	100.0
Tehri Garhwal	71	88.8	7	8.8	2	2.5	80	100.0
Uttarkashi	74	92.5	2	2.5	4	5.0	80	100.0
Total	295	92.2	17	5.3	8	2.5	320	100.0

5.5 Sources of Market Related Information

Across the districts, 83.8% of the households obtain market information from other farmers. Traders and Newspapers are supplementary sources. Extension workers are not the sources of information as many of them do not have frequent contacts.

Table 5.10 Sources of Market Related Information

Market Information Source	Nainital		Pithoragarh		Tehri Garhwal		Pithoragarh		Total Counts of Responses	
	Counts	% to N=80	Counts	% to N=80	Counts	% to N=80	Counts	% to N=80	Counts	% to N=320
Other Farmers	59	73.8	77	96.3	61	76.3	71	88.8	268	83.8
Farmers Organizations	37	46.3	4	5.0	35	43.8	10	12.5	86	26.9
eNam	9	11.3	0	0.0	5	6.3	4	5.0	18	5.6
Internet	43	53.8	2	2.5	23	28.8	10	12.5	78	24.4
Traders	55	68.8	39	48.8	37	46.3	13	16.3	144	45.0
Newspapers	50	62.5	43	53.8	24	30.0	16	20.0	133	41.6
Radio	2	2.5	2	2.5	4	5.0	0	0.0	8	2.5
Extension Workers	0	0.0	0	0.0	1	1.3	0	0.0	1	0.3

Source: Supply Chain Survey, JICA Survey Team

5.6 Difficulties in Selling Produce

71.9% of the total survey households indicated that they have problems in getting good price. 50% of the same referred to the distance to the market is too far and 21.3% mentioned small volume for selling. More proportion of informants in Uttarkashi, Tehri Garhwal and Nainital feel that the distance to the market is an issue.

Table 5.11 Difficulties in Selling Produce

Difficulties/ Problems	Nainital		Pithoragarh		Tehri Garhwal		Uttarkashi		Total Counts of Responses	
	Counts	% to N=80	Counts	% to N=80	Counts	% to N=80	Counts	% to N=80	Counts	% to N=320
Not getting good price	55	68.8	59	73.8	63	78.8	53	66.3	230	71.9

Market is too far	43	53.8	22	27.5	47	58.8	48	60.0	160	50.0
Small volume to sell	22	27.5	16	20.0	8	10.0	22	27.5	68	21.3
Low quality	7	8.8	1	1.3	0	0.0	3	3.8	11	3.4

Source: Supply Chain Survey, JICA Survey Team

Reasons for “low quality” were mostly associated with the lack of storage facilities followed by insufficient fertilizers and chemicals and poor planting materials.

Table 5.12 Reasons for Low Quality

Difficulties/ Problems	Nainital		Pithoragarh		Tehri Garhwal		Uttarkashi		Total Counts of Responses	
	Counts	%	Counts	%	Counts	%	Counts	%	Counts	% Total
Not enough fertilizers/chemicals	15	71.4	1	4.8	5	23.8	0	0.0	21	100.0
Poor planting materials	16	84.2	0	0.0	3	15.8	0	0.0	19	100.0
Poor packing materials	6	66.7	0	0.0	0	0.0	3	33.3	9	100.0
Lack of storage facilities	33	75.0	0	0.0	9	20.5	2	4.5	44	100.0

Source: Supply Chain Survey, JICA Survey Team

5.7 Whether Farmers' Organisation's Help in Selling Produce at Good price

In Nainital, Tehri Garhwal and Uttarkashi, nearly 50% of the informants receive support from Farmers' Organization to sell their produce to get a good price. The support seems to be lacking in Pithoragarh.

Table 5.13 Help from Farmers' Organisation for Selling Produce at Good Price

District	Yes		No		No Answer		Total	
	Counts	%	Counts	%	Counts	%	Counts	%
Nainital	43	53.8	35	43.8	2	2.5	80	100.0
Pithoragarh	10	12.5	68	85.0	2	2.5	80	100.0
Tehri Garhwal	39	48.8	30	37.5	11	13.8	80	100.0
Uttarkashi	32	40.0	32	40.0	16	20.0	80	100.0

Source: Supply Chain Survey, JICA Survey Team

5.8 Who in the family decides when to sell what volume?

76.9% of the informants indicated that the decision concerning timing and volume to sell is made jointly by men and women in the household. In the Attachment 1 - Table 14.5, the decision-making pattern between FHH and MHH is provided.

Table 5.14 Decision Maker in The Household when Selling the Produce

Districts	Male		Female		Jointly		No answer		Total	
	Counts	%	Counts	%	Counts	%	Counts	%	Counts	%
Nainital	29	36.3	0	0.0	51	63.8	0	0.0	80	100.0
Pithoragarh	1	1.3	2	2.5	75	93.8	2	2.5	80	100.0
Tehri Garhwal	18	22.5	4	5.0	54	67.5	4	5.0	80	100.0
Uttarkashi	7	8.8	2	2.5	66	82.5	5	6.3	80	100.0
Total	55	17.2	8	2.5	246	76.9	11	3.4	320	100.0

Source: Supply Chain Survey, JICA Survey Team

5.9 Previous Experience in Participating in Collective/ Group Marketing of Vegetables and Fruits

Among the survey households 31.3% had experience in joint marketing. District wise figure shows the highest proportion of households having experience in in joint marketing in Pithoragarh (53.8%) and lowest in Nainital (12.5%).

Table 5.15 Previous Experience in Collective/ Group Marketing of Vegetables and Fruits

District	Yes	No	No Answer	Total
----------	-----	----	-----------	-------

	Counts	%	Counts	%	Counts	%	Counts	%
Nainital	10	12.5	66	82.5	4	5.0	80	100.0
Pithoragarh	43	53.8	31	38.8	6	7.5	80	100.0
Tehri Garhwal	26	32.5	50	62.5	4	5.0	80	100.0
Uttarkashi	21	26.3	57	71.3	2	2.5	80	100.0
Total Counts % (N=320)	100	31.3	204	63.8	16	5.0	320	100.000

Source: Supply Chain Survey, JICA Survey Team

a) Advantages

The advantages of joint marketing were mostly to gain knowledge and skill on farming, post-harvest and marketing prices and to be able to save transportation cost. It also helps in obtaining market information. District wise figures show that in Nainital and Pithoragarh, benefit of getting knowledge and skill on farming, post-harvest, and marketing practice was identified by 53.8% in Nainital and 41.3% in Pithoragarh. Easy access to market information was identified by 61.3% of the informants of Pithoragarh as benefit of joint marketing.

Table 5.16 Advantages in Collective/ Group Marketing

Expected Advantage	Nainital		Pithoragarh		Tehri Garhwal		Uttarkashi		Total Counts of Responses	
	Counts	% to N=80	Counts	% to N=80	Counts	% to N=80	Counts	% to N=80	Counts	% to N=320
High selling price due to increased bargaining power	3	3.8	29	36.3	26	32.5	24	30.0	82	25.6
Increased knowledge/skill about farming, post-harvest, and marketing practice	43	53.8	33	41.3	24	30.0	18	22.5	118	36.9
Saving transportation cost	22	27.5	33	41.3	27	33.8	22	27.5	104	32.5
Easy access to equipment, machinery and facilities for farming, post-harvest handling and marketing	7	8.8	20	25.0	8	10.0	4	5.0	39	12.2
Easy access to market information	8	10.0	49	61.3	24	30.0	12	15.0	93	29.1
Easy access to loan/credit	9	11.3	7	8.8	7	8.8	4	5.0	27	8.4
External support (from Govt. NGO, etc.) to improve farming, post-harvest marketing and marketing practice	10	12.5	6	7.5	10	12.5	5	6.3	31	9.7

Source: Supply Chain Survey, JICA Survey Team

b) Reasons for Not Participating

For those not participating the joint marketing, reasons were asked. Most frequently indicated reason was rather proactively avoiding the joint marketing. 71.3% of respondents in Nainital and 43.8% in Tehri Garhwal indicated that they do not wish to have their produces mixed with those of low quality and thus, they avoid joint marketing. No leadership or no collective marketing group in the community was also referred to by 56.3% of the informants in Uttarkashi. 58.8% in Nainital and 61.3% in Uttarkashi also lacking knowledge of collective marketing.

Table 5.17 Reasons for Not Participating in Collective/ Group Marketing

Reasons for not Starting Joint Marketing	Nainital		Pithoragarh		Tehri Garhwal		Uttarkashi		Total Counts of Responses	
	Counts	% to N=80	Counts	% to N=80	Counts	% to N=80	Counts	% to N=80	Counts	% to N=320
No benefit/profit from collective marketing (no	40	50.0	2	2.5	17	21.3	1	1.3	60	18.8

difference from individual marketing)										
Want to keep high quality of products without mixing with the products from other members	57	71.3	18	22.5	35	43.8	19	23.8	129	40.3
Many troubles in managing conflicting interests among group members	26	32.5	0	0.0	17	21.3	9	11.3	52	16.3
No leadership/No collective marketing group in the community	30	37.5	5	6.3	25	31.3	45	56.3	105	32.8
No idea how to organize and manage a collective marketing	47	58.8	6	7.5	14	17.5	49	61.3	116	36.3
No external support	19	23.8	1	1.3	20	25.0	35	43.8	75	23.4
No means of transportation		0.0		0.0	1	1.3		0.0	1	0.3

Source: Supply Chain Survey, JICA Survey Team

6. Household Income in Year 2020

6.1 Farm Crop Income in year 2020 (2020 Rabi and 2020 Kharif)

The table below shows season-wise income from farm crops per household in 2020 year. Out of 320 households in the surveyed blocks in four districts, 287 households out of 320 earned from crop cultivation in Kharif in 2020, and 220 households got income from Rabi in 2020 as well (67 households did not continue to produce crops as commercial products).

Table 6.1 Average Income from Farm Crops in 2020

District	Block	Kharif (Rs/HH)	Rabi (Rs/HH)	2020 year (Rs/HH)
Nainital	Bhimtal	111,727	103,113	198,943
	Haldwani	672,546	205,618	614,715
	Ramgarh	176,849	-	176,849
	Ramnagar	1,094,882	59,775	991,372
Pithoragarh	Gangolighat	64,684	34,571	88,884
	Vin	49,527	19,081	62,315
	Berinag (1)	14,166	17,727	26,753
	Berinag (2)	17,208	11,595	26,204
Tehri Garhwal	Chamba	24,171	14,284	22,324
	Fakot	35,703	54,620	42,009
	Jaunpur	135,660	86,731	222,391
	Thauldhar	192,759	117,145	304,046
Uttarkashi	Bhatwari	71,798	33,871	98,692
	Dunda	9,893	10,505	19,873
	Mori	37,279	125,273	160,688
	Naugaon	26,979	29,035	37,758
Total Amount		165,929	64,615	193,240
(Total No. of HHs)		(287)	(220)	(287)

Source: Supply Chain Survey, JICA Survey Team

Average yearly incomes of blocks in 2020 varied more than 100 times and were quite different even within the same district. In the blocks producing vegetables mainly, high income has tended to come from big amount of sold volume, and in the blocks producing fruits, income has been generated from high unit rate of selling price. Sold volume and selling price of each crop produced in Kharif and Rabi in 2020 are used for calculation of farm crop income and shown in Attachment 3.

6.2 Agriculture Labour Income in year 2020 (2020 Rabi and 2020 Kharif)

One of the main income sources for the survey household was agriculture labour. 95% of the surveyed households indicated that they earn from agriculture labour. The most common daily wage rate among men was 500 INR per day followed by 400 INR per day. As for women, 400 INR per day was the most frequently indicated daily wage rate followed by 200 INR per day. The average daily wage rates for female and male indicated that the Berinag block in Pithoragarh was the highest, reporting 525 INR for female and 494 INR for male. The gender segregated average daily wage rate is given in the table below. Further details on the agriculture labour are given in Attachment 1 - Table 8.2.

Table 6.2 Average Daily Wage Rate for Agriculture Labour

District	Block	Female	Male	Overall
Nainital	Bhimal	200	267	250
	Haldwani		200	200
	Ramgarh			
	Ramnagar		333	333
Pithoragarh	Berinag	525	494	500
	Gangolighat			
	Vin			
	Vind			
Tehri Garhwal	Chamba	189	287	233
	Fakot	160	246	209
	Jaunpur	317	392	348
	Thauldhar	296	389	353
Uttarkashi	Bhatwari	400	436	425
	Dunda	395	486	444
	Mori	389	450	432
	Naugaon	250	405	381
Total		303	395	360

Source: Supply Chain Survey, JICA Survey Team

The average number of days that the informants worked as agriculture laborer was 127 days. 116 days for FHH and 133 days for MHH.

Table 6.3 Average No of Days worked as Agriculture Labour in 2020

District	Block	Female	Male	Total
Nainital	Bhimal	35	73	65
	Haldwani		90	90
	Ramgarh			
	Ramnagar		83	83
Pithoragarh	Berinag	275	239	246
	Gangolighat	0	365	183
	Vin			
	Vind			
Tehri Garhwal	Chamba	135	171	150
	Fakot	99	185	142
	Jaunpur	196	226	209
	Thauldhar	164	191	181
Uttarkashi	Bhatwari	43	72	64
	Dunda	26	29	28
	Mori	49	86	75
	Naugaon	70	86	83
Total (Counts)		116	133	127

Source: Supply Chain Survey, JICA Survey Team

The table below shows the earning per household from the agriculture labour. FHH earns 35,785 INR last year and 57,815 INR for MHH. The total average earning from the agriculture labour in 2020 was

49,536 INR. Wages were also earned from share cropping, which average was calculated to be 78,342 INR in 2020 (Attachment 1 - Table 8.2.6).

Table 6.4 Average No of Days worked as Agriculture Labour in 2020

Source: Supply Chain Survey, JICA Survey Team

District	Block	Average			Female		Male	
		Female	Male	Total	Max	Min	Max	Min
Nainital	Bhimtal	7,000	21,700	18,025	8,000	6,000	40,000	6,000
	Haldwani		18,000	18,000			18,000	18,000
	Ramgarh						36,000	18,000
	Ramnagar		28,000	28,000				
Pithoragarh	Berinag	145,000	138,129	139,438	180,000		180,000	40,000
	Gangolighat						240,000	103,375
	Vin							
	Vind							
Tehri Garhwal	Chamba	29,000	45,933	36,697	60,000	8,000	128,000	6,000
	Fakot	21,400	50,962	38,109	80,000	4,000	180,000	5,000
	Jaunpur	58,333	75,438	65,506	144,000	5,000	145,000	4,500
	Thauldhar	52,043	75,257	66,358	124,000		120,000	
Uttarkashi	Bhatwari	17,333	32,429	27,900	20,000	12,000	100,000	12,000
	Dunda	9,121	16,477	13,068	20,000	4,800	75,000	5,000
	Mori	18,889	42,936	35,955	40,000	9,000	100,000	12,600
	Naugaon	19,250	34,591	32,231	45,000	6,000	120,000	8,000
Total (Counts)		35,785	57,815	49,536				

6.3 Income from Other Sources in Year 2020 (2020 Rabi and 2020 Kharif)

During 2020, other than agriculture labour, salary and livestock were the main sources of income for about 40% of the households (Attachment 1 - Table 8.3.1). The earnings from various sources are given in Attachment 1 - Table 8.3.3. Although the proportion of households depending on livestock for their income, the scale of earning was not as high as that of salary, but the earning was higher among FHH in comparison to that of MHH. On the other hand, the substantial earning from salary was reported. Although, the number of households having home garden was small, the earning provided from the home garden was reported to be 46,190 INR in 2020. For FHH, 166,360 INR and 268,517 INR for MHH on an average was earned from salary in 2020. The details are given in Attachment 1 - Table 8.3.3.

Table 6.5 Earning from Other Sources than Agriculture Labour

District	Block	Salary			Livestock and Poultry			Total		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
Nainital	Bhimtal	10,000	50,116	46,104	10,000		10,000	31,500	35,289	34,815
	Haldwani		68,691	68,691					424,506	428,094
	Ramgarh	180,000		180,000		28,800	28,800	180,000	28,800	104,400
	Ramnagar		1,624,800	1,624,800					1,237,517	1,250,850
Pithoragarh	Berinag	133,250	360,000	178,600	15,618	21,600	18,310	57,513	75,600	64,357
	Gangolighat	426,750		426,750	420,000	23,760	89,800	364,500	44,800	273,157
	Vin				31,200		31,200	28,917		28,917
	Vind	342,600	300,000	328,400	48,000	96,000	67,200	81,692	116,733	92,758
Tehri Garhwal	Chamba	78,667	80,571	80,235	16,800	43,667	32,920	33,382	50,123	45,632
	Fakot	148,000	136,800	143,692	23,750	9,600	17,686	85,107	48,035	68,522
	Jaunpur	137,333	108,000	130,000	50,467	22,900	43,575	104,616	50,285	86,029
	Thauldhar	116,571	132,000	125,250	27,120	24,333	25,329	76,267	68,507	71,543
Uttarkashi	Bhatwari		48,000	48,000		21,600	21,600	126,000	31,371	52,400
	Dunda		245,667	245,667	36,000	30,600	30,884	105,900	125,836	124,175
	Mori		60,900	60,900	72,000		72,000	25,200	29,800	29,277
	Naugaon	48,000	43,000	45,500	13,647	18,018	16,269	19,222	19,114	19,172
Total		160,360	268,517	229,889	36,809	29,986	33,006	94,248	138,869	120,847

Source: Supply Chain Survey, JICA Survey Team

7. Household Expenses in 2020

7.1 Farming Expenses

(1) Fertilizers

70% of the households spent on fertilizer in 2020. On an average 10,430 INR was spent on fertiliser in 2020. The amount spent by FHH was only 12.7% of that of MHH.

Table 7.1 Average Expenditure on Fertilizer in 2020

District	Block	Female		Male		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal	1	20,000	16	6,106	17	6,924
	Haldwani			20	26,500	20	26,500
	Ramgarh	2	3,150	9	3,673	11	3,578
	Ramnagar			20	68,800	20	68,800
Pithoragarh	Berinag	7	3,786	5	1,020	12	2,633
	Gangolighat	14	993			14	993
	Vin	2	1,000			2	1,000
	Vind	3	1,000			3	1,000
Tehri Garhwal	Chamba	3	567	7	1,357	10	1,120
	Fakot	4	1,275	4	388	8	831
	Jaunpur	10	1,560	7	2,543	17	1,965
	Thauldhar	7	1,857	13	3,046	20	2,630
Uttarkashi	Bhatwari	5	700	13	2,115	18	1,722
	Dunda	2	500	17	624	19	611
	Mori	3	900	17	2,988	20	2,675
	Naugaon	7	1,943	6	1,533	13	1,754
Total		70	1,827	154	14,340	224	10,430

Source: Supply Chain Survey, JICA Survey Team

(2) Compost/ Manure

The understanding of compost and manure could have been different from what we often mean. We often mean some organic substances if it is termed as compost/ manure. In the survey responses, there was a mixture of chemical fertilizer and organic ones under the type of compost/ manure applied. In the table below, the type of fertilizers/ compost/ manure applied is given. On an average, 4,431 INR was spent on all below mentioned fertilizer. There is a large number of informants who did not specify the compost or manure type. The detail can be found in Attachment 1 - Table 9.1.1 2).

Table 7.2 Average Expenditure on Fertilize/ Compost/ Manure

District	Block	Total						
		Compost	Cow Dung	Manure	Vermi Compost	Organic Matters + Chemical Fertilizers	Chemicals Only (Urea, DAP, NPK, Calcium)	Not Specified
Nainital	Bhimtal					2,083	5,500	5,000
	Haldwani					20,167		60,000
	Ramgarh						4,338	
	Ramnagar			0		16,000		
Pithoragarh	Berinag		875			2,000	1,067	1,264
	Gangolighat			0	1,150	1,000	400	1,000
	Vin		2,100					
	Vind		1,536					
Tehri Garhwal	Chamba			250				2,611
	Fakot							3,000
	Jaunpur		0				1,000	6,669

	Thauldhar			0		2,000	1,500	4,007	3,355
Uttarkashi	Bhatwari	0		100				2,125	2,353
	Dunda			800				535	550
	Mori						8,667	3,222	5,400
	Naugaon						2,346	1,583	2,105
Total		0	1,662	2,523	1,150	10,984	3,707	3,431	4,131

Source: Supply Chain Survey, JICA Survey Team

(3) Pesticides

The expenditure on pesticides of MHHs were 7 times more than that of FHHs. Expenditure on pesticides were higher in Nainital. Among the blocks, Ramnagar block MHH spent the highest among of 64,056 INR followed by Haldwani (30,667 INR). Even among the FHHs, Bhimtal block in Nainital spent the highest amount of 10,000 INR for fertiliser.

Table 7.3 Average Expenditure on Pesticides

District	Block	FHH		MHH		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal	1	10,000	19	4,842	20	5,100
	Haldwani			18	30,667	18	30,667
	Ramgarh	8	2,913	11	3,800	19	3,426
	Ramnagar			18	64,056	18	64,056
Pithoragarh	Berinag	26	615	12	450	38	563
	Gangolighat	15	480	5	540	20	495
	Vin	5	1,000			5	1,000
	Vind	8	813	5	5,700	13	2,692
Tehri Garhwal	Chamba	2	2,600	11	827	13	1,100
	Fakot	3	1,367	4	625	7	943
	Jaunpur	10	4,400	7	3,000	17	3,824
	Thauldhar	7	4,000	11	3,545	18	3,722
Uttarkashi	Bhatwari	6	1,000	14	929	20	950
	Dunda	2	650	18	483	20	500
	Mori	3	767	17	2,094	20	1,895
	Naugaon	6	967	9	1,222	15	1,120
Total		102	1,615	179	11,259	281	7,758

Source: Supply Chain Survey, JICA Survey Team

(4) Seed/ Seedlings for Vegetables and Fruits

Among the blocks, Haldwani (Garlic cluster) in Nainital spent the highest amount of 51,667 INR. Bhimtal in Nainital (Tomato cluster), Chamba (Ginger cluster) and Thauldhar (Pea/ Potato cluster) in Tehri Garhwal and Mori (Apple cluster) in Uttarkashi also indicated the high expenditure on the seeds/ seedlings for vegetable fruit.

Table 7.4 Average Expenditure on Seed/ Seedlings for Vegetables and Fruits

District	Block	FHH		MHH		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal	1	20,000	19	11,158	20	11,600
	Haldwani			18	51,667	18	51,667
	Ramgarh	7	2,971	11	3,136	18	3,072
	Ramnagar			16	4,938	16	4,938
Pithoragarh	Berinag	25	984	13	623	38	861
	Gangolighat	15	580	5	520	20	565
	Vin	5	1,000			5	1,000
	Vind	8	1,313	3	10,700	11	3,873
Tehri Garhwal	Chamba	4	3,000	14	2,214	18	2,389
	Fakot	7	2,214	4	588	11	1,623

Uttarkashi	Jaunpur	10	10,100	10	7,700	20	8,900
	Thauldhar	7	11,286	13	15,154	20	13,800
	Bhatwari	6	1,083	14	4,321	20	3,350
	Dunda	2	700	18	497	20	518
	Mori	3	8,667	17	11,118	20	10,750
	Naugaon	8	4,875	12	4,167	20	4,450
	Total	108	3,426	187	10,236	295	7,743

Source: Supply Chain Survey, JICA Survey Team

(5) Agri plastics or nets for mulching/ tunnels

The average expenditure on agriculture plastics for mulching/ tunnels was 5,511 INR. The block wise figures of MHH in Bhimtal (Tomato cluster) and Thauldhar FHHs (Pea/ Potato cluster) in Tehri Garhwal and MHH in Mori were higher among the blocks.

Table 7.5 Average Expenditure on Agri plastics or nets for mulching/ tunnels

District	Block	FHH		MHH		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal			3	10,000	3	10,000
	Haldwani					0	
	Ramgarh			1	3,500	1	3,500
	Ramnagar					0	
Pithoragarh	Berinag (1)	1	100			1	100
	Berinag (2)						
	Gangolighat	3	4,767			3	4,767
	Vin	1	500			1	500
Tehri Garhwal	Chamba	1	5,000			1	5,000
	Fakot	1	5,000	1	200	2	2,600
	Jaunpur	8	6,625	3	3,667	11	5,818
	Thauldhar	3	10,000	5	6,400	8	7,750
Uttarkashi	Bhatwari					0	
	Dunda			5	480	5	480
	Mori	1	5,000	6	9,167	7	8,571
	Naugaon	2	500			2	500
Total		21	5,424	24	5,588	45	5,511

Source: Supply Chain Survey, JICA Survey Team

(6) Agriculture Hired Labourers

The expenditure on the agriculture labours were reported among the 38.1% of the survey households. The figure was extremely high in the Haldwani (Garlic cluster) in Nainital recording 200,067 INR. 2nd the highest expenditure was reported in Vin block in Pithoragarh (105,000 INR). About

Table 7.6 Average Expenditure on Agriculture Hired Labourers

District	Block	FHH		MHH		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal	1	10,000	2	21,000	3	17,333
	Haldwani			15	200,067	15	200,067
	Ramgarh					0	
	Ramnagar			6	60,833	6	60,833
Pithoragarh	Berinag (1)	7	4,000	4	6,125	11	4,773
	Berinag (2)						
	Gangolighat	14	9,357			14	9,357
	Vin	1	5,000	2	105,000	3	71,667
Tehri Garhwal	Chamba	2	25,750	4	13,500	6	17,583
	Fakot	2	20,000			2	20,000
	Jaunpur	9	39,889	9	12,778	18	26,333
	Thauldhar	7	30,286	11	26,636	18	28,056
Uttarkashi	Bhatwari	3	667	2	4,500	5	2,200

	Dunda			1	5,000	1	5,000
	Mori	2	6,000	17	9,294	19	8,947
	Naugaon	1	7,000			1	7,000
Total		49	17,500	73	58,582	122	42,082

Source: Supply Chain Survey, JICA Survey Team

(7) Maintenance cost of Machinery/ Equipment

About 31.9% of the households spend on the maintenance of machineries and equipment. The average expenditure was reported to be 9,253 INR. MHHs spend about 4 times more than that of FHHs.

Table 7.7 Maintenance Cost of Machinery/ Equipment

District	Block	FHH		MHH		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal			6	15,167	6	15,167
	Haldwani			9	51,000	9	51,000
	Ramgarh					0	
	Ramnagar			1	100,000	1	100,000
Pithoragarh	Berinag	6	2,667	3	733	9	2,022
	Gangolighat	14	1,464			14	1,464
	Vin	2	3,300			2	3,300
	Vind			1	600	1	600
Tehri Garhwal	Chamba	2	2,750	4	2,875	6	2,833
	Fakot	4	1,250			4	1,250
	Jaunpur	10	9,700	9	4,111	19	7,053
	Thauldhar	7	3,571	12	4,083	19	3,895
Uttarkashi	Bhatwari	1	1,000	3	4,333	4	3,500
	Dunda			8	2,025	8	2,025
	Mori			1	2,200	1	2,200
	Naugaon	1	4,000			1	4,000
Total		47	3,843	57	13,714	104	9,253

Source: Supply Chain Survey, JICA Survey Team

(8) Livestock Maintenance

68.8% of the households spend 12,823 INR on an average for livestock maintenance.

Table 7.8 Expenditure on Livestock Maintenance

District	Block	FHH		MHH		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal	1	24,000	18	20,328	19	20,521
	Haldwani			13	25,077	13	25,077
	Ramgarh			2	4,750	2	4,750
	Ramnagar			5	9,800	5	9,800
Pithoragarh	Berinag	23	13,026	12	27,083	35	17,846
	Gangolighat	15	6,540	5	36,000	20	13,905
	Vin	3	19,133			3	19,133
	Vind	9	27,000	5	52,800	14	36,214
Tehri Garhwal	Chamba	4	1,125	9	8,556	13	6,269
	Fakot	3	2,333	3	3,000	6	2,667
	Jaunpur	10	5,800	10	4,350	20	5,075
	Thauldhar	7	6,429	13	6,538	20	6,500
Uttarkashi	Bhatwari	5	3,600	13	5,154	18	4,722
	Dunda	2	8,750	17	5,059	19	5,447
	Mori	1	2,000	2	6,000	3	4,667

	Naugaon	3	3,667	7	5,286	10	4,800
Total		86	10,292	134	14,447	220	12,823

Source: Supply Chain Survey, JICA Survey Team

(9) Total Yearly Expenses on Farming

The annual expenses on farming were estimated to be 28,311 INR for FHHs and 85,359 for MHHs. However, the figure was extremely high in Haldwani and Ramnagar report 361,900 INR and 257,900 INR respectively

Table 7.9 Total Annual Expenditure on Farming

District	Block	FHH		MHH		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal	1	129,000	19	53,637	20	57,405
	Haldwani			20	361,900	20	361,900
	Ramgarh	8	10,113	12	16,385	20	13,876
	Ramnagar			20	257,900	20	257,900
Pithoragarh	Berinag	27	16,996	13	29,962	40	21,210
	Gangolighat	15	21,280	5	37,080	20	25,230
	Vin	5	17,700			5	17,700
	Vind	9	32,222	6	90,617	15	55,580
Tehri Garhwal	Chamba	4	30,600	18	13,256	22	16,409
	Fakot	10	9,970	8	2,763	18	6,767
	Jaunpur	10	91,980	10	38,880	20	65,430
	Thauldhar	7	71,386	13	66,923	20	68,485
Uttarkashi	Bhatwari	6	8,333	14	17,571	20	14,800
	Dunda	2	11,150	18	8,692	20	8,938
	Mori	3	22,667	17	41,300	20	38,505
	Naugaon	8	13,425	12	12,017	20	12,580
Total		115	28,311	205	85,359	320	64,857

Source: Supply Chain Survey, JICA Survey Team

7.2 Living Expenses

The total annual household expenses were calculated to be 134,689 INR. 95,359 INR for FHH and 156,752 INR for MHH, which is about 40% less of expenditure made by MHH. Expenditure was extremely high in Haldwani MHH in Nainital. The itemised living expenses are given in Attachment 1 - Table 9.2.

Table 7.10 Average Annual Living Expenses

District	Block	FHH		MHH		Total	
		Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)	Counts	Average Expenditure (INR)
Nainital	Bhimtal	1	110,150	19	105,059	20	105,314
	Haldwani			20	339,060	20	339,060
	Ramgarh	8	46,950	12	44,070	20	45,222
	Ramnagar			20	169,670	20	169,670
Pithoragarh	Berinag	27	74,321	13	78,269	40	75,605
	Gangolighat	15	96,080	5	83,040	20	92,820
	Vin	5	54,600			5	54,600
	Vind	9	88,133	6	690,933	15	329,253
Tehri Garhwal	Chamba	4	198,700	18	194,100	22	194,936
	Fakot	10	178,370	8	261,875	18	215,483
	Jaunpur	10	108,240	10	133,800	20	121,020
	Thauldhar	7	122,957	13	150,068	20	140,579
Uttarkashi	Bhatwari	6	93,200	14	78,014	20	82,570

	Dunda	2	56,100	18	77,628	20	75,475
	Mori	3	97,200	17	106,765	20	105,330
	Naugaon	8	60,225	12	56,183	20	57,800
Total		115	95,359	205	156,752	320	134,689

Source: Supply Chain Survey, JICA Survey Team

8. Needs and Aspirations of Farmers

8.1 Vegetable Cultivation

(1) Varieties wanting to Improve

FHHs wanted to improve on cabbage, capsicum, peas and potato while MHHs wanted to improve on cabbage, peas, potato, tomato (Shimran/ Shivay varieties). The detailed data table is presented in Attachment 1 - Table 10.1.1. (Note: Varieties were asked but the responses did not include names of the varieties but only crop names were indicated except tomato.)

(2) Problems and Solutions in Vegetable Cultivation

The most urgent problems to be addressed in vegetable cultivation included low price of farm products, lack of storage facilities, damage by wild animals and lack of knowledge. Further details are given in Attachment 1 - Table 10.1.1 2) and 10.1.1 3).

Table 8.1 Most Urgent Problems in Cultivating Vegetables

District	Block	Lack of knowledge	Low price of farm products	Lack of storage facilities	Low yield of crops	Poor maintenance of irrigation facilities	Damage of pests and diseases Weed damage	Damage by wild animals	Total
Nainital	Bhimtal	15	17	5	0	1	3	0	57
	Haldwani	10	15	17	2	0	1	1	57
	Ramgarh	6	13	13	0	3	0	0	45
	Ramnagar	1	1	0	0	0	0	0	3
Pithoragarh	Berinag	21	1	18	3	32	2	1	82
	Gangolighat	4	3	8	7	2	11	4	46
	Vin	0	1	3	0	1	0	3	12
	Vind	0	1	3	1	3	0	5	26
Tehri Garhwal	Chamba	0	6	2	0	1	4	9	35
	Fakot	2	9	0	1	0	3	6	27
	Jaunpur	0	11	15	3	0	0	10	54
	Thauldhar	0	6	17	0	0	0	11	50
Uttarkashi	Bhatwari	8	0	5	11	14	0	4	54
	Dunda	1	12	0	19	0	16	12	60
	Mori	3	13	2	0	4	4	7	58
	Naugaon	10	3	0	12	9	5	6	57
Total		81	112	108	59	70	49	79	723
% to Total No HH		25.3	35.0	33.8	18.4	21.9	15.3	24.7	

Source: Supply Chain Survey, JICA Survey Team

8.2 Fruits Cultivation

(1) Varieties to Improve

FHH indicated most frequently apple and pear for the varieties to improve and apple, pear and litchi were referred to by the MHHs. (Note: The varieties were asked to be identified but the responses only indicated the crop names.)

(2) Problems and Solutions in Fruits Cultivation

Lack of storage facilities, low price of farm products, and damages caused by wild animals, pests/disease/ weed were among the most frequently mentioned problems that the informants wanted to be addressed. Solutions for these issues included irrigation, technical knowledge, good quality planting material and fencing.

Table 8.2 Most Urgent Problems in Cultivating Fruits

District	Block	Lack of knowledge	Low price of farm products	Lack of storage facilities	Low yield of crops	Poor maintenance of irrigation facilities	Shortage of irrigation water in dry season	Damage of pests and diseases Weed damage	Damage by wild animals	No good quality seeds and saplings available nearby	Total
Nainital	Bhimtal										0
	Haldwani										0
	Ramgarh	2	16	18		3	14	1		1	55
	Ramnagar	13	15	18	2	1		1		2	58
Pithoragarh	Berinag	17	15	1		1		15	16		65
	Gangolighat	1	1	3				4	5	1	15
	Vin					1			2	3	9
	Vind			2		4			2	3	16
Tehri Garhwal	Chamba			1			1				2
	Fakot							1	1		2
	Jaunpur										0
	Thauldhar										0
Uttarkashi	Bhatwari	7		2	8	12	8	1	2	4	47
	Dunda		3		17			19	18		57
	Mori	1	8	14		3	2	3	1	2	59
	Naugaon	3		2	4	1	1	4	4	5	32
Total		44	58	61	31	26	26	49	51	21	417

Source: Supply Chain Survey, JICA Survey Team

8.3 Interested Crops and Varieties

The interested crops frequently identified by the informants are summarized as below. The number of interested crops mentioned are more among MHH. For FHH, reflecting on the limited access to irrigation, the number of varieties mentioned for rainfed was more in number. The detail is provided in Attachment 1 - Table 10.1.3.

Table 8.3 Interested Crops

		FHH	MHH
Kharif	Irrigated	Potato, Ginger	Tomato, Potato, Peas, Cabbage, Capsicum, French Beans, Apple, Kiwifruits
	Rainfed	Tomato, Potato, Peas, Capsicum, Cabbage	Tomato, Potato, Peas, Cabbage, Capsicum
Rabi	Irrigated	-	Tomato, Potato, Peas, Onion
	Rainfed	Tomato, Potato, Peas, Cabbage	Tomato, Potato, Peas, Cabbage, Apple, Pear

Source: Supply Chain Survey, JICA Survey Team

The informants were also asked to identify the varieties. The responses were mostly hybrid or high yielding varieties. Further details can be found in Attachment 1 - Table 10.4.

Table 8.4 Varieties Interested in Cultivating

		Tomato	Potato	Peas	Cabbage	Beans	Apple
Kharif	Irrigated	Himsona	Local, Mountain				
	Rainfed	Himsona, Unnat	Kufri, Jyoti, Local, Tumri, Chandramukhi	Airkil, G10, Local	Unnat, Varun, Local	Hilguni, Local	
Rabi	Irrigated						
	Rainfed						Himachali, Mountain

Source: Supply Chain Survey, JICA Survey Team

8.4 The Factors Preventing Farmers from Solving Issues

The factors that prevent the farmers to work on problem solving included lack of information, lack of irrigation, and lack of materials and equipment. Both MHH and FHH indicated the similar tendency in responses. Details are provided in Attachment 1 - Table 10.2.

Table 8.5 Factors Preventing Farmers from Solving Problems

District	Block	Lack of information	Lack of material and equipment	Lack of Government Concern	Size of land	Lack of enough irrigation water	Lack of enough capital (No access to credit and subsidy)	Total
Nainital	Bhimtal	13	11	9	0	9	3	52
	Haldwani	10	8	3	1	1	2	29
	Ramgarh	20	19	0	0	20	1	60
	Ramnagar	3	13	0	3	3	5	34
Pithoragarh	Berinag	30	34	9	8	34	0	121
	Gangolighat	18	17	5	3	15	0	58
	Vin	0	3	2	5	4	0	14
	Vind	2	5	11	8	12	1	41
Tehri Garhwal	Chamba	10	6	8	4	17	8	61
	Fakot	7	6	8	7	5	2	43
	Jaunpur	12	3	8	5	16	12	66
	Thauldhar	14	1	9	6	17	15	68
Uttarkashi	Bhatwari	8	3	0	1	8	7	31
	Dunda	20	5	0	0	0	19	54
	Mori	18	6	6	0	19	13	66
	Naugaon	19	18	2	2	19	2	63
Total		204	158	80	53	199	90	861
% to Total No of HHs		63.8	49.4	25.0	16.6	62.2	28.1	-

Source: Supply Chain Survey, JICA Survey Team

8.5 Immediate Needs in Farming

Most frequently identified immediate needs included more land, storage facilities nearby, technical support, training, and market information were the most immediate needs. The details can be found in Attachment 1 - Table 10.3.

Table 8.6 Immediate Needs in Farming

District	Block	Diesel or Electric Pump	More Land	More irrigation water	Pond or Reservoir	Deep Tube Well	Drip Irrigation System	Sprinkler Irrigation System	More Credit	Market Information	Storage Facilities near by	Technical support/ Trainings	Total
Nainital	Bhimtal	11	10	2	6	11	18	7	9	4	16	13	108
	Haldwani	12	1	3	5	19	16	4	12	7	17	12	108
	Ramgarh	7	13	1	0	2	1	1	0	14	5	16	61
	Ramnagar	14	4	0	2	13	10	4	18	4	18	12	99
Pithoragarh	Berinag	1	40	0	2	0	0	3	0	32	1	35	114
	Gangolighat	7	19	1	4	0	0	7	0	8	15	5	66
	Vin	0	1	0	0	0	4	2	0	0	2	5	14
	Vind	1	6	2	2	0	4	9	0	5	8	7	44
Tehri Garhwal	Chamba	1	15	3	6	5	5	6	2	4	10	4	70
	Fakot	1	4	6	3	3	2	3	3	6	8	3	46
	Jaunpur	1	11	1	6	2	11	6	0	8	9	4	64
	Thauldhar	1	16	2	5	1	5	6	2	6	10	7	63
Uttarkashi	Bhatwari	0	5	2	2	2	4	6	1	5	4	5	40
	Dunda	0	5	9	0	0	0	1	1	20	11	19	66
	Mori	0	6	1	13	1	0	20	0	1	15	6	63
	Naugaon	0	13	1	5	7	1	5	0	15	6	17	72
Total		57	169	34	61	66	81	90	48	139	155	170	1,098
% to Total No of HHs		17.8	52.8	10.6	19.1	20.6	25.3	28.1	15.0	43.4	48.4	53.1	

Source: Supply Chain Survey, JICA Survey Team

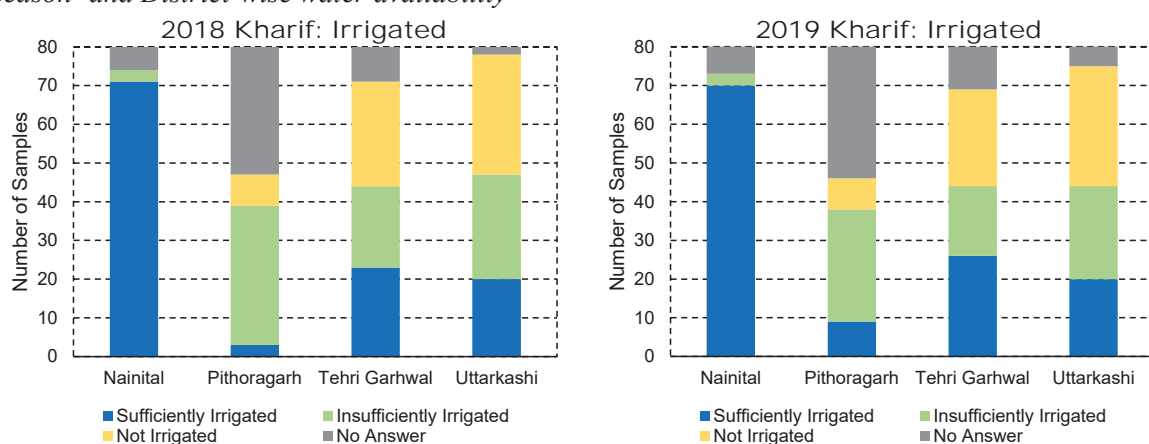
9. Irrigation

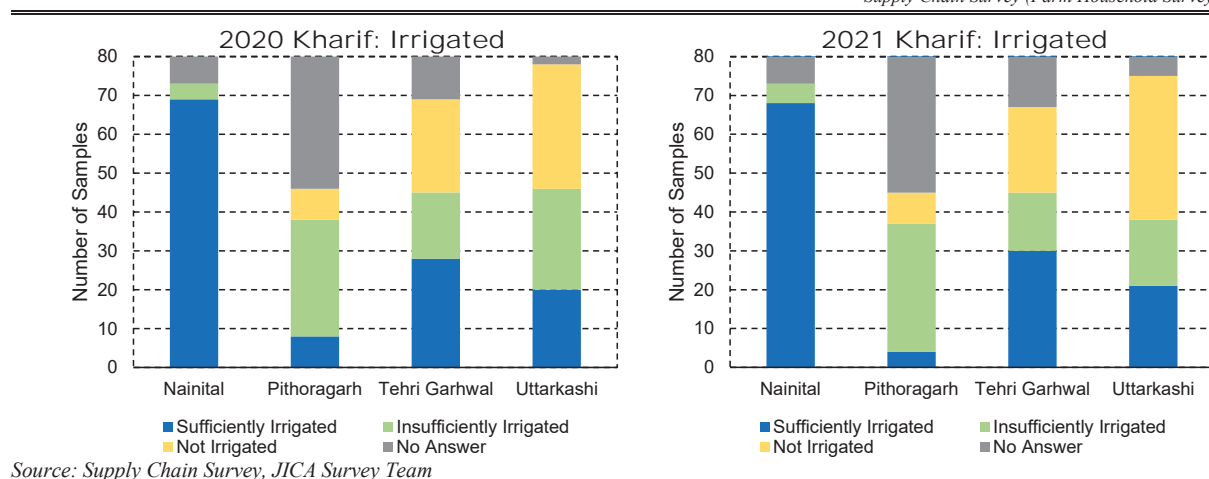
9.1 Sufficiency of Water in Kharif and Rabi seasons for cropping

In this section water sufficiency for Kharif and Rabi seasons for cropping was assessed. The results of data analysis are followed by comments.

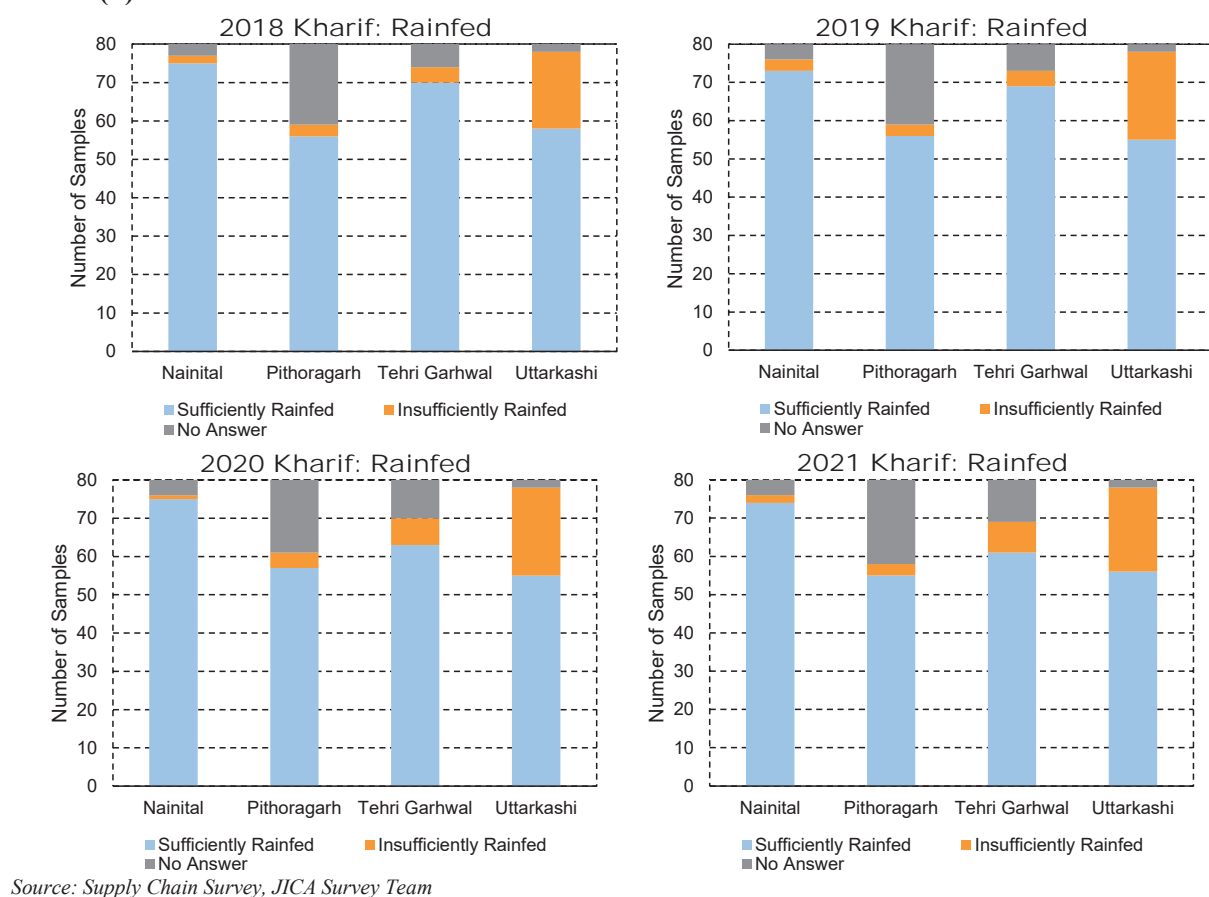
Result (a):

Season- and District-wise water availability

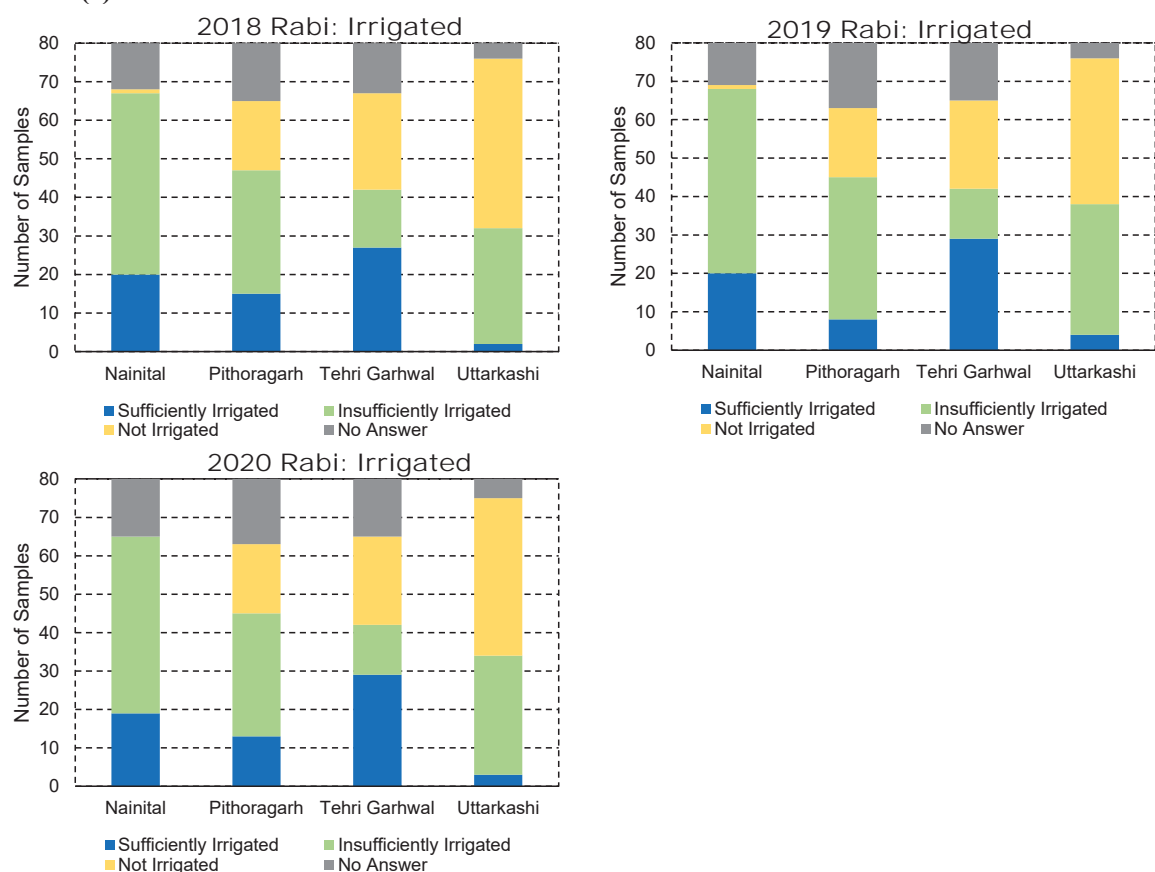


**Figure 9.1 District-wise Irrigation Water Availability in Kharif****Comment (a):**

While approximately 70 among 80 interviewees received sufficient irrigation water in Kharif season in Nainital, half of interviewees in other three districts received sufficient/insufficient irrigation water.

Result (b):**Figure 9.2 District-wise Rainfed Status in Kharif****Comment (b):**

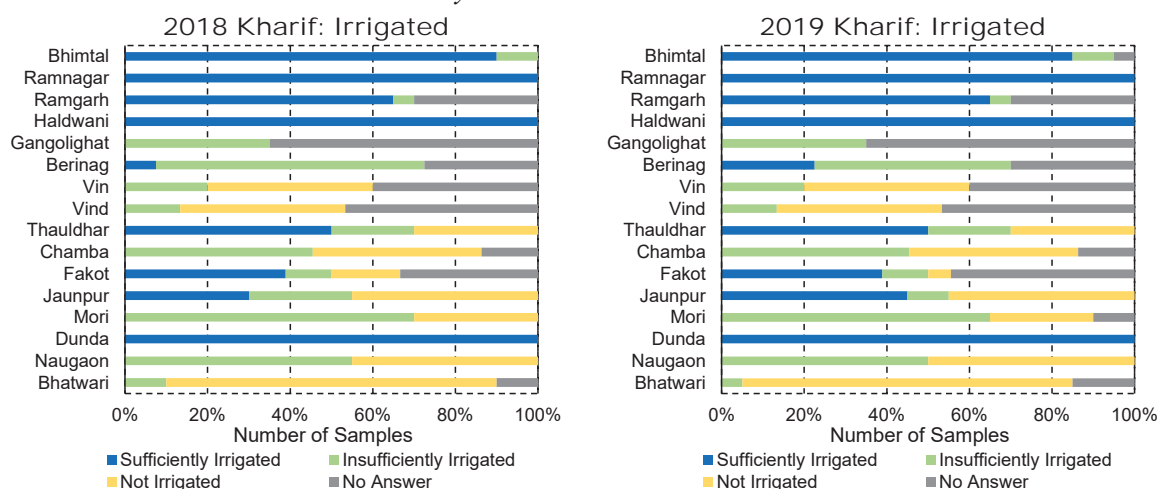
More than 90% of farmers in Nainital received sufficient rain. On the other hand, more than 25 % of farmers in Uttarkashi could receive only insufficient rain in last four Kharif seasons.

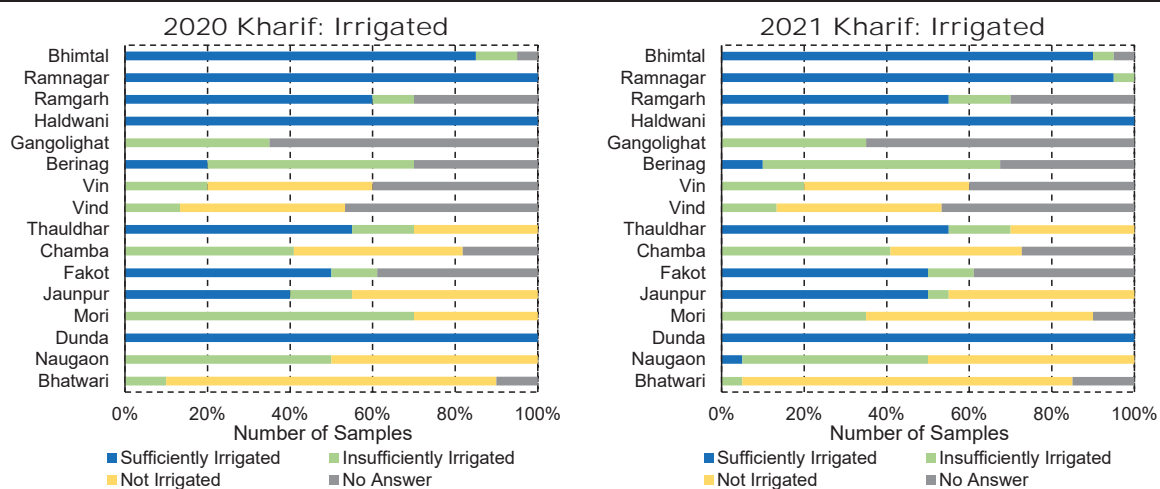
Result (c):

Source: Supply Chain Survey, JICA Survey Team

Figure 9.3 District-wise Irrigation Water Availability in Rabi**Comment (c):**

Even in Nainital where the richest in water availability only 25% of farmers could irrigate sufficiently and 60% of farmers could irrigate with insufficient water volume. Meanwhile, more than 30% farmers in Tehri Garhwal could sufficiently irrigate. Half of farmers in Uttarkashi could not irrigate.

Result (d):*Season- and Block-wise water availability*



Note:

- Bhimtal to Haldwani: Nainital, Gangolighat to Vind¹: Pithoragarh, aauldhar to aaunpur: aehri Garhwal, o ori to Bhatwari: Uttarkashi

- Number of samples in all blocks are not same so that the result is mentioned in percentage

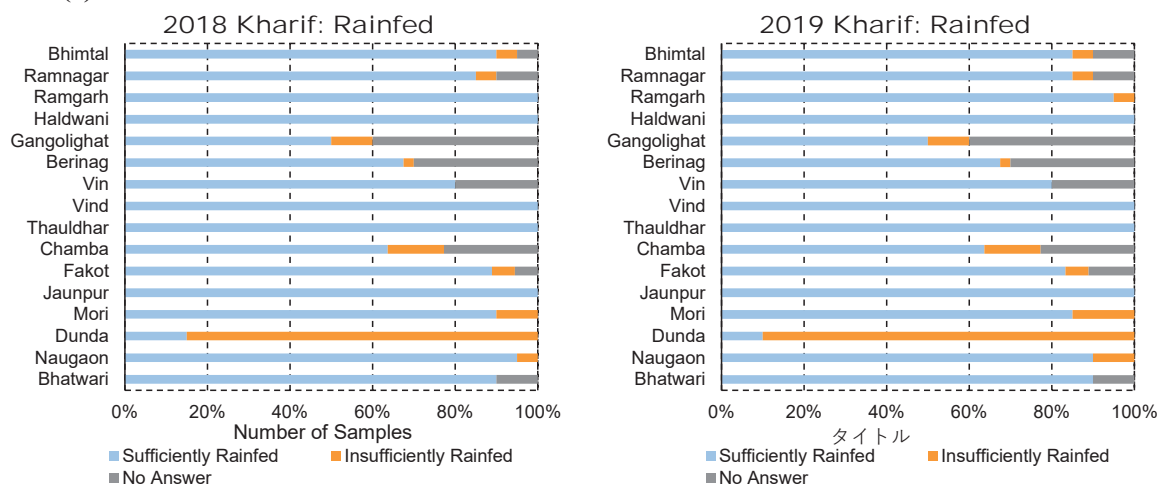
Source: Supply Chain Survey, JICA Survey Team

Figure 9.4 Block-wise Irrigation Water Availability in Kharif

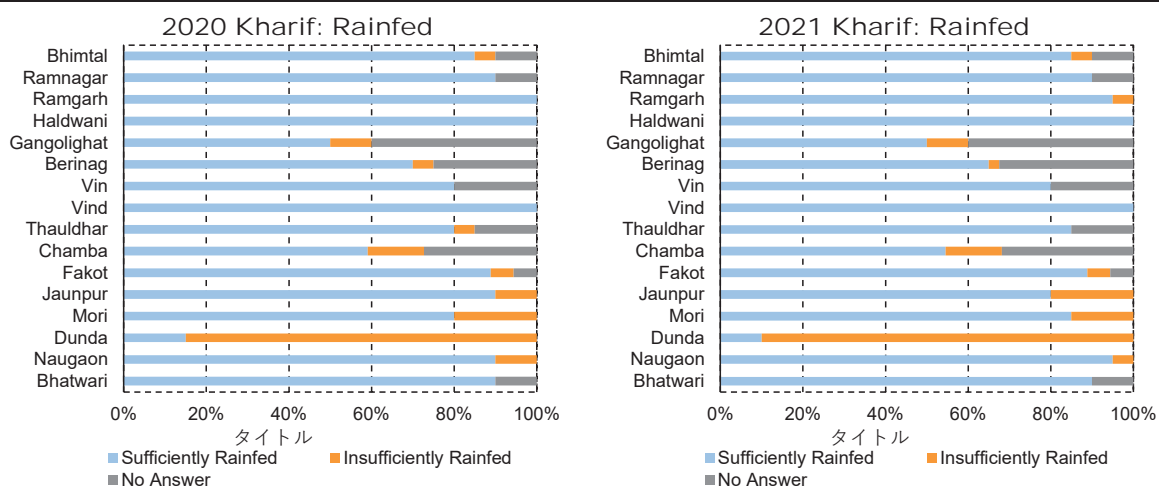
Comment (d):

According to the interview result, all farmers in Ramnagar and Haldwani in Nainital and Dunda in Uttarkashi could irrigate sufficiently. However, farmers in the other block in Uttarkashi could rarely irrigate sufficiently and approximately 50% of farmers could not irrigate. In Tehri Garhwal, 30-50% of farmers in Tauldhar, Fakot, and Jaunpur could irrigate sufficiently, while farmers in Chamba could never irrigate sufficiently.

Result (e):



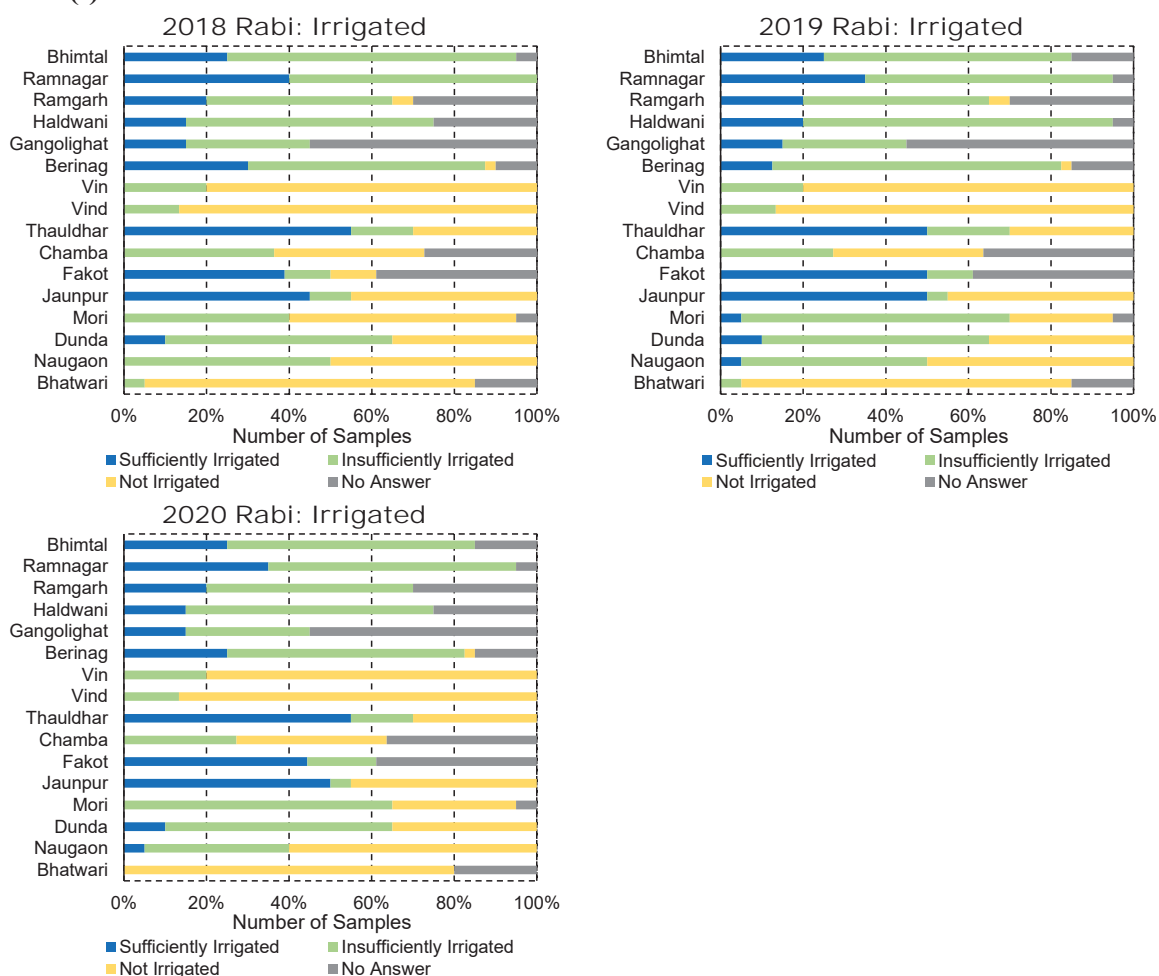
¹ Vind in Pithoragarh was wrongly spelled of Vin. Figures will be corrected accordingly in the final report.



Source: Supply Chain Survey, JICA Survey Team

Figure 9.5 Block-wise Rainfed Status in Kharif**Comment (e):**

More than 80% of farmers in Dunda in Uttarkashi could not receive sufficient rain, although they can irrigate sufficiently (refer to Fig. 9.4). On the other hand, approximately less than 20% of farmers in other blocks could receive insufficient rain in general.

Result (f):

Source: Supply Chain Survey, JICA Survey Team

Figure 9.6 Block-wise Irrigation Water Availability in Rabi

Comment (f) :

More than 80% of farmers in Vin² in Pithoragarh and Bhatwari in Uttarkashi could not irrigate. More than 80% of farmers in Bhimtal and Ramnagarh in Nainital and Berinag in Pithoragarh could irrigate, although more than 60% among them could not irrigate sufficiently.

Result (g):

Season- and District-wise yearly fluctuation

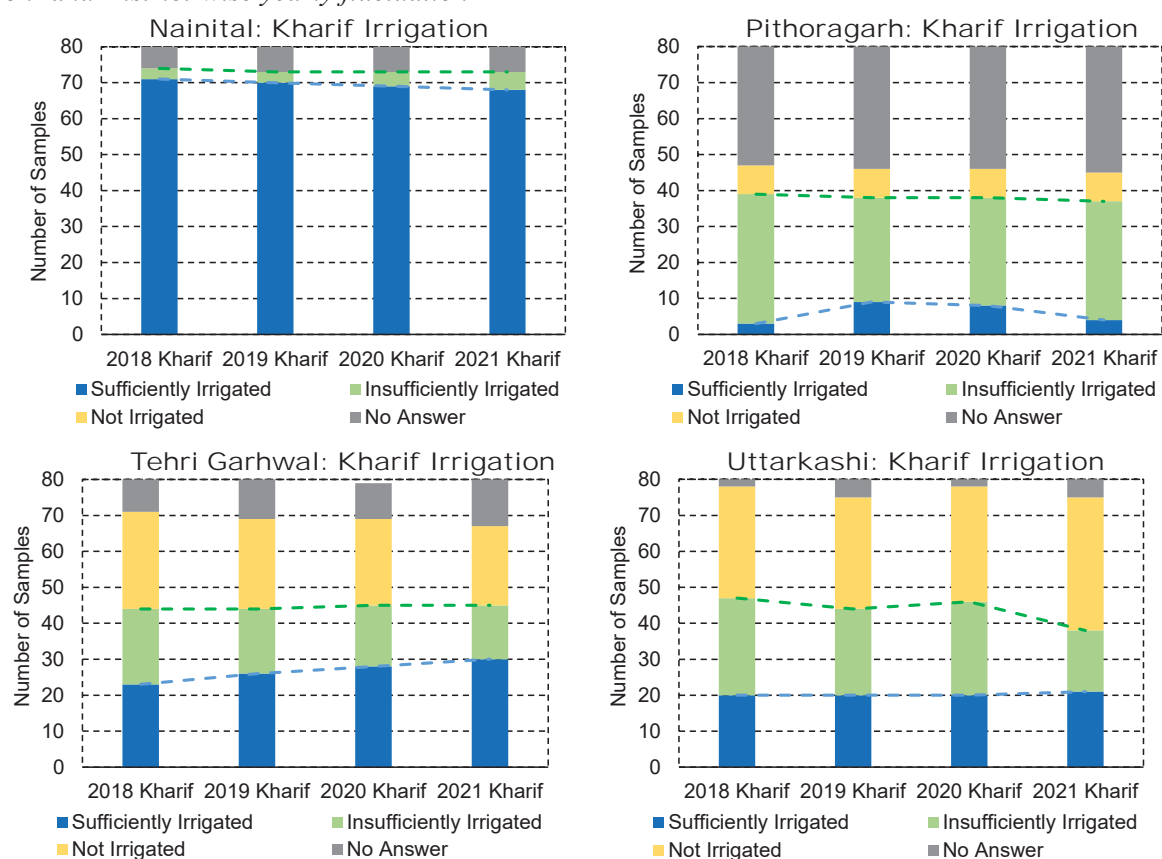
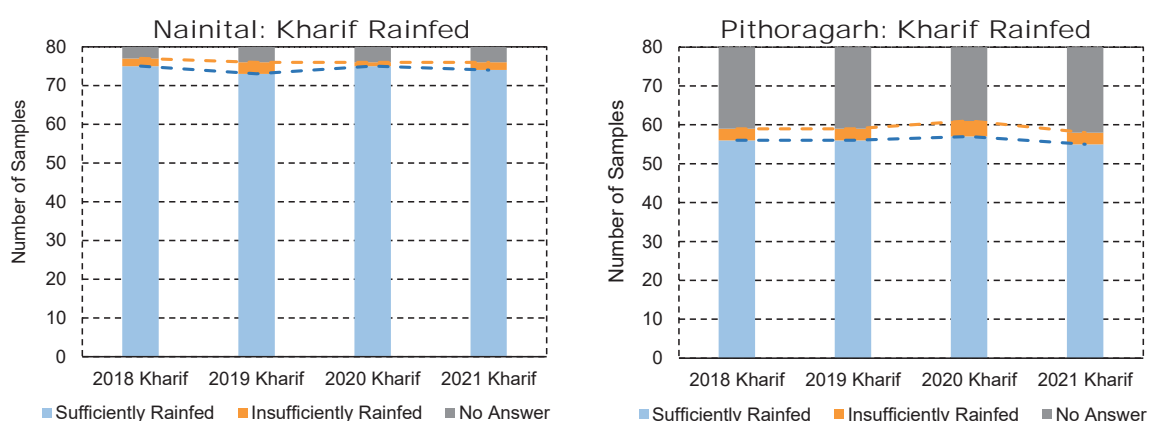
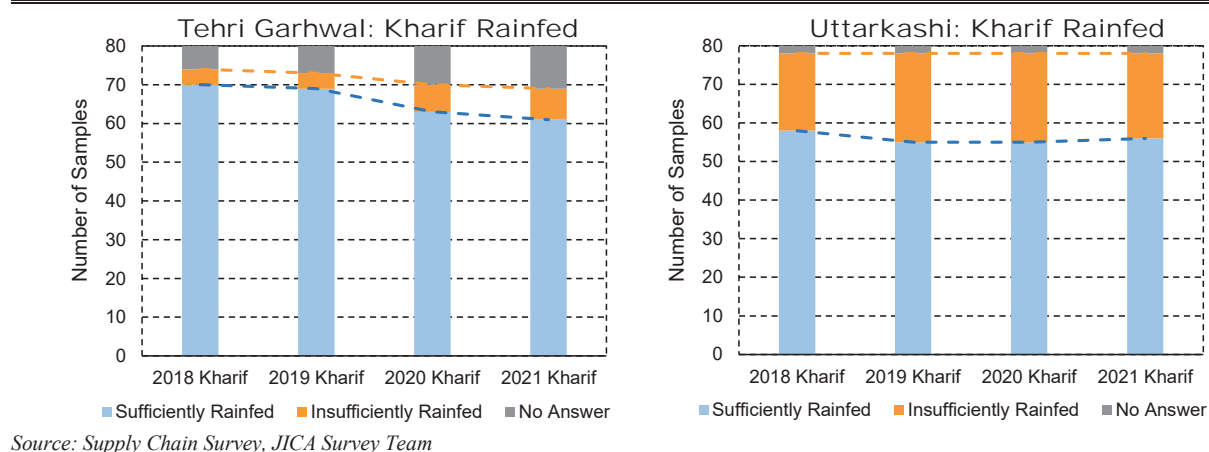
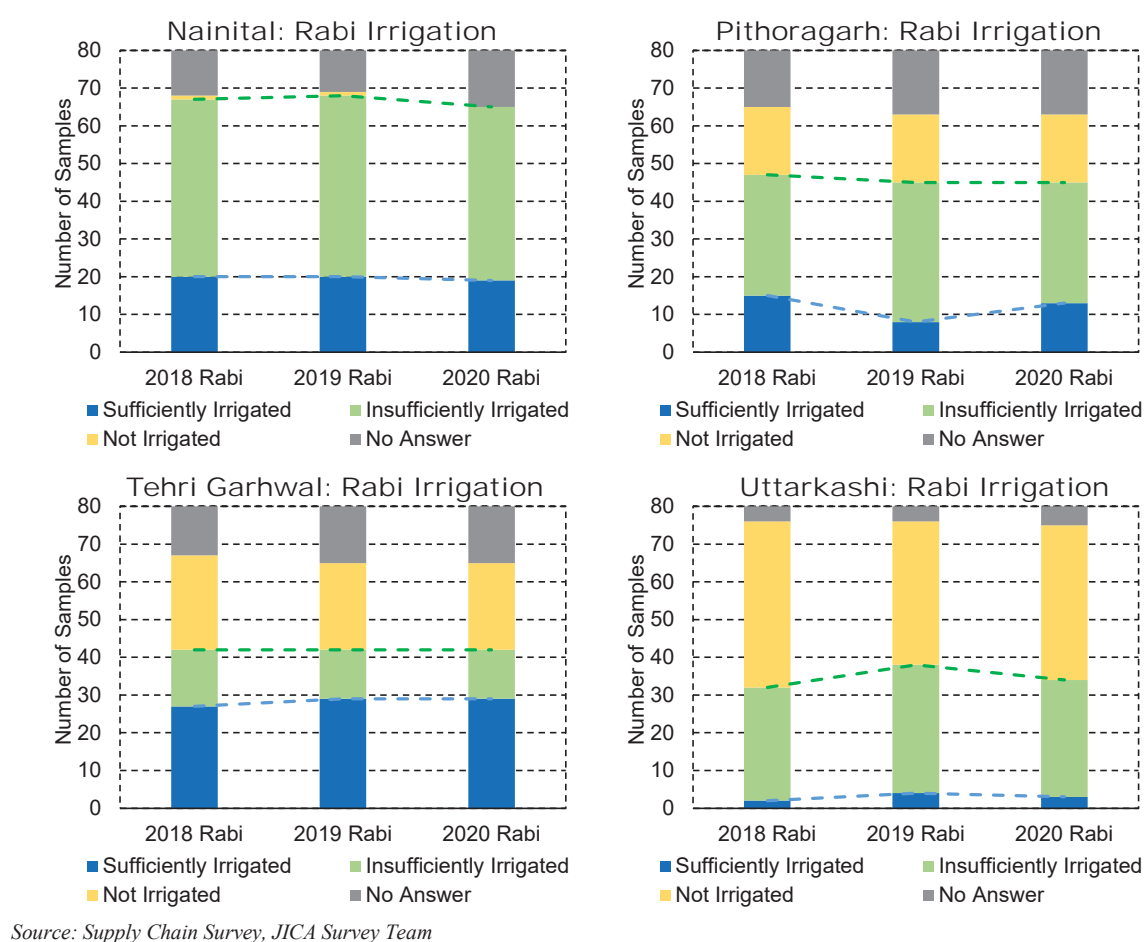


Figure 9.7 Yearly Fluctuation of Irrigation Water Availability in Kharif



² As the block name for Vin was partly misspelled as Vind in Pithoragarh in the database, the final figure will be corrected in the final report.

**Figure 9.8 Yearly Fluctuation of Rainfed Status in Kharif****Figure 9.9 Yearly Fluctuation of Irrigation Water Availability in Rabi****Comment (g):**

Yearly fluctuation of water availability is not so significant.

9.2 Problems with Irrigation Facilities/ System

Result:

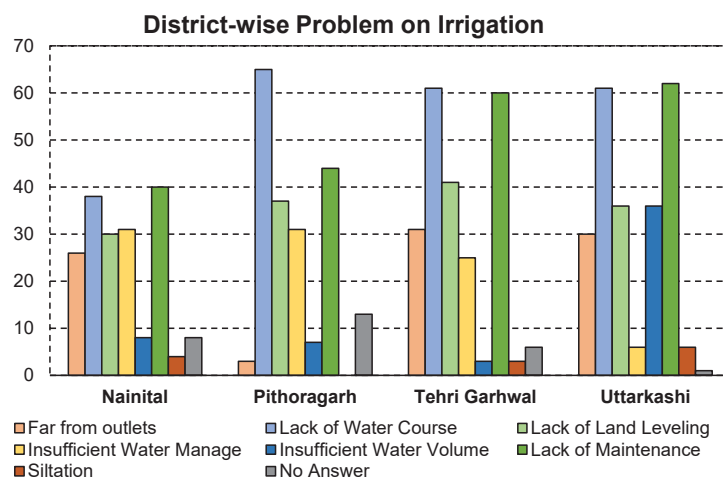


Figure 9.10 Problems on Irrigation in each District

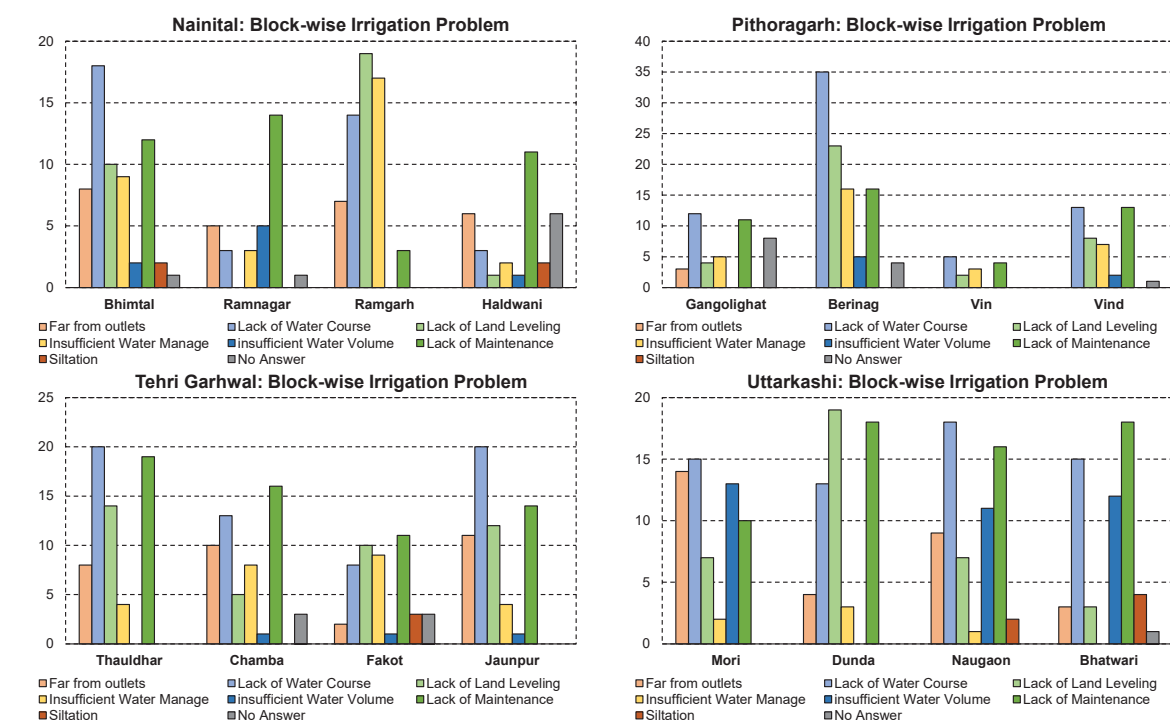


Figure 9.11 Problems on Irrigation in each Block

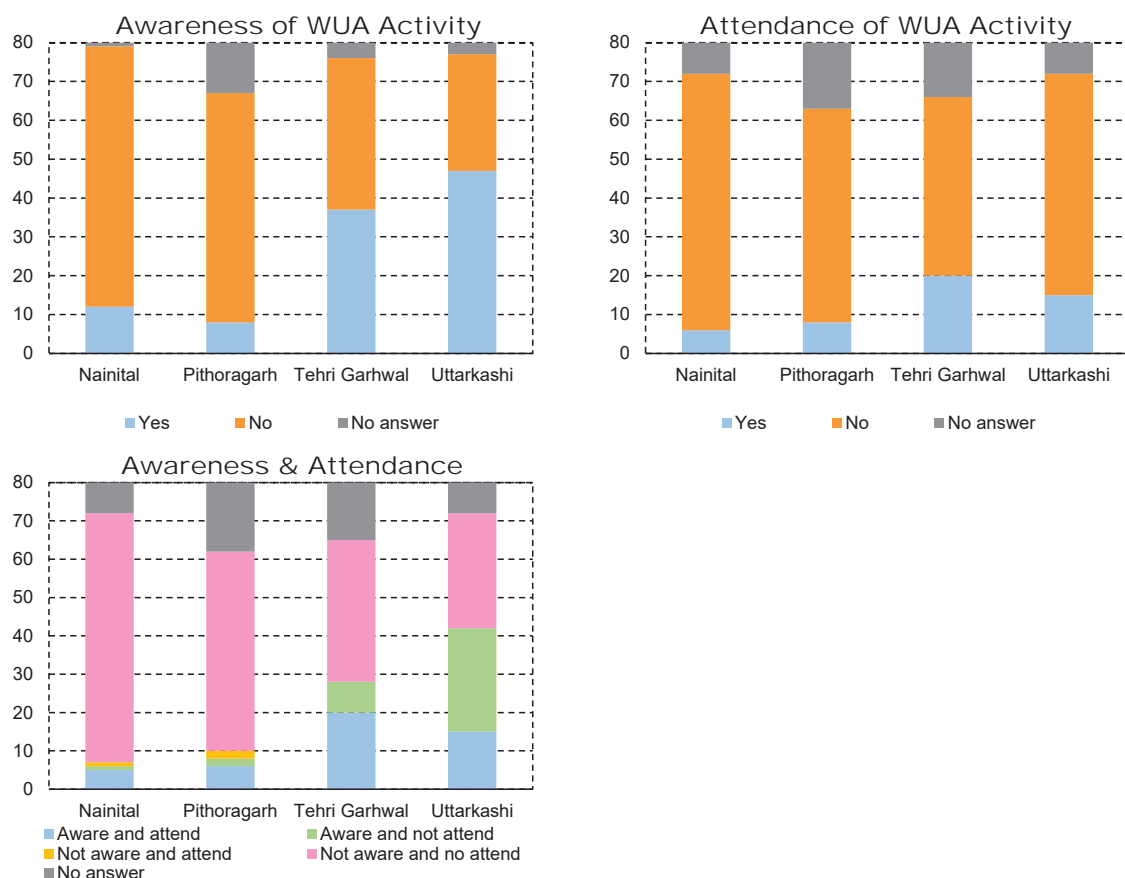
Comment:

More than 50% of farmers in each district pointed out “lack of Maintenance (of irrigation facilities)”. Aside from Nainital, more than 60% of farmers in the other three districts also mentioned that they have not enough water courses.

Problems on irrigation in blocks differs even if the blocks are in the same district. For instance, in Nainital, lack of maintenance of irrigation facilities are major among three blocks except for Ramgarh where lack of land levelling insufficient water management is the most major problems.

9.3 Awareness of Activities of Water Users' Association and Attendance to WUA Activity

Result



Source: Supply Chain Survey, JICA Survey Team

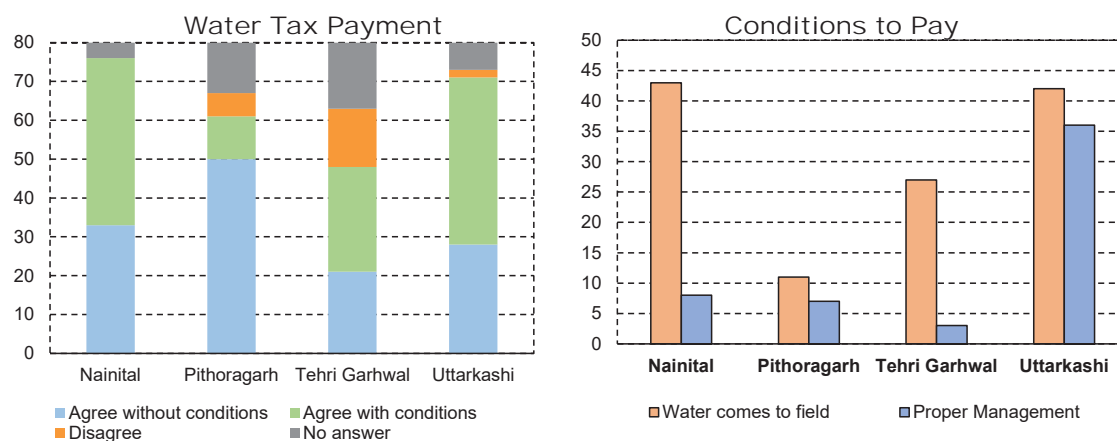
Figure 9.12 Awareness and Attendance of WUA Activity

Comment:

Despite irrigation condition is relatively better in Nainital, farmers don't aware WUA's activity and, therefore, don't attend the activity. On the other hand, although almost half of farmers aware WUA's activity, less than 25% of farmers join the activity.

9.4 Willingness to Pay for Fees/ Charges for Operation and Maintenance of the Irrigation System

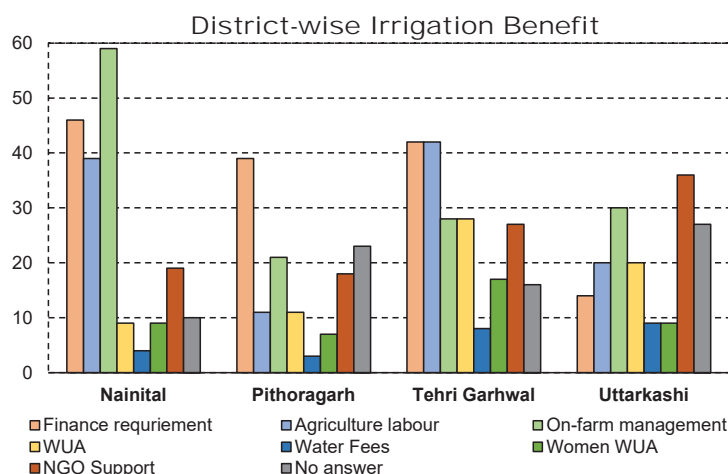
Result



Source: Supply Chain Survey, JICA Survey Team

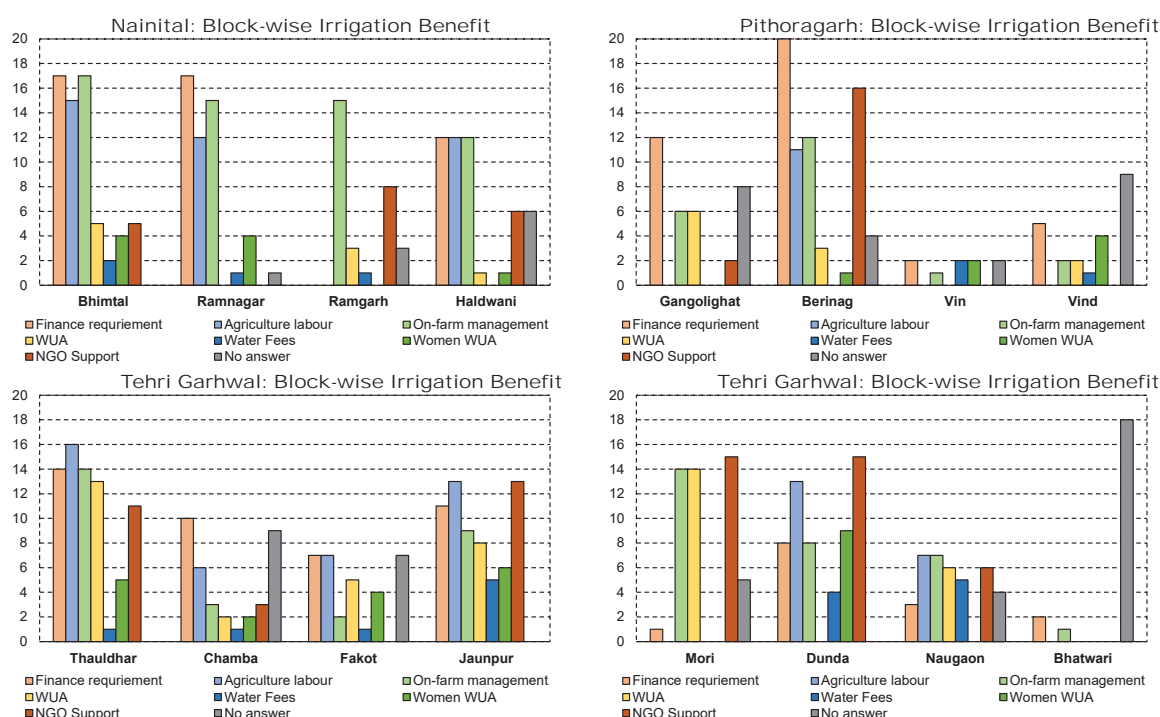
Comment:

Although most farmers can agree to pay water tax, 50% of farmers among them requires conditions to pay. Their major requirement is that the irrigation water actually comes to their field. In addition, farmers in Uttarkashi also require proper management of irrigation water.

9.5 Important Items/ Issues to be Addressed If Receiving Benefits from Irrigation Facilities**Result**

Source: Supply Chain Survey, JICA Survey Team

Figure 9.13 Important/Necessary Item for Irrigation in each District



Source: Supply Chain Survey, JICA Survey Team

Figure 9.14 Important/Necessary Benefit by Irrigation in each Block

Comment:

Farmers in Nainital shows significant trends of needs that “on-farm management by WUA”, “Financial requirement”, and “Additional labor” is the most important/necessary. The similar trends are also found

in blocks of Bhimtal, Ramnagar, and Haldwani in Nainital, Berinag in Pithoragarh, and Thauldhar and Jaunpur in Tehri Garhwal. “NGO’s support” can be an important /necessary item for farmers in some blocks, such as Mori and Dunda in Uttarkashi.

10. Credit and Indebtedness

10.1 Households Took Loan (Attachment 1 - Table 12.1 & 12.2)

Out of the total number of survey households, 23.8% of the households took loan. Gender segregated data shows that the proportion of MHH was 30.7% and 11.3% for FHH. Loan was taken both by male and female in both category of the households. However, in MHH, it was mostly male household member who took loan.

10.2 Source of Loan

With the limited responses recorded, cooperative bank is the main source. Otherwise, the informants did not specify the source. (Attachment 1 - Table 12.3)

10.3 Purposes (Attachment 1 - Table 12.4)

Main reasons for borrowing money were to purchase bullock, for paddy and crop production, and family consumption including marriage.

10.4 Amount of Loan Taken

The average amount of loan taken was 66,500 INR for agriculture operating in Kharif and 53,333 INR for Rabi. Bhimtal (Tomato cluster) in Nainital, Vin (Apple cluster) in Pithoragarh, Fakot (Narendranagar) (Plum cluster) in Tehri Garhwal showed high loan amount in Kharif. For Rabi season, Bhimtal (Tomato cluster) in Nainital indicated the highest amount of loan. Household category wise analysis indicated that loan amount taken by FHH for various purposes was less than that of MHHs. For instance, Kharif agriculture operation the loan amount taken by FHH was 50,714 INR and 71,304 for MHH. For personal consumption, 18,333 INR for FHH whereas the figure for MHH marked 83,667 INR. (Attachment 1 - Table 12.6.)

Table 10.1 Average Amount of Loan Taken

District	Block	Agriculture operation (Kharif)	Agriculture operating (Rabi)	For buying agriculture inputs	For reaching market	Personal
Nainital	Bhimtal	87,000	100,000			100,000
	Haldwani	10,000		70,000	20,000	1,000
	Ramgarh					
	Ramnagar					
	Total average	74,167	100,000	70,000	20,000	50,500
Pithoragarh	Berinag (1)					
	Berinag (2)					
	Gangolighat					
	Vin	75,000				150,000
	Total average	75,000				150,000
Tehri Garhwal	Chamba	55,000	40,000	50,000		
	Fakot	93,750				
	Jaunpur					
	Thauldhar	50,000				
	Total average	69,286	40,000	50,000		
Uttarkashi	Bhatwari					20,000
	Dunda					
	Mori		20,000			
	Naugaon	10,000				17,500
	Total average	10,000	20,000			18,333
Total		66,500	53,333	60,000	20,000	51,000

Source: Supply Chain Survey, JICA Survey Team

10.5 Interest Rate and Mortgage

The interest rate levied on the loan was asked. However, the respondent did not specify whether it is for monthly or annual rate. Thus, the data analysis cannot be fully carried out. The data suggest the frequently levied interest rate is between 5% to 7.5%. (Attachment 1 - Table 12.7)

As for mortgage, only 2 informants (1 FHH taking loan for agriculture operation in Kharif and 1 MHH taking loan for personal consumption) indicated that they mortgaged livestock for taking loan.

11. Extension Services

11.1 Means of Getting the Latest Information on Farming

The source of agriculture practices are mostly community meetings and KVK. 46.9% of households reply on other farmers and neighbours and 43.8% on agriculture extension worker. Newspaper, leaflets and etc. are used by 41.9%. The difference between MHH and FHH was the use of agriculture fairs and fam days. FHHs indicated about 10% more households seeing these events as source of information while about 20% less FHH indicated agriculture extension worker as a source of information. (Attachment 1 - Table 13.1)

Table 11.1 Means to Obtain the Latest Information on Farming

District	Block	Radio	Community meetings and KVK	Agriculture Extension Worker	Newspapers, leaflets, and other printed material	From other farmer, neighbor, relatives)	Agriculture fairs, farm days etc.	Own experience	NGO	Others	Total
Nainital	Bhimtal	0	18	11	14	14	2	2	1	6	68
	Haldwani	0	19	16	14	16	5	7	6	9	92
	Ramgarh	0	1	14	13	2	0	0	9	0	39
	Ramnagar	0	18	16	15	15	2	1	2	2	71
	Total	0	56	57	56	47	9	10	18	17	270
Pithoragarh	Berinag	0	19	3	20	12	11	3	3	24	95
	Gangolighat	1	13	0	0	15	9	0	1	14	53
	Vin	2	5	1	1	4	4	3	0	2	22
	Vind	1	15	6	0	10	5	7	0	5	49
	Total	4	52	10	21	41	29	13	4	45	219
Tehri Garhwal	Chamba	4	16	9	4	9	3	4	1	7	57
	Fakot	2	12	4	3	7	2	0	1	7	38
	Jaunpur	9	20	20	17	19	12	7	8	11	123
	Thauldhar	8	20	20	15	15	14	9	3	13	117
	Total	23	68	53	39	50	31	20	13	38	335
Uttarkashi	Bhatwari	0	3	1	1	0	2	1	1	4	13
	Dunda	2	20	19	14	12	0	15	4	1	87
	Mori	0	15	0	0	0	2	0	0	18	35
	Naugaon	3	20	0	3	0	9	0	2	18	55
	Total	5	58	20	18	12	13	16	7	41	190
Total		32	234	140	134	150	82	59	42	141	1,014
% to Total No of HH		10	73.1	43.8	41.9	46.9	25.6	18.4	13.1	44.1	-

Source: Supply Chain Survey, JICA Survey Team

11.2 Training and Extension Service in 2020

The informants received training and extension services on various topics. 34.7% of the total households received training/ extension services on crop production, cropping pattern and farming and 25.0% on horticulture and tree crops. Mushrooms and dairy were reported by 1 household out of total survey households. MHH and FHH showed similar tendency except training/ extension service for fisheries. It was largely reported by MHHs.

Table 11.2 Topics of Extension Program/ Service Attended in 2020

District	Block	Crop production/ cropping pattern/ farming	Livestock/ vaccination/ artificial insemination	Fisheries	Cooperative activities/ enrollment/ share & savings deposits/ credit	Land improvement/ Irrigation/ Drainage	Horticulture/ tree crops	Income generation activities in the household	Total
Nainital	Bhimtal	0	0	1	0	0	0	0	1
	Haldwani	5	5	4	2	4	2	2	24
	Ramgarh	5	1	0	0	2	13	0	21
	Ramnagar	4	6	3	3	3	1	0	20
	Total	14	12	8	5	9	16	2	66
Pithoragarh	Berinag (1)	12	4	3		1	4	1	25
	Gangolighat	10		2					12
	Vin	7							7
Tehri Garhwal	Total	29	4	5	0	1	4	1	44
	Chamba	6	5	0	3	1	6	1	22
	Fakot	0	1	0	2	0	1	0	4
	Jaunpur	14	10	0	11	3	8	9	57
	Thauldhar	13	8	1	9	3	7	13	54
Uttarkashi	Total	33	24	1	25	7	22	23	137
	Bhatwari	16	17	14	15	15	16	16	109
	Dunda	10	4	0	1	4	14	1	34
	Mori	1	1	0	0	1	1	0	4
	Naugaon	8	1	0	6	0	7	1	23
Total		111	63	28	52	37	80	44	417
% to Total No of HH		34.7	19.9	8.8	16.3	11.6	25.0	13.8	-

Source: Supply Chain Survey, JICA Survey Team

11.3 Frequency of Visits by Extension Worker in 2020

In 2020, on an average, the extension workers visited farmers 3.5 times. The farmers in Ramgarh had the highest number of visits by the extension worker. It has been reported that the farmers in Ramgarh in Nainital are mostly progressive farmers, which could be a reason for getting frequent visits by the extension workers. The average number of visits for Pithoragarh, Tehri Garhwal and Uttarkashi was 2.3 time in 2020. Mori (Apple cluster) and Naugaon (Walnut cluster) in Uttarkashi and Fakot (Plum cluster) and Chamba (Ginger cluster) in Tehri Garhwal reported less than once a year.

Table 11.3 Frequency of Visits by Extension Worker in 2020

District	Block	Overall Average		
		FHH	MHH	Total
Nainital	Bhimtal	4.0	1.2	1.5
	Haldwani		2.2	2.2
	Ramgarh	27.0	14.7	20.4
	Ramnagar		2.5	2.5
	Total Average	23.7	4.9	8.4

District	Block	Overall Average		
		FHH	MHH	Total
Pithoragarh	Berinag	4.4	5.7	4.9
	Gangolighat	0.7	6.2	2.1
	Vin	2.4		2.4
	Vind	3.0	3.0	3.0
	Total Average	2.7	5.4	3.6
Tehri Garhwal	Chamba	3.0	0.6	0.9
	Fakot	0.0	1.0	0.3
	Jaunpur	4.3	3.1	3.5
	Thauldhar	3.0	3.0	3.0
	Total Average	1.9	1.8	1.9
Uttarkashi	Bhatwari	2.0	1.3	1.5
	Dunda	3.0	2.5	2.6
	Mori	0.0	0.0	0.0
	Naugaon	0.0	1.0	0.7
	Total Average	1.4	1.3	1.3
Total Average for 4 districts		4.3	2.9	3.5
Total Average for 3 districts (Pithoragarh, Tehri Garhwal, and Uttarkashi)		2.4	2.3	2.3

Source: Supply Chain Survey, JICA Survey Team

11.4 Types of Information/ Advice Obtained from the Extension Worker

40.6% of the total households sought information on fertiliser application from the extension worker and 39.1% on plant protection. Information/ advice on new crop varieties was obtained by 35.9% of the households. Household category wise, 21.7% of the FHH obtained information on other economic opportunities whereas that of MHH was 5.4%. Less than half the proportion of FHH received information on improvement of farming practices in comparison to that of MHH. (Attachment 1 - Table 13.4)

Table 11.4 Types of Information/ Advice Obtained from the Extension Worker in 2020

District	Block	Plant protection	Fertilizer application	Water management	Improvement of farming practices and yields	New crop varieties	Other economic opportunities	Special women's programme	Information on Insecticide	Village Development	Total
Nainital	Bhimtal	15	17	12	11	10					65
	Haldwani	13	16	15	15	12	4	3			78
	Ramgarh		7	1	4	5					17
	Ramnagar	17	17	12	14	10	1				71
	Total	45	57	40	44	37	5	3	0	0	231
Pithoragarh	Berinag	12	12	14	1	15	18				72
	Gangolighat	10	4	7	1	6	10				38
	Vin	3	3			4					10
	Vind	8	10	1	1	9	1				30
	Total	33	29	22	3	34	29	0	0	0	150
Tehri Garhwal	Chamba	3	1	1	1	2	1	1			10
	Fakot	2	1	1	1	1	1			1	8
	Jaunpur	15	14	4	5	10					48
	Thauldhar	14	15	3	6	12			3		53
	Total	34	31	9	13	25	2	1	3	1	119
Uttarkashi	Bhatwari					2					2
	Dunda	10	10	2	16	13	2	2			55
	Mori		1			1					2
	Naugaon	3	2	2		3					10
	Total	13	13	4	16	19	2	2	0	0	69

District	Block	Plant protection	Fertilizer application	Water management	Improvement of farming practices and yields	New crop varieties	Other economic opportunities	Special women's programme	Information on Insecticide	Village Development	Total
Total		125	130	75	76	115	38	6	3	1	569
% to Total No of HH		39.1	40.6	23.4	23.8	35.9	11.9	1.9	0.9	0.3	

Source: Supply Chain Survey, JICA Survey Team

11.5 Reasons for Not Seeking Information/ Advice from the Extension Officer

Most frequently identified reasons for not seeking information/ advice from extension officers included 1) difficult to contact extension officers, no village extension worker in the village, and no women extension worker to advise women farmers. Some farmers indicated that they do not know about extension services. The detail is provided in Attachment 1 - Table 13-4 2).

12. Role of Women in Agriculture

12.1 Agriculture Land Ownership

Among 41% of FHH and 32.7% of MHH, women own agriculture land. In total, women own agriculture land in the 35.9% of survey households. (Attachment 1 - Table 14.1)

12.2 Agriculture Work done by Women

Planting, weeding, harvesting works are commonly done by women. Selling in the market appears to be generally the task of men. The gender vision of labour in agriculture shows similar tendency between MHH and FHH. The detail is found in Attachment 1 - Table 14.2.

Table 12.1 Type of Farming Related Work Mainly Done by Women

Type of Work	% to Total No of HH (N=320)
Planting	79.7
Weeding	81.3
Harvesting	77.2
Threshing/ Winnowing/ Cleaning	49.7
Irrigation water management	18.4
Harvesting	58.8
Packing/ Bundling	48.4
Negotiating price when selling	41.6
Selling in the local market	21.3

Source: Supply Chain Survey, JICA Survey Team

12.3 Time Spent on Farming Related Activities

Women in the survey households spend 5.1 hours in peak season and 3.9 hours in low season for agriculture related activities.

Table 12.2 Time Spent on Farming Related Activities

District	Block	FHH		MHH		Total	
		Peak	Low	Peak	Low	Peak	Low
Nainital	Bhimtal	8.0	10.0	4.1	4.6	4.3	4.9
	Haldwani			3.0	3.8	3.0	3.8
	Ramgarh	5.0	2.0	3.6	1.2	3.8	1.3

District	Block	FHH		MHH		Total	
		Peak	Low	Peak	Low	Peak	Low
Pithoragarh	Ramnagar			2.6	2.8	2.6	2.8
	Total Average	6.5	6.0	3.3	3.6	3.4	3.6
	Berinag	4.6	3.3	5.1	3.8	4.8	3.5
	Gangolighat	3.7	3.8	5.4	4.0	4.3	3.9
	Vin	7.2	3.2			7.2	3.2
	Vind	7.1	4.7	5.8	5.5	6.7	4.9
Tehri Garhwal	Total Average	5.3	3.8	5.4	4.2	5.3	3.9
	Chamba	7.3	6.0	8.0	7.0	7.9	6.8
	Fakot	5.0	4.7	7.5	9.8	6.4	7.4
	Jaunpur	4.6	3.3	4.5	4.2	4.5	4.0
	Thauldhar	3.8	3.5	3.8	3.5	3.8	3.5
Uttarkashi	Total Average	4.9	4.4	6.0	6.0	5.7	5.6
	Bhatwari	6.0	2.0	5.9	2.0	5.9	2.0
	Dunda	6.0	3.0	5.9	2.8	5.9	2.8
	Mori	5.0	2.0	5.1	2.2	5.1	2.2
	Naugaon	6.4	3.5	6.0	2.5	6.2	2.9
Total		5.4	3.8	4.9	3.9	5.1	3.9

Source: Supply Chain Survey, JICA Survey Team

12.4 Time Spent on Domestic Chore

The time spent on domestic chore was reported to be 5.3 hours in agriculture peak season and 4.5 hours in agriculture low season.

Table 12.3 Time Spent on Domestic Chore

District	Block	FHH		MHH		Total	
		Peak	Low	Peak	Low	Peak	Low
Nainital	Bhimtal	6.5	5.0	3.3	3.5	3.4	3.5
	Haldwani			3.4	3.6	3.4	3.6
	Ramgarh	5.0	3.0	2.6	2.6	3.0	2.7
	Ramnagar			2.9	3.3	2.9	3.3
	Total Average	3.7	5.0	4.1	4.6	3.8	4.9
Pithoragarh	Berinag	4.2	4.0	4.0	3.9	4.1	3.9
	Gangolighat	2.9	2.9	4.4	4.4	3.4	3.4
	Vin	3.6	7.2			3.6	7.2
	Vind	4.0	7.6	3.8	6.5	3.9	7.2
Tehri Garhwal	Total Average	5.3	3.8	5.4	4.2	5.3	3.9
	Chamba	18.0	9.3	10.6	6.9	11.8	7.3
	Fakot	13.1	13.5	17.0	11.3	15.2	12.2
	Jaunpur	5.0	4.3	5.3	4.0	5.2	4.1
	Thauldhar	5.3	4.0	4.9	3.3	5.0	3.5
Uttarkashi	Total Average	10.4	8.6	9.3	6.2	9.6	6.9
	Bhatwari	3.2	4.0	3.4	3.8	3.3	3.9
	Dunda	4.5	3.0	5.5	2.7	5.4	2.8
	Mori	3.0	2.0	4.1	2.4	3.9	2.4
	Naugaon	4.1	2.7	4.5	2.3	4.4	2.4
Total		5.4	5.4	5.3	4.1	5.3	4.5

Source: Supply Chain Survey, JICA Survey Team

12.5 Household Decision Making

Decisions concerning which crops to grow, the volume to sell were decided jointly by male and female members of the family or by male member of the family among the survey households. The household category wise analysis is given in Attachment – 1 Table 14.5.

Table 12.3 Household Decision Making

Type of Decision	Men	Women	Joint
------------------	-----	-------	-------

Which crop to grow	20.0	6.6	55.6
Which pesticides/ chemicals to use	40.9	4.1	34.1
What volumes to sell	22.2	5.9	51.3
Where to sell	34.1	4.4	40.6
What prices to sell	30.0	4.4	45.0
Where to take loan	28.4	4.4	45.6

Source: Supply Chain Survey, JICA Survey Team

12.6 Group Membership

Women in the 40.0% of the total survey households are members of SHGs and 23.8% of them have the membership with Cooperatives. Membership to federation or livelihood cooperative are taken by women in 19.7% of households. (Attachment 1 - Table 14.6)

Table 12.4 Group Membership Taken by Women

District	Block	SHG	FPO/FPC	Federation/ livelihood Collective	Cooperative	Women's Group	Agriculture Market (Krishi Mandi)
Nainital	Bhimtal	12	0	0	6	0	0
	Haldwani	7	0	1	11	0	0
	Ramgarh	0	0	3	14	0	0
	Ramnagar	2	0	0	0	0	0
	Total	21	0	4	31	0	0
Pithoragarh	Berinag	5	0	6	0	0	0
	Gangolihat	11	0	0	0	0	0
	Vin	1	0	4	5	0	0
	Vind	3	0	8	5	3	0
	Total	20	0	18	10	3	0
Tehri Garhwal	Chamba	17	0	15	8	1	1
	Fakot	4	1	2	4	2	0
	Jaunpur	12	7	0	16	2	6
	Thauldhar	18	5	6	2	0	5
	Total	51	13	23	30	5	12
Uttarkashi	Bhatwari	1	0	15	0	0	0
	Dunda	18	0	0	0	0	0
	Mori	6	0	0	0	1	0
	Naugaon	11	0	3	5	0	0
	Total	36	0	18	5	1	0
Total		128	13	63	76	9	12
% to Total No of HH (N=320)		40.0	4.1	19.7	23.8	2.8	3.8

Source: Supply Chain Survey, JICA Survey Team

12.7 Extension Program for Women

Women in the 23.4% of the total survey households are aware of or took part in extension activities for women. The type of activities included Kishan Mela (Farmers' Meet), seed distribution/ tree plantation, training and exposure visits. Among these activities most frequently referred by the informants was Kishan Mela. The organizers of these activities included agriculture department, horticulture department, cooperative, Ajeevika Federation (Federation organized under State Rural Livelihood Mission) and NGO. (Attachment 1 - Table 14.7)

Preliminary Findings from the Supply Chain Survey

(Farmer Organizations Survey)

1. Background of Farmers' Institutions in Uttarakhand

At the time of formation of Uttarakhand in the year 2000, there were pre-existing cooperative institutions registered under the traditional cooperative Act of Uttar Pradesh, but Uttarakhand formulated its own Cooperative Societies Act in 2003 – Uttarakhand Cooperative Societies Act 2003¹. In the same year, an autonomous Uttarakhand Self Reliant Co-operatives Act, 2003² was also formed. Many SHG promoting organisations opted this Act for registering the federations of their SHGs, however, few others opted for Societies Registration Act 1960. The traditional Primary Agriculture cooperatives (PACS) remained registered under the traditional cooperative Act of Uttarakhand. Later, in 2011-12, when promotion of FPOs in Uttarakhand started, some of the federations got registered as producer companies under Companies Act.

Hence, in Uttarakhand, Farmers' institutions are registered in all the three variety of institutions – Not for profit type (Societies Registration Act 1960), Mutual benefit type institutions (Uttarakhand Cooperative Societies Act 2003 and Self-Reliant Cooperative Act 2003) and also Producer Companies (The Companies Act 1956 revised in 2013). In the present context majority of the cluster level Federations and FPOs are registered under Uttarakhand Self Reliant Cooperative Society Act 2003.

1.1 Primary Informal Groups

The other community institutions that were existing in Uttarakhand were Self Help Groups of NABARD, various projects and NGOs. Self Help Groups were formed in the state under SHG Bank Linkage Programme of NABARD³. SHG Bank Linkage Programme started as a pilot to link around 500 SHGs of poor to the formal financial institutions during the year 1992-93. It has become the largest microfinance programme in the world, in terms of the client base and outreach. The SHGs which follow 'Panchsutras' viz. conduct of regular group meetings, regular savings within the group, internal lending based on the demand of members, timely repayment of loan and maintenance of proper books of accounts are considered to be of good quality and over years have proved themselves to be good customers of Banks. In Uttarakhand also SHGs were promoted under SHG Bank linkage programme by various NGOs, Banks and Cooperatives including PACS. Several projects like Mahila Dairy Project, Swayam Siddha Project and several other projects also created SHGs in Uttarakhand.

Later Projects under projects like ULIPH-IFAD, ILSP-IFAD, GRAMYA (World Bank), SHGs, Producer Groups and Vulnerable Producer Groups were formed. Some of the NGOs and Project opted to call groups of farmers as FIGs (Farmers Interest Groups). Since mandatory savings was a common factor in all the groups, therefore broadly all these groups are considered as **Self-Help Groups**.

1.2 Secondary level federations of SHGs/PGs/FIGs, Livelihood Collectives, Cluster Level Federations

In Uttarakhand, various project such as Diversified Agriculture Support Project (DASP), Mahila Dairy Project (supported under STEP Project of Department of Women and Child Development) and various NGOs opted to form federations of SHGs. Similarly, projects such as ULIPH-IFAD, ILSP-IFAD (IFAD),

¹ <https://cooperative.uk.gov.in/pages/display/146-uttarakhand-cooperative-act-2003>

² <http://www.bareactslive.com/UTR/utr144.htm>

³ <https://www.nabard.org/contentsearch.aspx?AID=225&Key=shg+bank+linkage+programme>

GRAMYA-I and GRAMYA -II (World Bank) also opted to form federations at the cluster level in the form of Livelihood Collectives or Federations. Now, under State Rural Livelihood Mission (USRLM) SHGs and cluster level federations (CLFs) are being formed in all the 95 blocks of the State. These are promoted by Department of Rural Development.

2. Farmer Producer Organisations (FPOs)

2.1 Background

Department of Agriculture and Cooperation (DAC), Ministry of Agriculture, Government of India launched a pilot programme for promoting member-based Farmer Producer Organisations (FPOs) during 2011-12, in partnership with state governments, which was implemented through the Small Farmers' Agribusiness Consortium (SFAC). The pilot involved the mobilisation of approximately 0.25 million farmers into 250 FPOs (each with an average membership of 1000 farmers) across the country, under two sub-schemes of the Rashtriya Krishi Vikas Yojana (RKVY), namely National Vegetable Initiative for Urban Clusters and Programme for Pulses Development for 60,000 rainfed villages. The purpose of the project is to collectivise farmers, especially small producers, at various levels across several states, so as to foster technology penetration, improve productivity, enable improved access to inputs and services and increase farmer incomes, thereby strengthening their sustainable agriculture-based livelihoods. The pilot has already shown encouraging results and more than 0.3 million farmers are presently mobilized into village-level Farmer Interest Groups (FIGs), which are being federated into registered FPOs. Besides empowering farmers through collective action, these grassroots bodies are emerging as nodal points for the transmission of cultivation technology, inputs and credit and pooling their production to leverage the market for better prices.

In a recent decision of Ministry of agriculture & Farmers Welfare, Government of India (Circular No F No 28011/1/2020-M-II (Pt.) dated 29th Feb 2020⁴), the Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi, has given its approval for 10,000 FPOs to be formed in five years period from 2019-20 to 2023-24 to ensure economies of scale for farmers. Support to each FPO be continued for 5 years from its year of inception. Based on the decisions of the Cabinet Committee, MoA&FW issued a circular on FPO promotion.

2.2 Types of Farmers' institutions and Groups

Analysis of the grassroots community institutions of farmers reveals that there are primary level informal institution/Groups and also secondary level institutions in the form of federations of informal primary groups. Following Table provides a clear picture of community level collectives of farmers.

Table -1: Type of Farmers Institutions and their Legal Entities

Type of Community Institutions	Departments/ Ministries/ Institutions	Level of Institutions and Legal status
Multipurpose Primary Agriculture Cooperative Societies (MPACS ⁵), Bhesaj	Promoted and supported by Department of Cooperatives	Formal Institutions of Farmers registered under Uttarakhand Cooperative

⁴ <http://sfacindia.com/UploadFile/Statistics/Government-Order-on-FPO-Scheme.pdf>

⁵ **MPACS:** MPACS are multi-purpose cooperatives having credit, savings (Mini Bank), Input supply (Fertilizers, Seeds, Pesticides/ Insecticides), Marketing of Agriculture /Horticulture produce, Consumer business and custom service business of Agri. Implements. Under a World Bank / EEC Project these PACS were provided loans to construct godowns. In Uttarakhand also, these PACS are having Godowns but utilisation of godowns by all the PACS is an issue and often these Godowns are underutilised. These Godowns can be utilised after some required modification for storing horticulture produce.

Sangha (Cooperatives for MAPs)		Societies Act 2003
FPO (registered under Self Reliant Cooperatives/ Producer Companies) Federations/ Livelihood Collectives/ Cluster level Federations (Mainly Self-Reliant Cooperatives)	Ministry of Agriculture and Farmers Welfare/ NABARD/NCDC/SFAC and their CBBO	Livelihood Collectives, Federations CLFs and FPOs are Formal Institutions registered under Self -reliant Cooperative Act 2003 or under Companies Act as Producer Companies Some are also registered under Societies Registration Act 1860
Self Help Groups, Producer Groups, Farmers Interest Groups	Department of Rural Development, Tribal Affairs, Forest, Women and Child Development and other departments and Projects such as IFAD-ILSP, GRAMYA, Himmothan Society and other NGOs	Informal Institutions not registered These groups are linked to banks for savings SHGs are also having credit linkages with banks after grading and assessment by the banks Not all the SHGs are credit linked

3. Outline of the Supply Chain Survey (Farmers' Organization)

- **Coverage of Clusters:** Under the value chain study, four clusters each, from all four project districts – Uttarkashi, Tehri Garhwal Pithoragarh and Nainital were selected for the study in consultation with Department of Horticulture and Food Processing Uttarakhand Hence a total of **16 Clusters were covered** under the supply chain study
- **Coverage of Farmers Institution:** Besides covering Individual farmers and other stakeholders, the supply chain survey also covered various types and levels of institutions of Farmers These institutions were informal groups (SHGS/PGs/FIGs) of women/ farmers and also Formal institutions of the farmers (FPOs/ Livelihood Collectives/Cluster Level Federations/ MPACS)

In the Supply Chain Survey, the coverage of informal groups and Formal farmers' institutions was as under:

- Coverage of FPOs/ Livelihood Collectives/Cluster Level Federations/ MPACS – **17 (one institution per cluster, however in Nainital 2 FPOs were covered)**
- Coverage of Informal groups (SHGS/PGs/FIGs) – **64 (Minimum Four Groups per cluster – 16 x 4)**

Table -2: Details of the Clusters, Crop selected and Sample size

Particulars	Garhwal Region		Kumaon Region		Total Coverage
	Uttarkashi	Tehri	Pithoragarh	Nainital	
Crop Group					Fruits:
Fruit	Walnut, Apple*	Kiwi, Plum	Citrus (Sweet Orange), Apple	Peach*, Litchi	Walnut, Plum, Kiwi, Apple Citrus (Sweet Orange), Peach, Litchi
Vegetable	Potato	Potato, Pea	-	Tomato	
Spice	-	Ginger*	Turmeric*, Garlic	Garlic	Vegetables and Spices: Potato, Pea, Tomato, Garlic, Ginger, Turmeric, Garlic
No of Crop clusters covered in survey	4	4	4	4	16 Clusters
No of FPOs/Livelihood Collectives/Federations/MPACS	4	4	4	4	17* Farmers Institutions FPOs/LCs/Federations/MPACS (one additional FPO covered)
No of SHGs/ Producer Groups Covered (4 SHGs/PGs in one cluster)	16	16	16	16	64 SHGs/PGs/FIGs
No of farmers covered (20 Farmers in each Cluster)	80	80	80	80	320 Farmers (Variety of Farmers)

4. Key Results of the Farmers' institutions Survey (FPO/ LC/MPACS/Federation Survey)

4.1 Overview of the Surveyed Organizations

(1) Type of Organizations covered

For the supply chain study, from 16 clusters, 17 Farmers' institutions from 4 districts were covered. In district Nainital, two FPOs were covered in Ramgarh cluster to get better idea. The breakup in terms of types of second level of farmers institutions are as below:

S No	Type of Farmers' Institution	No of Institutions covered in the survey
1.	FPOs registered under Uttarakhand Self-reliant Cooperative Act 2003 or as Producer Company under Companies Act	3
2.	Livelihood Collectives / SHG -Federations registered under Uttarakhand Self-reliant Cooperative Act 2003	7
3.	Multipurpose Primary Agriculture Cooperatives (MPACS) registered under Uttarakhand Cooperative Societies Act 2003	7
4.	Total FPOs, LCs/Federations/ MPACS covered from 4 districts	17

(2) Number of members in Farmers' organization

The membership in farmers' institutions varies from institution to institution. MPACs membership found to

be varying from 650 minimum to 2648 FPOs membership is varying from 185 to 300 ILSP-IFAD Livelihood collectives registered as self-reliant cooperatives found to be having membership from 548 to 715

This scenario shows that while membership in MPACs revolves around 650 - 2500 members, membership of ILSP-IFAD Livelihood Collectives is around 500 to 700 members In case of newly formed FPOs, the membership is around 200 to 300

(3) Gender of the Members

The scenario of the women members in Farmers' institutions found to be varying as per the type of the institutions In MPACS, there is a dominance of men as in these primary agriculture cooperatives, land ownership was the basis for the membership in the beginning Later on, other households including landless also made members so that benefits of the schemes can also be provided to non-cultivators or landless also In MPACS, the women membership ranges from 2%-21% only In the ILSP-IFAD Livelihood Collectives registered as self-reliant cooperatives, the membership of women found to be varying from 77% to 100% In these institutions, majority of the members are women only In the FPOs formed around 20018-19, the percentage of women in the FPOs is varying from 32% to 66%

(4) Type of Associated Groups

The association of SHGs and Producer groups with Livelihood Collectives and FPOs is not organic⁶ as Uttarakhand self-reliant cooperative Act 2003 does not allow groups to become members of the cooperative Individual farmers through their respective SHGs and Producer Groups become member of the Cooperative or Producer Company In Uttarakhand, majority of the formal institutions of farmers are registered under Uttarakhand self-reliant cooperative Act 2003 and limited number of FPOs are registered as producer companies under companies Act The Multipurpose Agriculture Cooperatives (MPACS) are also having farmers as individual members In case of MPACS, linkage with SHGs and PGs have not found Technically, all farmers' institutions are **primary cooperatives or companies**

(5) Functions of the Organizations

- i. **Marketing of the Agriculture and Horticulture produce** - It is revealed that 76 % Organisations (13 out of the sample of 17 institutions are engaged in marketing of the agriculture and horticulture produce of the farmers These are both Livelihood Collectives / Federations formed under some project and also newly formed FPOs supported by NABARD/NGOs
- ii. **Market information dissemination** – Out of the total organisations covered, 70 % Organisations (12 out of 17 institution) are providing marketing information to their farmers regarding the market rates in different mandies (APMCs) and direct marketing rate of private buyers
- iii. **Dissemination of information on agriculture (production)** – Out of the total institutions covered, 65% Organisations (11 out of 17 institutions) are such that they provide guidance and information about production techniques to the farmers These are mainly IFAD – ILSP Livelihood Collectives that has technical person from the Technical Agency (NGO) associated with the project and also Agri Horticulture Assistant Manager in the Project at District Management Units
- iv. **Providing credit to the members** – As far as the supply of credit services is concerned, all the Multipurpose Primary Agriculture Cooperatives (41 % of the total sample), are providing credit services to the farmers Some of the established Livelihood Collectives of IFAD-ILSP are also able to give credit to the farmers (3 out of 7 Covered) In all, 59 % Organisations (10 out of 17 institution) are providing credit services to the members

⁶ Not organic means here that formally SHGs/PGs are not members of the cooperatives or FPOs by virtue of the Act. Only individuals can become members of the primary level Self-reliant cooperatives.

-
- v. **Providing Saving services to the members** - Out of the total institutions covered, 65 % Organisations (11 out of 17 institution) are such that they provide savings services to the members Out of these institutions, MPACS are providing savings services to the farmers directly as MPACS function as members of the district Cooperative banks and on behalf of the banks, these institutions provide savings services (Saving bank accounts and fixed deposits) to their members Remaining, Livelihood Collectives are providing savings services to the farmers through their groups/SHGs Here, MPACS are also able to provide services for small savings (Savings Bank account) as well as fixed deposits as these institutions function as 'Mini Banks' for District Cooperative Banks
 - vi. **Providing farm inputs at lower costs to the Members** - Out of the total institutions covered, more than 70% (12 out of 17) organisations are providing farm inputs to the farmers MPACS have been traditionally doing this activity of input supply (Fertilizers, Seeds and Insecticides/ Pesticides) Established federations/ Livelihood Collectives of SHGs/PGs are also doing this activity Newly formed FPOs have yet to start this activity
 - vii. **Provide farm machineries for the members** - Some of the farmers' institutions are also doing the activity of providing farm machines and tools on custom service basis to their members The study shows that these are mainly established Livelihood Collectives/ federations of SHGs (Self-Reliant cooperatives formed under ILSP-IFAD project) that are doing this activity Out of the total, 29 % organisations (5 out of 17) are providing farm machines and tools on rent and earning well
 - viii. **Other business activities:** Out of the total of farmers' institutions covered under the study, 6% (1 out of 17 organisations) are also found to be running a '**Patanjali Store**' About 41 % farmers institutions especially Livelihood Collectives/federations of SHGs (7 out of 17) are also providing support by doing convergence with other line departments like agriculture, Animal husbandry etc Facilitation to provide Kisan Credit Card (KCC) is also done by these institutions

4.2 Infrastructure Facilities in the Farmers' Organizations

- a) **Farmer's Organizations having collection points (Owned or Rented):** Out of the total institutions covered, 59% (10 out of 17) are having their own collection Centres These are mostly Livelihood Collectives supported under IFAD project and also MPACS that were already having the Godown cum office/ collection centres Some of the new FPOs are also having collection by getting the support from the promoter NGOs

Utilisation: As far as utilisation of the collection centre is concerned, Farmers' institutions are utilising it for keeping inputs to be distributed to the farmers and also for the produce of farmers as well as processed products that has to be marketed (ILSP-IFAD)

- b) **Farmer's Organizations having Primary Processing/ Grading Unit (Owned or Rented):** Out of the total 17 organisations covered in the study, 7 Livelihood Collectives/ Federations of SHGs formed under IFAD-ILSP project are having some or the other processing arrangements One new FPO promoted by an NGO – Aarohi is also having processing arrangements at the FPO level Hence, 47% of the total Farmers' institutions covered are having processing arrangement This shows that gradually farmers' institutions are taking up processing activity provided they get external support for plant and machinery

Utilisation: Most of the processing units are established with the support of externally funded projects and also under MSME Growth Centre initiative The products are marketed from a common brand of '*Hilance*'. In some cases, wherein the FPO is promoted by the NGOs like Aarohi, different brand is used The organisation promotes 'Piyuda homes brand'

- c) **Farmer's Organizations having Packing facilities (Owned or Rented):** All the 7 Farmers' organisations promoted by IFAD-ILSP has the '**Nano packaging unit**' provided to the institutions under the project This has helped to standardize the packaging of '*Hilance*' brand Besides that, 2 more FPOs are also having packaging units In all, 53 % (9 out of 17 organisation) institutions are having their own packaging units
-

Utilisation: All the farmers' institutions are using the packaging units for packing of their own products. ILSP-IFAD project has standardized Nano packing units. These nano Packaging unit includes – a Bend Sealer, Weighing Machine, Foot Sealer, Manual Sealing Machine, Hot Air Gun, Cap Sealing Machine, Box Stepping Machine, Bar Code Machine etc



- d) **Farmer's Organizations having Storage facilities (Owned or Rented):** Out of the total 17 institutions, 12 (More than 70%) are having their own godowns whereas 4 (23 %) institutions have rented godowns. Hence, 16 institutions (94%) are having either owned or rented godowns. This shows that for a federation of SHGs/PGs, storage is an essential infrastructure needed. In the case of Livelihood Collectives, besides collection centre as storage units, there are small collection centres at the village/Cluster of villages as per the need.

Utilisation: The storage facilities are utilised by Farmers' institutions mainly for storage of inputs and implements and tools and also produce of the farmers. This is common in most of the federations and livelihood collectives. In case of Federations and Livelihood Collectives of ILSP-IFAD, there are small collection centres at the village or cluster of villages. These small collection centres are being utilised for primary collection of produce before sending it to the main collection centres. These small collection centres are also used as marketing outlets (if these are on road heads), milk collection centres etc depending upon the need of the particular institution.

- e) **Farmers' Organizations having Truck/ Transport Vehicle:** Farmer's institutions covered do not have any truck or vehicle of their own, however 53% (9 out of 17) hire transport vehicle from market to transport their produce. From the interaction with farmers, it was informed that several IFAD-ILSP federations do have transport vehicle of their own.

Utilisation: Federations and Livelihood Collectives and FPOs are hiring the transport vehicles mainly for transporting the produce for marketing.

- f) **Farmer's Organizations having Motorcycle (Owned):** Farmers' institutions are not owning their own two wheelers as the staff use its own vehicles if needed.

- g) **Farmers' Organizations having office -** All the institutions are having owned or rented office. Out of the total, 65 % are (11 out of 17) having own offices whereas remaining 35% are having rented office. While most of the MPACS are already having office cum godowns, ILSP-IFAD Federations/ Livelihood Collectives are also having offices in the collection centres. FPOs that have not got any support for the construction of the office or godown are having their offices on rent.

Utilisation: The federations / Livelihood Collectives and FPOs having their own offices use the offices for the keeping records and dealing with the farmers. In the Collection centres and Growth centres supported under MSME department, Hall for the meetings is also made available in the office. In MPACS offices, meeting halls are not there. Benefit of own building is that it provides Federations / Livelihood Collectives recognition in the area. It can also be used as one of the

collaterals for getting the loans from the banks

- h) **Other facilities** - One of the institutions, Ma Surkanda Devi Swayatt Sahkarita, Jaunpur, Tehri Garhwal is having 'Growth Centre' under MSME. This is a Growth Centre promoted by ILSP-IFAD. This is an agro- processing growth centre with processing of spices, Wheat (Flour Mill), processing of pulses and millets, oil expeller (Mustard oil) etc. Under growth centre, support for building construction and machines were provided to the Livelihood Collective which is registered under Uttarakhand Self-reliant Cooperative Act 2003.

Utilization: The Growth centres are highly useful as processing and Packaging units arrangements are made at the same place in addition to godowns for storage. The federations/ Livelihood Collectives running the growth centres are providing processing services to the members and also producing as their own products to market the products under a brand.

4.3 Main source of revenue for the farmers' organizations

- a) **Membership fee as source of Revenue:** As a compulsory condition, all the cooperative institutions have to collect small amount as membership fee. This fee is nominal only i.e., INR 100 per member. This is not a great source of revenue; however, it is compulsory to pay for getting the membership.
- b) **Farmers' Organisations having Margin taken from the sales of produces as source of revenue:** About 70% (12 out of 17 institutions) are earning by selling the produce of the farmers in mandies and also to other buyers. In case of MPACS, not all MPACS are doing the business of marketing of produce. Some of the MPACS are purchasing farmers' produce under minimum support price (MSP). These are only food grains like wheat and rice and not horticulture produce. Given a proper support of technical storage like cool chambers and cold storages, these MPACS can also undertake the work of purchasing horticulture produce on MSP for the horticulture department.
- c) **Farmers' Organisations getting Financial Assistance from Government/ NGO/ Donor Project:** The federations/ Livelihood Collectives promoted under the ILSP-IFAD project are provided with two types of support - Share capital grant support of INR 3600 per member and also working capital support of INR 0.180 million wherein INR 0.20 million was contributed by the organisation themselves. Hence, each LCs are having a working capital of 0.20 million in the beginning. Further, on the basis of the share capital, institutions get loans from the banks for business. In case of FPOs formed by CBBO (Community based Business organisations - NGOs), institutions received support of HR under NABARD assistance on FPO (10 out of 17 institutions). Under the new guidelines, members will be able to get INR 2000 as share capital grant, however, INR 2000 will be contributed by the members.
- d) **Percentage of farmers' Organisations having any other source of Revenue** – All the MPACS have been functioning as credit organisations also and therefore interest received from the farmers on loans is also a source of revenue. About 41% institutions are getting interest on the loans provided to the farmers. (7 out of 17 institutions).

4.4 Business Turnover of the organizations

The business turnover of the Farmers' institutions varies from Annual Turnover of less than INR 0.50 million to Annual Turnover of more than INR 50.0 million. The Table below provides the glimpse of business turnovers of the institutions in last three years.

Table 3: Annual Turnover of the organizations in the past 3 years

Particulars	FY 2018	FY 2019	FY 2020	Remarks
1 Percentage of farmers'	18 %	18%	6 %	These are very new

Organisations having Annual Turnover of less than INR 0 50 million				institutions formed during 2018-19 These were initiated by NGOs as FPOs
2 Percentage of farmers' Organisations having Annual Turnover of more than INR 0 50 million but less than INR 2 0 million	23%	18%	35%	Most of the institutions that are established 2015-16 These are mainly institutions are Livelihood Collectives /Federations established are registered under Self-Reliant Cooperative Societies Act 2003 These institutions include FPOs registered under Companies Act but the percentage of such FPOs is 6 only These institutions have got working capital support of 0 18 million from IFAD project and also share capital Grant Therefore, these institutions were able to expand their business quickly Two Federations were registered in 2009-10
3 Percentage of farmers' Organisations having Annual Turnover of more than INR 2 0 million but less than INR 5 0 million	18 %	23%	12%	
4 Percentage of farmers' Organisations having Annual Turnover of more than INR 5 0 million but less than INR 10 0 million	6%	6%	12%	
5 Percentage of farmers' Organisations having Annual Turnover of more than INR 10 0 million but less than INR 50 0 million	29%	24%	12%	These are mainly MPACS working for more than 50- 60 years
6 Percentage of farmers' Organisations having Annual Turnover of more than INR 50 0 million	6%	11%	23%	These are mainly MPACS working for more than 50 - 60 years
Total Percentage	100%	100%	100%	

From the Table -3, it can be observed that Farmers' Institutions were formed as Multipurpose Primary Agriculture cooperatives (MPACS) about 50 years back are having business volume per annum ranging from 10 0 million to INR 50 0 million and above also These institutions are about 35% of the total Farmers Institutions covered under the study

The second subset of farmers' institutions is Livelihood Collectives /Federations established are registered under Self-Reliant Cooperative Societies Act 2003 These institutions are having turnover starting from INR 0 50 million to INR 10 00 million In this there are few FPOs that were established in 2015

The third category of institutions are FPOs that have registered in and after 2018 These institutions are having low Annual business turnover of less than INR 0 50 million These institutions required share capital as well as working capital support

4.5 Support for Farmers' Organization

Types of Technical and Financial support received by the Farmers' organizations: The farmers' institutions are getting support in various forms and areas such as storage, management, documentation, Business, input supply, financial services, Savings, marketing of produce, Infrastructure for irrigation, Plantation etc

Key organisations/Individuals (Government, NGO, Private, Individual) providing financial support to

Farmers' organisations: State government departments like Agriculture, Horticulture and Food Processing, Cooperative, promoting NGOs, projects of external agencies such as IFAD, District Cooperative Banks and other banks, NABARD, Krishi Vikas Kendras, MSME for growth centres run by Farmers' institutions

4.6 Types of financial supports received by the Farmers' Organisations:

As far as financial support is concerned, all IFAD-ILSP supported Livelihood Collectives (LCs) have got similar financial support in different forms. Out of total institutions covered, 41% (7 out of 17) received financial support from IFAD project. This support was in three forms – Share capital grant support of INR 3600 per member; Working capital support for business INR 0.180 million (0.020 million contributed by the LC); Second dose working capital (INR 0.180 million (0.020 million contributed by the LC)). Support of Human Resource (3-persons - Livelihood Coordinator (LC), Livelihood Facilitator (LF) and Accountant / Data entry operator) Salaries – INR 12000+INR10000+INR 10000 respectively; Travel Expenses – 1500 (LC)+1000 (LF)+500 (Accountant). Besides this, IFAD project have also provided Operational Cost of the Livelihood Collectives @ - INR 15000 (Office expenses etc.) per month. This was provided from establishment of LCs onwards. LCs formed from 2015 onwards got benefited from the project till March 2020).

MPACS are well established Farmers' cooperatives which are functioning from their own funds and resources. In terms of financial support for business, these institutions use their own working capital. From the government, the CEO / Secretary of the MPACS get salaries from the department.

The third subset of Farmers' institutions are FPOs formed in 2015 and also in 2019 and 2020. As far as financial support is concerned, NGOs that are promoting FPOs, support in documentation and Planning. From NABARD, INR 50,000 was provided as working capital to the FPO Mukteshwar Kisan Producer Company Ltd. Support for HR was also provided but no share capital support was received by the FPO. This FPO was promoted by an NGO Chirag. Another FPO – Nauling Self-reliant Cooperative was started in 2020 by an NGO Himalayan Gram Vikas Samiti under the NABARD promoted FPO scheme. As per the CEO of the FPO, NABARD support is being received for the Salary of CEO (INR 15000 per month). No share capital or working capital support is received by the FPO. For registration of FPO, the Promotor institution received INR 20,000. The institution has a small share capital base (INR 42,400) as 212 members provided share capital of INR 200 each.

4.7 Payment by FPOs/ LCs/Federations/ MPACs for the purchase from the farmers

The scenario of payments to the farmers are different in different types of institutions. Institutions with good financial base and working capital are able to pay to the farmers on the spot or instantly. In case of the federations /Livelihood Collectives of ILSP-IFAD, there are two situations – when there is a demand for some produce the LCs/ federations pay to the farmers instantly by depositing the amount in the accounts of their Groups. Sometimes federations provide advance to the group leaders of CRP (Community Resource Persons) to get the produce collected in a short span of time. In some other cases, SHGs/PGs use their own common fund to purchase the produce from the members and sell to federations/LCs after adding their profits. In these cases, SHGs take risk to market the produce. In case of ILSP-IFAD, the project provided share capital grant to the Livelihood Collectives and also working capital support, therefore these LCs are not facing any problem in purchasing the produce of the farmers on cash and also paying them immediately. These institutions utilise share capital to do long term investments deposits in the form Fixed deposit etc. These institutions are utilising these Fixed Deposits as Collaterals to get short term loans from the banks. So, all the 7 (41%) LCs/federations of ILSP-IFAD are buying on cash purchase basis and also on credit.

The Federations/Livelihood Collectives also purchase from farmers on credit basis and make payments after selling the produce. These are for generic produce like *Mandua* (finger millets). In case of vegetables and fruits the purchases are made on instant payment basis. The payments are made in a week's time as formal process takes time. Some of the FPOs, 50% (2 out of 4) are able to pay to the farmers instantly. In case of MPACS, the organisations are purchasing for the government under MSP and sell to Regional Food Controller (RFC) mandi. In the present context, Horticulture produce purchase is not being done by these MPACS.

4.8 Using loans to do business

All the MPACs are having Cash Credit Limits fixed from the District Cooperative Banks which they utilise in doing business. Livelihood collectives/ Federations are utilising the working capital received from ILSP-IFAD and also some capital of the Share Capital funds they are having. If the business needs go beyond the capital available, these institutions get loans from the banks easily to use it in business. For purchase of some assets like transport vehicle, machines etc. the Livelihood collectives/ Federations get loan from the banks utilising the Fixed deposits as collateral.

New FPOs are finding it difficult to get loans from the banks as these institutions do not have limited share capital and do not have assets to give as collaterals. These institutions utilise the limited working capital that they have collected from the members. This restricts their volume of business as these institutions are not able to do purchase good volume of produce from the farmers. The only possibilities these institutions have is to pay to the farmers after the sale of the produce.

4.9 Receiving of payment from the buyers by farmers' Institutions

Out of the total institutions, 59 % (10 out of 17) are such institutions that are able to get payments from the buyers instantly however remaining 41% sell only on credit. In the 59%, some institutions sell their produce on credit also in addition to cash sale.

4.10 Different ways of Identifying the market

The organizations of farmers are using different methods to identify and link with the market. They adopt various methods such as Market survey, Telephonic survey, Knowledge of mandi, Information from local traders, resource persons, and members, Advice of board members, Market demand of traders and Information from shareholders and committee members.

4.11 Sources of market information

Organisations are using multiple sources for getting market information. Some of the institutions are using all the three sources (12%) – e-Nam, Farmers and Extension Workers to get information. Out of different sources, 53% (9 out of 17 Institutions) get information from one or the other extension workers of NGOs/ Projects. It is important to note that 59% (10 out of 17 institutions) get information from other farmers. This shows that institutions and creating lateral learning platforms (both physical and virtual) are important for market information.

4.12 Most important factors considered by the Organisations (FPOs/ LCs/federations/ MPACs) while selling the produce –

It has been observed that 82% (14 out of 17 institutions) consider accessibility to the selling point/market as the most important point at the time of selling the produce of the farmers. About 71% (12 out of 17) of the Farmers' Institutions consider unit price as one of the important factors for selling. About 47 % institutions also see the proposal of the buyer for the purchase. Sometimes, buyers want to purchase only 'A' grade produce and do not want to take 'B' or 'C' grade whereas the requirement of farmers is to sell all variety of the produce. In such cases sometimes the farmers' institutions take decision not to sell to those buyers. It is seen that 47% institutions consider all the three factors – Price, accessibility and proposal of the buyers in finalising the deal.

4.13 Marketing by the Farmers' Institutions as intermediary for the farmers

As far as marketing by the Farmers' Institutions is concerned, 41% of the institutions covered (MPACS) are engaged in marketing of the agriculture produce mainly wheat and rice etc. under MSP scheme. These institutions are not engaged in marketing of Horticulture produce at present. If given the responsibility, these institutions can do marketing of horticulture produce in their area.

The other farmers institutions established as Livelihood Collectives under the Uttarakhand self-reliant cooperative Act 2003, do marketing of agriculture and horticulture produce such as potatoes, green pea, honey, *rajma* (Beans) and other vegetables. One of the institutions also selling seeds of green pea.

Marketing initiatives under IFAD ILSP project marketing is done through kisan outlets of the project. These livelihood Collectives have the benefit of having a brand – HILANS. Kisan outlets are available in all the four project districts of JICA – Tehri Garhwal, Uttarkashi, Nainital and Pithoragarh. A common strategy of marketing for different departments / schemes under the Hilans brand is developed and now different department/ schemes i.e., USRLM, ICDS are also selling their produce through Hilans Outlets. In addition to this, livelihood collectives are participating in fairs and exhibitions.

To provide better price of perishable commodity i.e., fresh vegetables, pulses, etc. project promote weekly haat bazaar in different places. Project got place for Haat Bazaar from District Administration. LCs/Federations are buying produce from households and selling in Haat Bazaars. These Livelihood Collectives are having Nano-packaging units. It has made it possible to have similar and standardize packaging as demanded in the market, and value addition and better price realization for the producers. Apart from traditional marketing system, to promoting rural produce at global level, project initiates online marketing through AMAZON, Government e Market (GeM) portal and others online channels. Livelihood Collectives provide produce in packed form for marketing.

Private institutions like FFT Himalayan Fresh Produce Pvt Ltd are purchasing Apple from Livelihood Collectives in Uttarkashi. Himalayan company is also purchasing Off-Season vegetables from Uttarkashi. Various private sector player including Patanjali are purchasing from Livelihood Collectives of ILSP-IFAD. Under the ILSP, a Kishan mela is being organising at block level. The aim behind organising the mela is to encourage farmers towards the Agro-commercial sector, agro based industries, and Export oriented market.

The third type of Farmers' institutions are FPO promoted by different NGOs. These FPOs are marketing fruits like apple, Apricot, Plum, Spices like Coriander, Chilli and *rajma* (Beans) etc. (Muketshwar Kisan Producer Company Ltd). The organisation makes payments to the farmers weekly. It is informed by a Director of the Management Committee that the organisation has linked with a community of Uttarakhand in UP – Uttarakhand Maha Parishad and through that they market their produce in an exhibition organised by the association. The products are sold as “MKPCL” brand.

Another FPO – Piyora Homes Swayatt Sahkarita is promoted by an NGO - Aarohi. Aarohi has been supporting the FPO for processing fruits and vegetable and selling their products. Aarohi is organising a Grameen Himalayan Haat ('GHH') as an annual four-to-five-day long festival at its office at village Satoli. The event attracts local entrepreneurs, artisans, professional and local musicians and performers in large numbers from Uttarakhand as well as from other parts of the country.

4.14 Benefit Sharing mechanism among the members

Out of the 7 MPACs covered under the study, 57 % of MPACS are paying dividend out of the surplus generated by the MPACS. Remaining 43% are not having sufficient surplus to distribute to their members.

Amongst the 7 Livelihood Collectives / federations of ILSP-IFAD covered under the project, 6 (86%) cooperatives are distributing the dividend to the members. One federation/LC has yet to reach the stage to distribute profits.

Remaining 4 new FPOs have made provisions for the distribution of the profits in the form of dividends but not yet started giving dividends to the members. Out of 17 FPOs / LCs/MPACS covered, 10 are distributing surplus in the form of dividends to their members as per their bye-laws.

4.15 Challenges in marketing the produce

As far as challenges in marketing of produce is concerned, 65% organisations consider lack of means of transportation as the key problem and challenge in marketing of the produce. About 53% feel that lack of

storage facilities is the main challenge in marketing. Lack of capital is considered by 41% organisations as major problem in marketing of the produce. This is mainly the case of FPOs having deficiency of working capital for the business. 35% institutions consider not getting good Prices for the produce as a key challenge in marketing. No organisation mentioned that lack of price information is a key problem.

Some of the institutions (12%) consider lack of knowledge about quality as one of the key challenges in marketing of the produce.

In addition to the above-mentioned predefined challenges, 24% Institutions also informed that high labour costs, lack of production record etc. are some of the other challenges in marketing. At any point of time, there is no method through which one can know what is the quantity available for marketing from a village or cluster.

4.16 Brand

Strengths and weaknesses of the products that Organisations are dealing with

Strengths	Weaknesses
Quality, Organic, Product of hills	Lack of information, Yield is less
Fair price	Problem of grading and storage
'Hilans brand' is established by IFAD-ILSP project and taken up by USRLM also	Return of loan is challenging
High quality packing, grading and labelling possible	Lack of transportation facility
Local products are available in large quantities in the cooperative sector	Lack of market in cooperative sector

4.17 Factors of comparison of the Farmers' produce with the produce of other states

Particulars	Responses
Appearance	Organic and clean
Taste	Tasty and healthy
Fragrance	Good
Color	Natural
Freshness	Fresh from the farms
Price	Fair price
Packing	Not very good. Improvement in packaging needed. Hilans packing is good and utilized by one FPO.
Promotion	Promotion of cultivators
Timing of marketing	Different from other states

4.18 Member's awareness about Uttarakhand Brand and Brands promotion

Out of the total, 29.4% are aware about the brands in the Uttarakhand and 70.6% are not aware about the leading brands of Uttarakhand.

All the 7 out of 17 institutions (41%) promoted under ILSP-IFAD are promoting a common 'Hilans brand'. MPACS (41%) do not have any brand of its own so these institutions are not promoting any brand. FPOs (18%) promoted by NGOs promote their own brand or have yet to develop their brand. NGOs Chirag and Aarohi in Nainital, promote their own brands. Mukteshwar Kisan Producer Company Ltd promotes its own brand 'MKPCL' whereas Aarohi promoted FPO promotes 'Piyoda homes brand'. Remaining two FPOs do not have any specific brand.

4.19 Ways to improve Uttarakhand brand

- 35 % FPOs stated that through promotion of Hilans brand, the UK Brand will improve
- 12 % FPO felt that there should only be one common brand in Uttarakhand
- 18 % FPO cited improving crop quality, good grading and packing as important factors to improve the brand

4.20 New Agriculture Acts of 2020 (Farm Bills)

About 18 % are very well awareness about of Farm Bills 2020, whereas 24 % are somewhat aware About 58 % are not at all aware about the farm bills

4.21 Types of policies and interventions needed to promote vegetables and fruits supply chain

1. Timely availability of high-quality seeds; trainings must be provided, information on production and marketing
2. New techniques, High quality seeds, exposure for farmers, availability of plants, setting up models
3. Cold storage for fruits and vegetables
4. Local fruits and vegetables must be promoted and ready in adequate quantities
5. Proper guidance for grading and packing
6. Local fruits and vegetables supply chain, storage, preservation needed
7. Funds for transportation needed
8. Farmer needs HYV seeds and latest technology tools
9. Irrigation facilities are needed
10. Solution for making barren land cultivable
11. Efforts to increase fertility of soil

Attachment 5.2.2 Gender and Nutrition Situational Analysis

1. Background

To supplement the findings from the farm household survey as given in Attachment 4.1, group interviews with women were planned initially. However, due to the persistent heavy rain in the state, the road transportation was disturbed and thus, telephonic interviews with key woman informants were conducted by the national staff of the survey team members who have been guided by the survey team member. As listed below, 30 interviews were conducted.

Table 1. List of Villages Contacted for the Telephonic Interviews

N o	District	Block	GP	Village	Cluster	Crop in Cluster
1	Nainital	Bhimtal	Alchouna	Alchouna	Alchouna	Tomato
2	Nainital	Bhimtal	Chanfi	Chanfi	Alchouna	Tomato
3	Nainital	Hadlwani	Kunwarpur	Kunwarpur	Kunwarpur	Garlic
4	Nainital	Haldwani	Deval Malla	Deval Malla	Kunwarpur	Garlic
5	Nainital	Ramnagar	Chilkiya	Chilkiya	Ramnagar	Litchi
6	Nainital	Ramnagar	Jogipura	Jogipura	Ramnagar	Litchi
7	Nainital	Ramgarh	Jhutiya	Jhutiya	Ramgarh	Peach
8	Nainital	Ramgarh	Naithana	Naithana	Ramgarh	Peach
9	Pithoragarh	Berinag	Baitholi	Baitholi	Koteswar	Citrus sweet orange
10	Pithoragarh	Berinag	Baitholi	Kanda Kiroli	Koteswar	Turmeric
11	Pithoragarh	Berinag	Jakh	Jakh	Koteswar	Turmeric
12	Pithoragarh	Berinag	Udhyari	Udhyari	Udhyari	Citrus Sweet Orange
13	Pithoragarh	Bin	Seri kanda	Seri Kanda	Bhilot to Baman	Apple
14	Pithoragarh	Bin	Toli	Bhilot	Bhilot to Baman	Apple
15	Pithoragarh	Gangolihaat	Ganai Gangoli	Ganai Gangoli	Kuntola	Garlic
16	Pithoragarh	Gangolihaat	Pokhri	Pokhri	Kuntola	Garlic
17	Tehri Garhwal	Chamba	Chopriyal Gaon	Chopriyal Gaon	Chopriar Gaon	Plum
18	Tehri Garhwal	Chamba	Dungli	Dungli	Chopriar Gaon	Plum
19	Tehri Garhwal	Fakot	Rampur	Rampur	Khadi	Ginger
20	Tehri Garhwal	Jaunpur	Haveli	Haveli	Batwaldhar	Potato/ Pea
21	Tehri Garhwal	Jaunpur	Majra	Semwal Gaon	Batwaldhar	Potato/ Pea
22	Tehri Garhwal	Narendra Nagar	Moan	Moan	Khadi	Ginger
23	Tehri Garhwal	Thauldar	Baral Gaon	Baral Gaon	Jwarna	Pea/ Potato
24	Tehri Garhwal	Thauldar	Thauldar	Kyolangi	Jwarna	Pea/ Potato
25	Uttarkashi	Bhatwari	Gorsali	Dwari	Gorsali	Potato
26	Uttarkashi	Dunda	Kamadh	Kamadh	Dunda	Kiwi
27	Uttarkashi	Dunda	Kumarkot	Kumarkot	Dunda	Kiwi
28	Uttarkashi	Mori	Aarakot	Aarakot	Aarakot	Apple
29	Uttarkashi	Naugaon	Gangtadi	Gangtadi	Gangtadi	Walnut
30	Uttarkashi	Naugaon	Nagadgaon	Nagadgaon	Gangtadi	Walnut

Source: JICA Survey Team

I. Gender

1. Membership of Informants

The membership of the respondents to SHGs and FPOs were enquired. 16 out of 30 respondents were not part of SHGs. As for FPOs, the number of respondents who is a part of FPO was even less. It was only 5 persons out of 30.

District	SHG membership			FPO membership		
	No	Yes	Total	No	Yes	Total
Nainital	2	4	6	6		6
Nainital	1	1	2	2		2
Pithoragarh	2	6	8	5	3	8
Tehri Garhwal	5	3	8	6	2	8
Uttarkashi	4	2	6	6		6
Total	14	16	30	25	5	30

Source: JICA Survey Team

2. Challenges Faced by Women in farming and agriculture

The responses were largely concerning the technical dimensions for agriculture including water shortage, lack of quality manure, damage caused by wild animals and etc. Challenges specific to women was heavy workload and less benefits from the horticulture activities. For these women specific issues, respondents did not have any solutions.

Challenges	Solution
Very less womens are interested in agriculture/ Horticulture activities as it require lots of efforts and less benefits are obtained	None
Women have to travel very far for fodder and cow	None
Womens have to manage a lot of work in very less time	Will have to manage
Women have to manage lots of work everyday	Will have to manage
Pregnant womens also have to work a lot	None
Sometimes womens are attacked by wild animals	None

Source: JICA Survey Team

3. Gender Division of Labor

Most of the tasks including taking loan and attending extension programs/ trainings were shared between men and women. Weeding, washing of produces, and sorting are the works mostly done by women. Negotiation of price is also mostly done by men.

1) Taking Loan from bank for agriculture

District	Jointly	Men	Women	Total
Nainital	7	1		8
Pithoragarh	8			8
Tehri Garhwal	3	2	3	8
Uttarkashi	3	2	1	6
Total	21	5	4	30

2) Procurement of farm inputs

District	Jointly	Men	Women	Total
Nainital	3	5		8
Pithoragarh	4	3	1	8
Tehri Garhwal	1	2	5	8
Uttarkashi	1	1	4	6
Total	9	11	10	30

3) Procuring Manure

District	Jointly	Men	Women	Total
Nainital	1	6	1	8
Pithoragarh	3	3	1	7

Tehri Garhwal			8	8
Uttarkashi		2	4	6
Total	4	11	14	29

4) Land preparation

District	Jointly	Men	Women	Total
Nainital	1	6	1	8
Pithoragarh	2	5	1	8
Tehri Garhwal		5	3	8
Uttarkashi		3	3	6
Total	3	19	8	30

5) Land preparation

District	Jointly	Men	Women	Total
Nainital	5	1	2	8
Pithoragarh	2	5	1	8
Tehri Garhwal	4		4	8
Uttarkashi		2	4	6
Total	11	8	11	30

6) Transplantation

District	Jointly	Men	Women	Total
Nainital	5	2	1	8
Pithoragarh	6		2	8
Tehri Garhwal	3		5	8
Uttarkashi	1	1	4	6
Total	15	3	12	30

7) Weeding

District	Jointly	Men	Women	Total
Nainital	3		5	8
Pithoragarh	1		7	8
Tehri Garhwal	1		7	8
Uttarkashi		1	5	6
Total	5	1	24	30

8) Fertilizer application

District	Jointly	Men	Women	Total
Nainital	4	4		8
Pithoragarh	3	4		7
Tehri Garhwal	2	2	4	8
Uttarkashi	1	2	3	6
Total	10	12	7	29

9) Manure application

District	Jointly	Men	Women	Total
Nainital	3	4	1	8
Pithoragarh	4	3	1	8
Tehri Garhwal	2		6	8
Uttarkashi		1	5	6
Total	9	8	13	30

10) Pesticides application

District	Jointly	Men	Women	Total
Nainital	3	4	1	8
Pithoragarh	4	3	1	8
Tehri Garhwal	2		6	8
Uttarkashi		1	5	6
Total	9	8	13	30

11) Harvesting

District	Jointly	Men	Women	Total
Nainital	6		2	8
Pithoragarh	7		1	8
Tehri Garhwal	1		7	8
Uttarkashi		1	5	6
Total	14	1	15	30

12) Transporting produce

District	Jointly	Men	Women	Total
Nainital	5	2	1	8
Pithoragarh	6	2		8
Tehri Garhwal	5		3	8
Uttarkashi	3	3		6
Total	19	7	4	30

13) Washing

District	Jointly	Men	Women	Total
Nainital	5	1	2	8
Pithoragarh	5		3	8
Tehri Garhwal	1		7	8
Uttarkashi		1	5	6
Total	11	2	17	30

14) Drying

District	Jointly	Men	Women	Total
Nainital	5	1	2	8
Pithoragarh	5		3	8
Tehri Garhwal	1		7	8
Uttarkashi		1	5	6
Total	11	2	17	30

15) Sorting

District	Jointly	Men	Women	Total
Nainital	5	1	2	8
Pithoragarh	5		3	8
Tehri Garhwal	1		7	8
Uttarkashi		1	5	6
Total	11	2	17	30

16) Grading

District	Jointly	Men	Women	Total
Nainital	8			8
Pithoragarh	8			8
Tehri Garhwal	1		7	8
Uttarkashi		1	5	6
Total	17	1	12	30

17) Packing

District	Jointly	Men	Women	Total
Nainital	6	2		8
Pithoragarh	5	3		8
Tehri Garhwal	1		7	8
Uttarkashi	1	1	4	6
Total	13	6	11	30

18) Taking to the market

District	Jointly	Men	Women	Total
Nainital	6	2		8
Pithoragarh	5	3		8
Tehri Garhwal	1		7	8
Uttarkashi	1	1	4	6
Total	13	6	11	30

19) Negotiating price

District	Jointly	Men	Women	Total
Nainital	1	7		8
Pithoragarh	3	5		8
Tehri Garhwal	2	2	4	8
Uttarkashi	2	4		6
Total	8	18	4	30

20) Keep money

District	Jointly	Men	Women	Total
Nainital	6	2		8
Pithoragarh	8			8
Tehri Garhwal	5		3	8

Uttarkashi	3	1	2	6
Total	22	3	5	30

21) Irrigation Water Management

District	Jointly	Men	Women	Total
Nainital	4	4		8
Pithoragarh	6	2		8
Tehri Garhwal	2	2	4	8
Uttarkashi	2	4		6
Total	14	12	4	30

22) Maintenance of Canal for Irrigation

District	Jointly	Men	Women	Total
Nainital	3	4		8
Pithoragarh	2	1		8
Tehri Garhwal	2	2	4	8
Uttarkashi	2	4		6
Total	14	12	4	30

23) Maintenance of Irrigation facilities (i.e. drip irrigation, sprinkler, pump & pump shed, electricity etc.)

District	Jointly	Men	Women	Total
Nainital	3	5		8
Pithoragarh	3	4	1	8
Tehri Garhwal	2	2	4	8
Uttarkashi	2	4		6
Total	14	12	4	30

24) Market information

District	Jointly	Men	Women	Total
Nainital	3	5		8
Pithoragarh	3	5		8
Tehri Garhwal	3	2	3	8
Uttarkashi	3	3		6
Total	14	12	4	30

25) Attending extension program/ Training

District	Jointly	Men	Women	Total
Nainital	3	5		8
Pithoragarh	3	5		8
Tehri Garhwal	3	2	3	8
Uttarkashi	3	3		6
Total	14	12	4	30

Source: JICA Survey Team

4. Source of information

(1) Production (i.e. seeds, agrochemicals, irrigation, etc.)

Husband, relatives including ancestor's knowledge, HMT and neighbors are the sources of information concerning production.

District	Husband	Neighbors	Relatives	KVK	ATMA	HMT	Shop keepers	Commission Agent	Watershed Dept/ Granya/ Dept/ Granya/ Another projects/NGO/ KVK	Own Experience
Nainital	8	4	3	1	2	6	1	3	1	
Pithoragarh	8	4	2		2	8	3		3	
Tehri Garhwal	1	2	5			2			3	
Uttarkashi	2	1	3							1
Total	19	11	13	1	4	16	4	3	7	1

Source: JICA Survey Team

(2) Post-Harvest Management (i.e. grading, sorting, packaging, etc.)

Main source of information for post-harvest management included husband, neighbors, and relatives.

District	Husband	Neighbors	Relatives	KVK	ATMA	HMT	Commission Agent	Traders	Watershed Gramya/ Dept/ Gramya/ Another projects/NGO/ Village meeting	Own Experience
Nainital	8	6	1			2	4	1	1	
Pithoragarh	8	6	2						1	
Tehri Garhwal	1	2	5			1			2	
Uttarkashi	2		5							1
Total	19	14	13			3	4	1	4	1

Source: JICA Survey Team

(3) Marketing (i.e. market prices, to whom to sell, to where to sell, etc.)

Husband and neighbors are the main source of market information. In Nainital commission agent was another frequently referred source of information. In Tehri Garhwal, the most frequently identified source of information was Mandi Samiti (Market Committee).

District	Husband	Neighbors	Relatives	Shop keepers/ Traders	Commission Agent	Mandi Samiti
Nainital	7	3	4		6	
Pithoragarh	8	5	1	2	1	
Tehri Garhwal	2	2				6
Uttarkashi	1	1		2		2
Total	18	11	5	4	7	8

Source: JICA Survey Team

5. Access to Training Programs

(1) Attendance to Training

About 63% of respondents have attended training program on agriculture.

District	No	Yes
Nainital	5	3
Pithoragarh	4	4
Tehri Garhwal	5	3
Uttarkashi	5	1
Total	19	11

Source: JICA Survey Team

(2) Topics of Training that they attended

Good agriculture practices and mushroom cultivations were most frequently mentioned training topics followed by pest management.

Topics	Counts
Organic Farming	1
Good agricultural practices	3
Bee keeping	1
Pest Management	2
Manure	1
Homemade Treatment of Pest	1
Ginger Cultivation	1
Mushroom Cultivation	3
Cabbage Cultivation	1
Marketing of products	1
Storage of crops like potato for long term use	1

Source: JICA Survey Team

(3) Training Topics Interested

Respondents indicated interests in various topics in production, post harvesting and marketing. Two topics scored rather higher among the topics: Diseases and pest management and application of agrochemicals.

Topics	Counts
Disease and pest management	11
Post-harvest management	2
Kitchen garden	1
Marketing	3
Vermi compost preparation	1
Nursery Management	2
Fruits Processing	3
Farm Machinery Operation and Functioning	2
Pickle making	3
Mushroom farming	2
Good quality production	3
Good agricultural practices	3
Spice processing	2
Off season vegetable production	2
Cash crop production/ New variety production	2
Apple cultivation	2
Quality production of turmeric, ginger, and other spices	2
Seed plantation	3
Value addition	1
Crop variety improvement	1
Vegetable production	3
Animal Conflict (Monkey and wild boars) Management	3
Application of agrochemicals and manure	6
Seeding method (including quality and quantity to be used, duration of seed germination and etc.)	2
Water harvesting and management including water saving production method, drip irrigation	3

Source: JICA Survey Team

(4) Difficulties in attending training

Women in the surveyed villages bear multiple responsibilities of domestic chore and agriculture

work including care for livestock. Thus, they do not have spare time to attend training programs and especially for the ones requiring longer time away from home. In some part of the survey areas, the road connectivity is not good and thus, the women find it difficult to reach the training venue. Coupled with the work load and shortage of time, women find difficult to attend training at the venue far away from the village.

Difficulties	Counts
Unavailability of time for long trainings	10
Family responsibilities and farm field work	15
Family permission to attend the training	3
Training venue is far away from the village	9
Transportation Problem	3
Lack of interest	2
Younger women are not interested in agriculture/ horticulture related work	1
Poor health	2
Training coincides with the harvesting season and other busy season	3
Shortage of time due to lots of responsibilities and work	

Source: JICA Survey Team

6. Migration

Migration of male family members is practiced across the surveyed areas. 22 respondents out of 30 indicated that migration is happening to some families in their villages.

District	No	Yes
Nainital	4	4
Pithoragarh	3	5
Tehri Garhwal	1	7
Uttarkashi		6
Total	8	22

Source: JICA Survey Team

Challenges faced by women whose male family members migrated included below. Migration of male family members increases the workload of women as they need to take care of both home and agriculture. Some of the tasks like fetching firewood and fodder for livestock are still time consuming. Where the agriculture plot is far away from home, women find it more difficult to manage household.

- Increased workload of women as they have to take care of both home and in the agriculture field.
- Lack of work force during land preparation, seeding and harvesting (sometimes they need to depend on hired labor.)
- Difficulties in managing the agriculture work to be done by the farm machineries
- Farm plot is far away from home, which poses difficulties for women to look after home
- Sometime women have to manage the agriculture by taking loan.
- Women cannot work late in the evening.

7. Decision Making

Gender participation in decision making concerning cluster crop, which is most likely the commercial crop, and crops for household consumption was asked. No significant differences in tendency in gender participation in decision making. Varieties to grow, whether to take loan for agriculture purposes and how to spend the money earned from horticulture produce are mostly decided jointly by men and women in the household. Decision on expenditure on agrochemicals is slightly dominated by male member of the households. The counts of responses are shown in the table below.

1) What varieties to grow

District	Cluster Crop			Crops for Household Consumption		
	Jointly	Men	Women	Jointly	Men	Women
Nainital	2	6		3	5	
Pithoragarh	6	2		7	1	
Tehri Garhwal	6		1	6		2
Uttarkashi	3	1	1	3	1	2
Total	17	9	2	19	7	4

2) What agrochemical to use and how much and when to use

District	Cluster Crop			Crops for Household Consumption		
	Jointly	Men	Women	Jointly	Men	Women
Nainital	1	7		1	7	
Pithoragarh	2	6		2	6	
Tehri Garhwal	2	2	3	2	1	5
Uttarkashi	1	1	3	1	1	4
Total	6	16	6	6	15	9

3) Expenditure on agrochemicals and planting materials

District	Cluster Crop			Crops for Household Consumption		
	Jointly	Men	Women	Jointly	Men	Women
Nainital	2	6		3	5	
Pithoragarh		8			8	
Tehri Garhwal	4	1	2	4	1	3
Uttarkashi	2	1	2	2	1	3
Total	8	16	4	9	15	6

4) Whether to use farm machineries

District	Cluster Crop			Crops for Household Consumption		
	Jointly	Men	Women	Jointly	Men	Women
Nainital	2	6		2	6	
Pithoragarh	2	5		2	5	
Tehri Garhwal	3	1	3	3	2	3
Uttarkashi	2	1	2	3	1	2
Total	9	13	5	10	14	5

5) Decision on irrigation usage

District	Cluster Crop			Crops for Household Consumption		
	Jointly	Men	Women	Jointly	Men	Women
Nainital	2	6		3	5	
Pithoragarh	6	2		6	2	
Tehri Garhwal	2	2	3	2	2	4
Uttarkashi	2	1	2	2	1	3
Total	12	11	5	13	10	7

6) Selling price of the crop

District	Cluster Crop			Crops for Household Consumption		
	Jointly	Men	Women	Jointly	Men	Women
Nainital	2	6		4	4	
Pithoragarh	3	5		3	5	
Tehri Garhwal	5		2	5		3
Uttarkashi	2	2	1	2	2	2
Total	12	13	3	14	11	5

7) Whether to take loan for agriculture purposes

District	Cluster Crop			Crops for Household Consumption		
	Jointly	Men	Women	Jointly	Men	Women
Nainital	7		1	6	1	1
Pithoragarh	8			8		
Tehri Garhwal	4	2	1	5	2	1
Uttarkashi	3		2	3		3
Total	22	2	4	22	3	5

8) How to spend the money earned from the horticulture produce

District	Cluster Crop			Crops for Household Consumption		
	Jointly	Men	Women	Jointly	Men	Women
Nainital	8			7	1	
Pithoragarh	7	1		8		
Tehri Garhwal	4	1	2	4	1	3
Uttarkashi	2		3	2		4
Total	21	2	5	21	2	7

Source: JICA Survey Team

The money earned from the horticulture produce is mostly spent on 1) buying inputs for next season, 2) paying dues and buy food; and 3) paying school fees.

8. Land Ownership

Across the survey area, women do not own land except widows. The majority indicated that women work on the family land.

9. Membership to Groups

There was a mixture of responses. In majority of places, SHGs were organized. But FPO/ FPCs are still not organized in many places or in the process of getting organized. Some women not joining SHGs are as below.

- Do not see advantage (Pithoragarh)
- Lack of interest (Tehri Garhwal)
- Shortage of time (Tehri Garhwal, Uttarkashi)
- SHGs not functioning (Pithoragarh, Uttarkashi)
- Male family members did not agree. (Tehri Garhwal)

10. Access to Financial Services

All the respondents indicated that women do have bank accounts in their names. But many did not know about Kishan Credit Card or indicated that women do not have KCC. Only in Thauldar

block in Tehri Garhwal, the respondent indicated that women do have KCC.

Women commonly open a bank account at a government bank. In Nainital, Pithoragarh and a part of Tehri Garhwal, women use the bank account for savings and loan for agriculture. On the other hand some women do not use the banking services. The reasons shared by the respondents are given below.

- Lack of Information and do not know how to use the services.
- Lack of time and awareness. Women don't want to put many efforts and are less educated.
- Unable to return the loan due to poor production rates of the cultivated crop. So there is no point in taking loan.
- Women do not want to take any risk.
- Procedures are difficult.
- There is no services given to women.
- Women do not take loan because they cannot return it.

11. Government Schemes for Women

The respondents had given some government schemes, but they are not specifically targeting women. Only Aajeevika (State Rural Livelihood Mission), girl child scheme (1st and 2nd born girl child) and Anganwadi were women centric government schemes named by the respondents. This may be a reflection of lack of knowledge/ awareness about women's scheme, which derive from lack of time and interest.

12. Issues to be Taken into Consideration while formulating UKIHDP

From the above, following needs to be taken into consideration.

1. Women do not have much time to attend a training for long hours. Thus, the training should be organized within their easy reach. Means of transportation can also be arranged for them to have better access to the venue.
2. Training program and schedule should also be shared with male family members so that the women can easily obtain permission from the family member.
3. As they play an important role in production, post-harvest, and marketing, they should be given adequate opportunities to attend training programs. Especially the training opportunities for the topics of their interest should be adequately provided for women.
4. Energy saving devices or light weight farm machineries can also be considered to be promoted under the project so that a facilitating environment for women to take part in the training can be created.

II. Nutrition at Household Level

1. Common options for meals and tea

Meals	Items
Breakfast	<ol style="list-style-type: none"> 1. Flat bread (Roti/ Chapati) made of wheat flour + Vegetable dish 2. Stuffed bread + Curd 3. Porridge + Milk 4. Finger millet bread + Vegetable dish (Tehri Garhwal) 5. Fried flat bread (Puri) + Vegetable dish 6. Suji Halwa (Semolina cooked with sugar) 7. Dalia (Broken Wheat) cooked with vegetables
Tea	<ol style="list-style-type: none"> 1. Milk Tea or black tea 2. Milk Tea with Biscuits
Lunch	<ol style="list-style-type: none"> 1. Rice with Dal (Pulses curry- Tor dal, Urad dal, Gahat Dal, Lobhiya Dal, Chana Dal, Arhar Dal, Rajma, Musoor, Hore gram,) 2. Rice with Khadi (Yogurt curry) 3. Occasionally, Roti + vegetable dish are served.
Dinner	<ol style="list-style-type: none"> 1. Flat bread (Roti)+ Vegetable dish (All Areas) 2. Rice or Flat bread (Roti) + Non-Veg Item (Nainital & Pithoragarh) 3. Roti+ Rice + Pulses Curry 4. Roti + Paneer (cheese) dish

Source: JICA Survey Team

2. Frequency of meals

Across all areas, meals are taken 3 times a day. In Nainital and Pithoragarh, tea is taken 4-6 times a day.

3. Food Processing

Fruits and vegetables are often pickled for preservation. There was no fortified food referred to by the respondents.

Food Item	Processed Food
Apple	Jam, Chutney
Malta/ Orange	Juice
Mango	Pickle
Colocasia (Uttarkashi)	Pickle
Chili	Pickle
Rhododendron (Tehri Garhwal, Uttarkashi)	Juice
Lemon	Pickle
Amla	Pickle
Cauliflower	Pickle
Plum	Pickle
Carrot	Pickle
Jack fruit (Pithoragarh)	Pickle
Potato (Nainital)	Chips
Garlic (Pithoragarh)	Pickle
Litchi (Nainital)	Juice
Tomato (Nainital)	Ketchup

Source: JICA Survey Team

4. Items Commonly Consumed in Diet

In Nainital and Pithoragarh, more variations are seen in the food items consumed.

Food Groups	Items	Nainital	Pithoragarh	Tehri Garhwal	Uttarkashi	Total
Cereals	Wheat	8	8	7	5	28
	Rice	7	6	8	4	25
	Maize	5	6	6	4	21
	Oats	0	0	0	0	0
	Finger Millet	0	3	7	2	12
	Barnyard millet	0	0	0	0	0
Pulses	Moong	8	8	4	0	20
	Masoor	7	8	5	0	20
	Urad	7	8	3	2	20
	Chana	5	8	6	2	21
	Arhar	6	8	7	3	24
	Peas	6	5	0	0	11
	Rajma	6	8	8	4	26
	Chawla	0	0	0	0	0
	French Beans	3	6	0	0	9
	Sem Phali	2	0	1	1	4
	Horse gram	2	4	0	0	6
Green Leafy Vegetables	Soyabean	5	5	0	0	10
	Spinach	8	8	0	4	20
	Methi	0	0	6	2	8
	Sarson	3	7	3	0	13
	Chaulai	7	7	6	2	22
	Cabbage	8	8	6	2	24
	Bathua	1	2	0	0	3
	Chana leaves	0	0	0	0	0
	Colocasia leaves	0	0	2	2	4
Fruit vegetables	Radish leave	4	5	0	0	9
	Tomato	7	7	8	5	27
	Brinjal	6	8	8	5	27
	Capsicum	5	8	8	4	25
	Chilies	7	8	6	3	24
Cucurbitaceous vegetables	Okra	7	8	7	5	27
	Cucumber	8	8	8	8	32
	Ridge Gourd	8	8	4	2	22
	Ash Gourd	3	0	0	0	3
	Snake Gourd	6	1	0	0	7
	Bottle Gourd	8	8	0	0	16
	Bitter Gourd	8	7	2	2	19
Bulb	Sweet pumpkin	0	0	1	0	1
	Onion	8	8	7	5	28
Roots	Garlic	8	8	8	4	28
	Carrot	3	5	0	0	8
	Radish	9	6	0	0	15
	Turnip	3	0	0	1	4
	Beet Root	1	0	0	0	1
Tubers	Ginger	8	7	8	2	25
	Potato	8	7	8	0	23
	Sweet Potato	0	1	4	0	5
	Tapioca	0	0	0	0	0
	Colocasia	7	6	0	0	13
Other Veg	Yam	4	6	0	0	10
	Cauliflower	8	7	8	4	27
Fruits	Broccoli	0	0	6	2	8
	Apple	7	7	8	4	26
	Banana	5	6	8	2	21
	Peaches	4	6	4	0	14
	Pear	0	0	4	0	4
	Plums	0	0	2	1	3

Food Groups	Items	Nainital	Pithoragarh	Tehri Garhwal	Uttarkashi	Total
	Mango	8	7	4	2	21
	Guava	5	2	3	1	11
	Oranges	1	5	0	0	6
	Amla	4	3	0	0	7
	Grapes	1	1	0	2	4
	Custard apple	0	0	0	0	0
	Litchi	7	5	0	0	12
	Papaya	4	3	2	2	11
	Pomegranate	5	7	0	1	13
Nuts and Oil Seeds	Peanut	6	7	8	4	25
	Sesame seeds	2	6	0	0	8
	Almond	2	0	5	3	10
	Walnut	5	4	9	4	22
Fats	Ghee	7	7	8	5	27
	Butter	5	1	8	4	18
	Vegetable oil	8	7	8	4	27
Milk and Milk Products	Milk	6	7	8	5	26
	Curd	7	7	8	4	26
	Buttermilk	8	6	8	4	26
	Paneer	8	5	7	3	23
Non-Veg	Egg	8	7	7	4	26
	Goat Meat	7	7	5	2	21
	Chicken	8	7	5	3	23
	Fish	8	6	5	2	21
Other foods	Sweets	6	5	8	0	19
	Fried snacks	8	7	0	0	15
	Baked foods	9	7	0	0	16
	Ice cream	0	0	1	0	1
	Aerated drinks	2	2	2	0	6
	Snacks	0	0	3	0	3
	Chowmin	3	5	8	4	20
	Maggie	0	0	8	5	13
	Momo	3	1	0	0	4

Source: JICA Survey Team

5. Difference in Diet between Men and Women

There is no difference reported in diet between men and women. A few indicated that they are lacking nutrition. Reasons for lack of nutrition included: 1) lack of food as all crops were damaged by wild animals, and 2) poor eating habit.

6. Information Source on Nutrition

About half of respondents indicated that they attended nutrition program. Common source of information on nutrition included: 1) Anganwadi, 2) TV, 3) elders and 4) their parents.

7. Important Points that they take into consideration for balanced diet

Commonly women prepare food by their family preferences and with the food locally available in Nainital and Pithoragarh. In Uttarkashi, some avoided spicy and salty food. In Tehri Garhwal, some women tried to include vitamin rich food items.

8. Availability of Mid-Day Meal in schools and hot snacks at Anganwadi

28 out of 30 respondents indicated that the mid-day meal at schools and hot snacks at

anganwadi are available. At anganwadi children are given roasted chana, kichdi (softly cooked rice with pulses and vegetables, porridge, dry fruits, nuts and etc.).

9. Issues to be taken into consideration while formulating the project

1. As women cook food with the items that are locally available, kitchen garden can be promoted to increase the variations in vegetables. Especially, Uttarakashi and Tehri Garhwal, it will help in diversifying the vegetable items consumed at home.
2. Fortification of food was not reported in this survey. As the recipe for iron fortified traditional sweets have been developed by KVK Tehri Garhwal, it can be promoted in the project areas.
3. Although many women attended nutrition program, it would help to organize awareness campaign and recipes for nutritious food. One way is to organize competition among village women to develop recipes for nutritious food.

Attachment 5.2.3 Findings from the Nutrition Survey (Schools and Anganwadis)

1. Background to the Survey

The visits to Anganwadi and schools to gather information on the nutrition related interventions and their facilities. The sites were randomly selected in the survey clusters in 4 districts of Nainital, Pithoragarh in Kumaon Region and Tehri Garhwal and Uttarkashi in Garhwal Region. Enumerators were sent to the sites to meet the Anganwadi workers and school teachers in the selected villages. 16 Anganwadi Centers and 16 Schools were visited for the survey. A check list of points of enquiries was prepared to guide the enumerators. The enumerators were guided by the national staff of the survey team who were trained by the Survey Team Member. The data entry was also done by the national staff. Based on the data, the survey team compiled the data and identified relevant points to be considered during the survey. The list of Anganwadi centers and schools visited is as below.

Table 1. List of Anganwadi and Schools Visited

Type	No	District	Block	GP	Village	Name of the Center/ School
Anganwadi Center	1	Nainital	Ramnagar	Jogipura	Jogipura	Anganwadi Center, Jogipura
	2	Nainital	Haldwani	Devalmalla	Devalmalla	Anganwadi Center, Devalmalla
	3	Nainital	Ramgarh	Jhutiya	Jhutiya	Anganwadi Center, Jhutiya
	4	Nainital	Bhimtal	Chanfi	Chanfi	Anganwadi Center, Chanfi
	5	Pithoragarh	Berinag	Udhyari	Udhyari	Anganwadi Center, Udhyari
	6	Pithoragarh	Berinag	Jakh	Jakh	Anganwadi Center, Jakh
	7	Pithoragarh	Gangolihaat	Chouki	Chouki	Anganwadi Center, Chouki
	8	Pithoragarh	Bin	Seri Kanda	Seri Kanda	Anganwadi Center, Seri Kanda
	9	Tehri Garhwal	Chamba	Dungli	Dungli	Anganwadi Center, Haveli
	10	Tehri Garhwal	Jaunpur	Haveli	Haveli	Anganwadi Center, Dungli
	11	Tehri Garhwal	Chamba	Moun	Moun	Anganwadi Center, Moun
	12	Tehri Garhwal	Thauldhar	Kyolangi	Kyolangi	Anganwadi Center, Kyolangi
	13	Uttarkashi	Bhatwari	Dwari	Dwari	Anganwadi Centre, Dwari
	14	Uttarkashi	Mori	Arakot	Arakot	Anganwadi Center, Arakot
	15	Uttarkashi	Naugaon	Nagadgaon	Nagdagaon	Anganwadi Center, Nagadgaon
	16	Uttarkashi	Dunda	Dunda	Kamadh	Anganwadi Center, Kamadh
Schools	1	Nainital	Ramnagar	Chilkiya	Chilkiya	State Junior High School, Chilkiya
	2	Nainital	Haldwani	Haldwani		State Girls Intermediate college, Haldwani
	3	Nainital	Ramgarh	Jhutiya	Jhutiya	State Primary School, Jhutiya
	4	Nainital	Bhimtal	Chanfi	Chanfi	State Primary School, Chanfi

5	Pithoragarh	Berinag	Udhyari	Udhyari	State Primary School, Udhyari
6	Pithoragarh	Berinag	Jakh	Jakh	State Primary School, Jakh
7	Pithoragarh	Gangolihaat	Chouki	Couki	State Primary School, Chouki
8	Pithoragarh	Bin	Seri Kanda	Seri Kanda	State Primary School
9	Tehri Garhwal	Chamba	Chopriar Gaon	Chopriar Gaon	Primary School
10	Tehri Garhwal	Jaunpur	Semwal Gaon	Semowal Gaon	Primary School
11	Tehri Garhwal	Chamba	Narendra Nagar	Rampur	Primary School
12	Tehri Garhwal	Thauldhar	Kyolangi	Kyolangi	Rajkiye Prathmik Vidhalaya, Kyolangi
13	Uttarkashi	Bhatwari	Pahi	Pahi	Primary School Pahi
14	Uttarkashi	Mori	Arakot	Arakot	Central Secondary School
15	Uttarkashi	Naugaon	Nagadgaon	Nagadgaon	Primary School Nagadgaon
16	Uttarkashi	Dunda	Dunda	Kamadh	Centra Primary School, Kamadh

2. Issues in Nutrition Observed by Anganwadi and School Teachers Interviewed

The issues identified by the anganwadi and school teachers were mixture of those related to the facilities and equipment to provide nutritious food to the children and mothers. This tendency was observed evident in Garhwal region. Also in Garhwal, the location of anganwadi center was distant which made the anganwadi center to procure required food items. These responses show that the anganwadi in the survey areas lack basic facilities and fund to fulfill their own mandate on nutrition. If the project considers convergence with anganwadi and schools, sufficient fund and other resources may need to be arranged by the project.

Table 2. Issues in Nutrition

Kumaon Region	Garhwal Region
1. In the rainy season, water quality issue cause water borne disease. 2. Unable to add nutritious food in their diet. 3. Quantity of dry fruits provided through anganwadi is not sufficient . 4. Food is not properly cooked due to which it is less digestible and provide low nutrition to the body. 5. Less intake of quality water. 6. Calcium deficiency in women. 7. Lack of awareness about the proper nutrition intake. 8. Due to farm and family work, women less time for children care.	1. The budget is unavailable to provide appropriate nutrition. 2. Difficulty in buying food. 3. Anganwadi is distant from central market and road, hence there is difficult to provide sufficient nutrition. 4. Lack of kitchen in the center 5. Lack of nutrition in children leading to lesser weight and height despite the distribution of Take-Home Ration. 6. The location of center is very dirty area. Mud and water gets accumulated in the area; this can cause diseases in children.

3. Various Schemes and Programs offered through Anganwadi

a. Kumaon Region

Name of the Program/ Scheme	Implementing Agency	Outline of the Intervention
-----------------------------	---------------------	-----------------------------

Supplementary Nutrition	Ministry of Women and Child Development, Government of India	Cash incentives in three installment : 1. First installment of INR 1000 on early registration of pregnancy. 2. Second installment of INR 2000 after six months of pregnancy 3. Third installment of INR 2000 after child birth.
Pradhan Mantri Matru Vandana Yojana	Ministry of Women and Child Development, Government of India	Take home ration provides to all beneficiaries as per prescribed quantity.
Mukhyamantri Mahalaxmi Yojana	Women empowerment and Child development department, Government of Uttarakhand	New mothers having girl child provided with a kit having 250 g dry fruits, 500 ml Mustard oil, two pair of socks, one scarf, two towels, one blanket or sheet, two cotton bed sheet, two packets of sanitary napkins, nail cutter, four bathing soaps and four detergent soaps
National Nutrition Policy	Ministry of Women and Child Development, Government of India	1. Early childhood care and Education 2. Food and Nutrition 3. Immunization 4. Capacity building and institutional delivery 5. Food fortification 6. Deworming and ORS-Zinc 7. Maternal health and Nutrition
Other Interventions concerning Nutrition	<ol style="list-style-type: none"> 1. Iron and iodine rich food should be provided. 2. Dried fruits including almond, dates, and raisin distribution under government scheme. 3. Children friendly toilet need to be constructed. 4. Promotion of local fresh fruit and vegetable intake 5. Inclusion of organic food and fruits in the nutrition Program 6. Provision of regular exercise and yoga related activities 7. Arrangement of fat and vitamin nutrients in liquid form 8. Health awareness program 9. Inclusion of Seasonally locally available fruits and vegetables in the nutrition Program 10. Main nutrients required for body need to be available in liquid form for easily consumption. 	

b. Garhwal Region

In Garhwal Region, some variations in take home ration was observed. The data reflected that the Anganwadi centers in the survey areas were not in a good condition with proper facilities and thus, the centers were unable to function and provide adequate services for women and children. The basic sanitary and clean kitchen facilities with proper educational materials may need to be provided.

Name of the Program/ Scheme	implementing Agency	Outline of the Intervention
Additional nutrition	School Management Committee	5Rs. Each children, once in a week- fruits, peanuts, jaggery etc. are given
Anchal Amrit Yojna	WCD	Packet milk is given for 3-6 year of childrens
Bal Palra Yojna		Provide eggs and Banana for 2 days for 3-6 Years childrens
Bal Plas Yojna		Childrens are given two eggs, milk.
God Bharayi/ Anprashan		Pregnant women are given fruits, banana, apple, orange, guava, pomegranate etc.
Mid Day Meal	Education Department	Childrens are given food every day in school to provide proper nutrition to them and weekly 5Rs. Per children is provided for giving one egg to every child.
		Food is prepared for children of class1-8
Pradhanmantri matra vandan yojna	WCD	Pregnant women are given three installment of 5000 Rs.

Name of the Program/ Scheme	implementing Agency	Outline of the Intervention
Take Home Ration		1. Children between 6 months to 3 years of age are given 1 kg dalia, 500 gm Pulses, 250 gm Bhuna Chana, 12 pieces of chaulai Laddu, 400 gm Jaggery, 55 gm Raisins 2. Pregnant women are given 1.5 kg Flour, 1 kg Moong Dal, 1kg Salt, 50 gm Jaggery/ Raisins
		1. Benefits to pregnant women: 1kg salt, 1 kg pulses, 300 gm Jaggery, 1kg flour 2. 0-2 years childrens: 500gm dalia, 500gm pulses, 12 pieces chaulai laddu, 250 gm Bhuna chana, 250 gm jaggery 3. 03 year childrens: 1kg salt, 1kg rice, 500gm suji, 250 gm bhuna chana, 500gm pulses
		1. Childrens from 6 months to 3 year are given 1 kg dalia, 500 gm mix pulses, 250 gm Bhuna chana, 55 gm Raisins, 12 pieces chaulai Laddu 2. Pregnant women are given 1 kg flour, 1kg Moong dal, 1kg salt, 500 gm Raisins/ Jaggery
		Benefits to pregnant women includes: 1 kg pulses, salt, 55 gm Raisins, 1 Kg Flour. Benefits to children from 6 months to 3 years includes: 1 Kg Salt, 1 Kg Rice, 500 gm Suji, 250 gm Bhuna Chana, 250 gm Jaggery
Mahalaxmi Kit		A kit is given to first girl child born after 2021. Kit includes Blanket, dry fruits, cloths.
Pradhanmantri matra Vandan Yojna		During first pregnancy women are given 5000 Rs.
Bal Palra Yojna		Provide eggs and Banana for 2 days for 3-6 Years children
Kitchen Garden		Rai, Coriander, Tomato, Brinjal, Bottle Gourd, Ridge Gourd, Cabbage etc. are cultivated in Kitchen Garden.
Bal Plas Yojna		Childrens are given 2 banana, 1 egg and milk
National Nutritional mission		This Program is stated to prevent mal nutrition in women and children.
Other Interventions		(1) Addition of Dry fruits and fruits in the THR being given in the Anganwadi for children (2) Correction in the diet and nutrition given in the houses of pregnant women

4. Items distributed at Anganwadi to enhance nutritional balance

(1) Children

Variations in items distributed to children and women at Anganwadi varied. But the generally, rice, broken wheat, chickpea, raisin, jaggery were common. In Garhwal, more variation in items distributed was observed.

a. Kumaon Region

Unit: g/ month

District	Rice*	Dalia/ Porridge	Chickpea	Raisin	Peanut	Jaggery	Roasted Chickpea
Nainital	100	2,000	500	162			300
Pithoragarh	125	2,000	675	167	150	800	
Total Average	117	2,000	570	164	150	800	300

*Rice is indicated by the volume given per child on the day of attending Anganwadi.

b. Garhwal Region

Unit: g/ month

District	Rice	Sugar	Dal	Mix Dal	Notional Laddu	Broken wheat	Roasted Chickpea	Raisin
Tehri Garhwal			875	500	200	833	140	138
Uttarkashi	500	500	500	500		500	150	500
Total Average	500	500	714	500	200	722	144	210

District	Jaggery	Biscuits	Semolina	Black Chickpea	Peanut	Salt
Tehri Garhwal	500	50	500			
Uttarkashi	200		667	250	250	1,000
Total Average	300	50	625	250	250	1,000

(2) Lactating Women

Again in Garhwal region, more variation in ration items was observed. Commonly distributed items included, salt, peanut and jaggery.

a. Kumaon Region

Unit: g/ month

District	Black gram	Salt	Roasted Chickpea	Raisin	Peanut	Jaggery
Nainital	1,000	1,000	500	250		
Pithoragarh	1,400	1,000			608	850
Total Average	1,160	1,000	500	250	608	850

b. Garhwal Region

Unit: g/ month

District	Wheat	Dal	Rice	Sugar	Broken wheat	Roasted Channa
Tehri Garhwal	1,000	875	1,000		917	75
Uttarkashi		750	1,000	500	667	183
Total Average	1,000	833	1,000	500	833	140

District	Raisin	Jaggery	Semolina	Salt	Black Chick pea	Peanut
Tehri Garhwal	175	500	750	1,000		
Uttarkashi	500	440	875	1,000	250	375
Total Average	240	463	833	1,000	250	375

(3) Pregnant Women

As for the rations given to pregnant women, information for Kumaon region was not available. One interesting item distributed in Tehri Garhwal was “Laddu”, a traditional sweets, which is fortified with iron.

a. Kumaon Region

No information was available.

b. Garhwal Region

Unit: g/ month

District	Wheat	Rice	Chickpea Dal	Sugar	Mix Dal	Oil
Tehri Garhwal	1,000	1,000	929			500
Uttarkashi		1,000	667	500	500	
Total Average	1,000	1,000	850	500	500	500

District	Nutritional mix (Laddu)	Broken what	Roasted Chickpea	Raisin	Jaggery	Semolina
Tehri Garhwal	200	929	117	133	500	500
Uttarkashi		667	183		450	833
Total Average	200	850	150	133	469	750

District	Salt	Peanut	Black chickpea	Dates	Semolina
Tehri Garhwal	1,000			50	1,000
Uttarkashi	1,000	375	250		
Total Average	1,000	375	250	50	1,000

(4) Senior Citizens

No information was available for Kumaon Region. In Garhwal, distribution for senior citizens was reported in Tehri Garhwal. Ration items included wheat, rice, mix dal (mixture of pulses) and salt.

a. Kumaon Region

No information was available.

c. Garhwal Region

Unit: g/ month

District	Wheat	Rice	Mix dal	Salt
Tehri Garhwal	1,000	1,000	1,000	1,000
Uttarkashi				
Total Average	1,000	1,000	1,000	1,000

5. Scope for Horticulture to Improve Nutrition

Anganwadi and school teachers interviewed suggested that the fruits and vegetable productions should be promoted and expanded as the horticulture development can improve the availability of produces that can improve the nutritional status of the families and to improve income of the farmers which will also enable them to purchase the nutrient rich food items.

Kumaon Region	Garhwal Region
Fruits intake should be encouraging by adding fresh fruits in the diet of children and mothers under government run program.	. The following plants should be provided: Apple, Lemon, Peach, Walnut, Kiwi, orange, apricot, guava for solving nutritional related problems.
1. Surge in horticulture production will improve socio-economic status of the people, which improves access to fruits and better intake of nutrients. 2. Promotion of fruits plantation in the government offices, which will provide fresh fruits for daily consumption	To improve nutritional status of pregnant women, fruits can be grown. 2. Horticulture department should initiate cultivation Programs for different variety of crops and on the basis of climatic conditions of the area.
1. Increase in horticulture production can helps in reduction of the nutrients related problems.	Garden to grow species such as Giloe, Aloe vera, Mint and other medicinal plants can be established.

<p>1. People need to be more sensitized towards horticulture plantation to increase production and self-dependency on fruits.</p> <p>2. Fallow lands can be converted into fruit orchard.</p>	<p>Also training for growing green vegetables, Cauliflower, Brinjal, Broccoli, Mushroom etc. should be given. Such crops should be grown which can provide medicine and income both.</p>
<p>1. Horticulture requires less human labor and more profit that will help in controlling migration from Uttarakhand.</p> <p>2. Promotion of horticulture is crucial for production enhancement as well as increase their consumption by inclusion in daily diet.</p>	<p>Plantation of such species should be encouraged which can increase nutrition as well as economy, for example- Broccoli, Spinach, Green Vegetables etc.</p>

6. Field Photos

Selected field photos are provided as under.

(1) Name of School/ Anganwadi: Anganwadi Kendra Dungli

Cluster: Chopriar Gaon

Block: Chamba

GP: Dungli

Village: Dungli

District: Tehri Garhwal

Date visited: 02-09-2021

	
<p>Description: Photograph showing the basic location and condition of Anganwadi in Dungli village of Chopriar Gaon Cluster</p>	<p>Description: Photograph is showing the books and toys provided to children in Anganwadi</p>
	
<p>Description: Anganwadi women showing Banner of government scheme for girl child</p>	<p>Description: Vegetable Produced in Anganwadi center</p>

(2) Name of School/ Anganwadi: Anganwadi center, Moun

Cluster: Khadi

Block: Chamba

GP: Moun

Village: Moun

District: Tehri Garhwal

Date visited: 03-09-2021



Description: Area for seating in Anganwadi



Description: Kitchen condition of Anganwadi



Description: Anganwadi worker interacting with the enumerator



Description: Different charts and area for children in Anganwadi

(3) Name of School/ Anganwadi: Primary School, Rampur

Cluster: Khadi

Block: Chamba

GP: Narendra Nagar

Village: Rampur

District: Tehri Garhwal

Date visited: 03-09-2021



Description: Open area around the school premises



Description: Kitchen setup of school



Description: Mid-day meal menu of the school



Description: Separate toilets for girls and boys in school

(4) Name of School/ Anganwadi: Rajkiye Prathamik Vidhalaya, Kyolangi

Cluster: Jwarna

Block: Thauldhar

GP :Kyolangi

Village: Kyolangi

District: Tehri Garhwal

Date visited:07-09-2021



Description: Area around school premises



Description: Kitchen setup of school



Description: Kitchen location of school showing very less availability of utensils



Description: Mid-day meal menu of school

(5) Name of School/ Anganwadi: Anganwadi Center, Dwari

Cluster: Gorsali

Block: Bhatwari

GP: Dwari

Village: Dwari

District: Uttarkashi

Date visited: 07-09-2021

 <p>Latitude: 30.796227 Longitude: 78.599483 Elevation: 2182.02±100 m Accuracy: 3.3 m Time: 07-09-2021 13:27 Note: anganwadi school dwari</p>	
<p>Description: Anganwadi location in Dwari</p>	<p>Description: Kitchen in Anganwadi, Dwari and very limited utensils are available</p>
 <p>Latitude: 30.796309 Longitude: 78.599382 Elevation: 2161.79±100 m Accuracy: 3.6 m Time: 07-09-2021 13:31 Note: anganwadi school dwari</p>	
<p>Description: Area around Anganwadi</p>	<p>Description: Source of water in Anganwadi</p>

(6) Name of School/ Anganwadi:

Cluster: Gangtad

Block: Naugaon

GP: Nagadgaon

Village: Nagadgaon

District: Uttarkashi

Date visited: 10-09-2021

 <p>Latitude: 30.826809 Longitude: 78.51946 Elevation: 1400.31±103 m Accuracy: 10.6 m Time: 10-09-2021 10:48 Note: UPS nagadgaon school</p>	 <p>Latitude: 30.826813 Longitude: 78.51951 Elevation: 1380.33±89 m Accuracy: 2740.0 m Time: 10-09-2021 10:44 Note: UPS nagadgaon school</p>
<p>Description: Picture showing school entrance area</p>	<p>Description: Classroom location of the School</p>

 <p>Latitude: 30.845853 Longitude: 78.251659 Elevation: 1397.78192 m Accuracy: 3.3 m Time: 10-09-2021 10:44 Note: UPS nagadawn school</p>	 <p>Latitude: 30.845757 Longitude: 78.25164 Elevation: 1408.18100 m Accuracy: 5.6 m Time: 10-09-2021 10:47 Note: UPS nagadawn school</p>
Description: Mid-day meal Menu	Description: Kitchen location of the School

(7) Name of School/ Anganwadi: Central Primary School, Kamadh
Cluster: Dunda Block: Dunda GP: Kamadh
Village: Kamadh District: Uttarkashi
Date visited: 06-09-2021

 <p>Latitude: 30.634366 Longitude: 78.563556 Elevation: 1815.83192 m Accuracy: 5.3 m Time: 06-09-2021 11:57 Note: basic school kamadh</p>	 <p>Latitude: 30.634456 Longitude: 78.563738 Elevation: 1833.594101 m Accuracy: 12.5 m Time: 06-09-2021 12:00 Note: basic school kamadh</p>
Description: Location and area around Primary School in Kamadh	Description: Cook and Kitchen area of Primary School, Kamadh

(8) Anganwadi name : Anganwadi center, Jogipura
Cluster: Ramnagar Block: Ramnagar
GP: Jogipura
Village: Jogipura District: Nainital
Date visited: 02.09.2021

 <p>Latitude: 29.372696 Longitude: 79.125074 Elevation: 363.6714 m Accuracy: 2.5 m Time: 09-04-2021 11:20 Note: puchhdi jogipura</p>	 <p>Latitude: 29.372696 Longitude: 79.125074 Elevation: 363.6714 m Accuracy: 2.5 m Time: 09-04-2021 11:20 Note: puchhdi jogipura</p>
Schedule interview with Anganwadi Staff	Geo tag location of the Anganwadi center

	
<p>Packed food material distributed under Nutrition Program.</p>	<p>Medicine kit provided under National Nutrition policy.</p>

(9) Name of School : State Junior High School, Chilkiya
Cluster: Ramnagar
GP: Chilkiya
Village: Chilkiya
Date visited: 03.09.2021

Block: Ramnagar

District: Nainital

	 <p>Latitude: 29.36353 Longitude: 79.102808 Altitude: 1901.9653 m Accuracy: 2100.0 m Azimuth: 68° (E) Pitch: -0.1° (0.5°) Time: 05-09-2021 07:36 Note: check</p>
	
<p>Meeting with the School staff.</p>	<p>Geo tag location of the School's Kitchen</p>
<p>Interior of the kitchen used for Mid-day meal preparation.</p>	<p>School wall displaying day wise food menu chart of Mid-day meal.</p>

(10) Name of School : State Girls Intermediate college, Haldwani
Cluster: Haldwani Block: Haldwani
District: Nainital
Date visited: 04.09.2021



Enumerator with the Principal at School's premise.

Schedule interview with the School's Principal



Chart displaying day wise food menu of Mid-day meal.

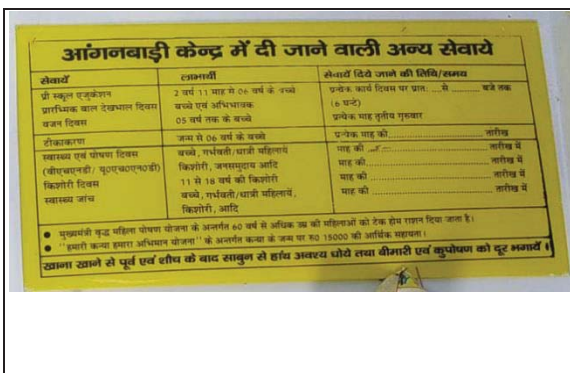

School's kitchen and utensils use for Mid-day meal preparation

(11) Name of Anganwadi: Anganwadi center, Devalmalla
Cluster: Kunwarpur Block: Haldwani
GP: Devalmalla
Village: Devalmalla
Date visited: 05.09.2021
District: Nainital



Geo tag location of the Anganwadi center.





Anganwadi worker with Mukhyamantri mahalaxmi kit

	
<p>Information board with detail of the targeted beneficiary and food materials distributed through Anganwadi center.</p>	<ol style="list-style-type: none"> 1. In the right, Different Generic medicine distribute through Anganwadi. 2. In the left, Chart papers having basic education content and details of the various schemes.

(12) Name of Anganwadi: Anganwadi Center, Jhutiya
Cluster: Ramgarh
GP: Jhutiya
Village: Jhutiya
Date visited: 06.09.2021

Block: Ramgarh

District: Nainital

	
<p>Schedule interview with the Anganwadi worker</p>	<p>Information board with details of various schemes and Programs implemented by women and Child development department.</p>
	
<p>Anganwadi worker with food material and medicine kit distributed through the center</p>	<p>Geo tag location of the Anganwadi center</p>

(13) Name of School : State primary school, Jhutiya

Cluster: Ramgarh

Block: Ramgarh

GP: Jhutiya

Village: Jhutiya

District: Nainital

Date visited: 06.09.2021



Schedule interview with School's Principal



Discussion with the village's women



Interior of the classroom having timetable and chart with general information.



Weekly food menu painted on kitchen's wall and geo tag location of the school

(14) Name of School : State primary school, Chanfi

Cluster: Alchouna

Block: Bhimtal

GP: Chanfi

Village: Chanfi

District: Nainital

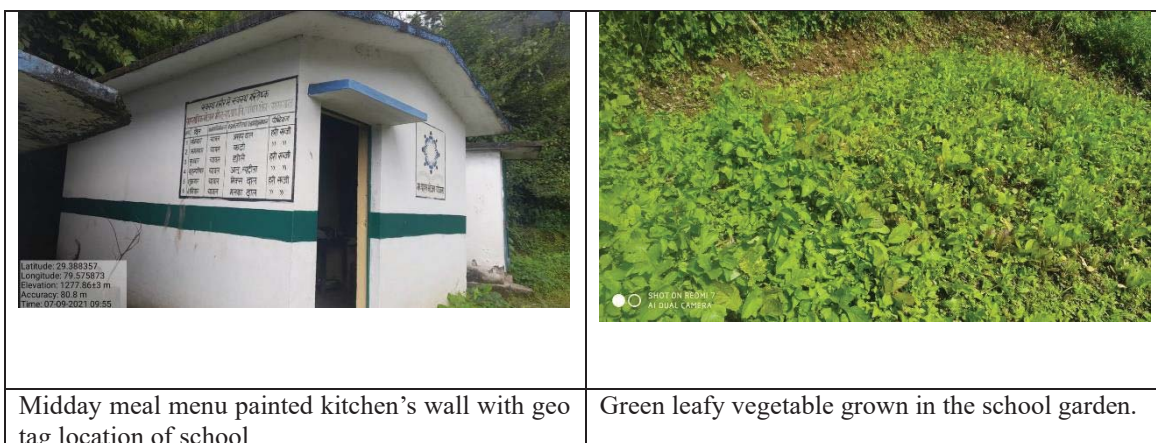
Date visited: 07.09.2021



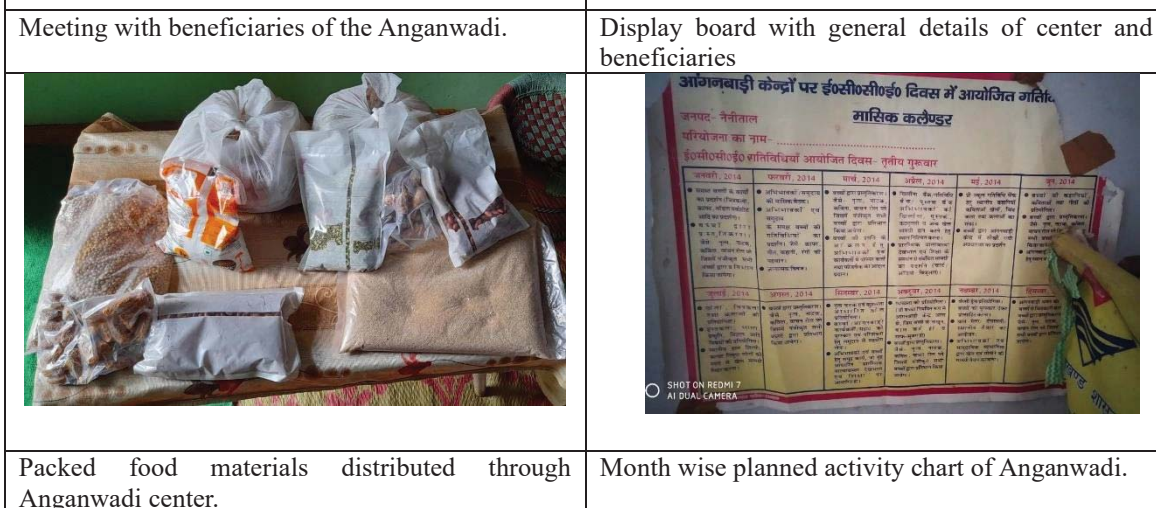
Schedule interview with School's Principal



Kitchen uses for preparation of Mid-day meal



(15) Name of Anganwadi: Anganwadi center, Chanfi
Cluster: Alchouna Block: Bhimtal
GP: Chanfi
Village: Chanfi District: Nainital
Date visited: 07.09.2021



(16) Name of Anganwadi: Anganwadi Center, Udhyari

Cluster: Udhyari

Block: Berinag

GP: Udhyari

District: Pithoragarh

Village: Udhyari

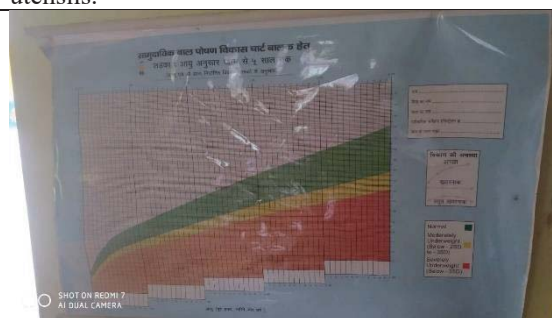
Date visited: 13.09.2021



Geo tag location of the Anganwadi center.

In the Right side, Schedule interview with the Anganwadi staff.

In the Left side, Anganwadi staff with kitchen utensils.



Layout for filling development details of the new born baby.

WHO recommended health information chart illustrating age wise health indicator.

(17) Name of School : State primary school, Udhyari

Cluster: Udhyari

Block: Berinag

GP: Udhyari

District: Pithoragah

Village: Udhyari

Date visited: 14.09.2021



Meeting with the Principal of the School.

Geo tag location of the School's kitchen

	
Classroom's wall covered with study materials.	New under construction building of the School.

(18) Name of School : State primary school, Jakh
Cluster: Koteshwar
GP: Jakh
Village: Jakh
Date visited: 14.09.2021

Block: Berinag



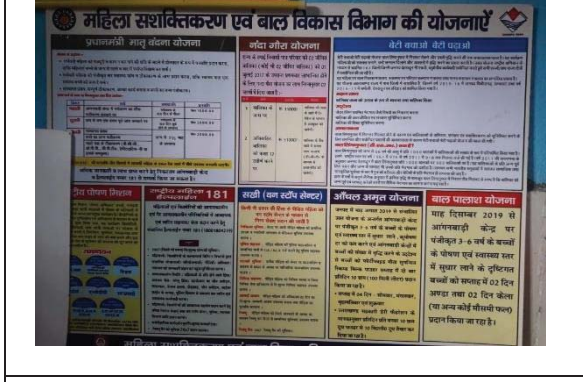

District: Pithoragarh

	
Meeting with the School's staff.	Geo tag location of the under renovation building of the school.
	
Kitchens utensils use for Mid-day meal preparation.	School's kitchen building for Mid-day meal preparation.

(19) Anganwadi: Anganwadi Center, Jakh
 Cluster: Koteshwar
 GP: Jakh
 Village: Jakh
 Date visited: 14.09.2021

Block: Berinag

District: Pithoragarh


 <p>Latitude: 29.824455 Longitude: 80.054016 Accuracy: 20.00 m Azimuth: 360° (N) Pitch: 14.2° (5.5°) Time: 14-09-2021 11:20 Note: check</p> <p>Powered by AnglaCam</p>	 <p>SHOT ON REDMI 7 AI DUAL CAMERA</p>
<p>Anganwadi staff with the kitchen's utensils use for food preparation.</p>	<p>Discussion with the local people about nutrition related problem in village.</p>
	 <p>SHOT ON REDMI 7 AI DUAL CAMERA</p>
<p>Chart illustrating information about the various government supported schemes for children and women.</p>	<p>Chart with time table of the Anganwadi activities.</p>

(20) Name of School : State primary school, Chouki
 Cluster: Kuntola
 GP: Chouki
 Village: Chouki
 Date visited: 15.09.2021

Block: Gangolihaat

District:



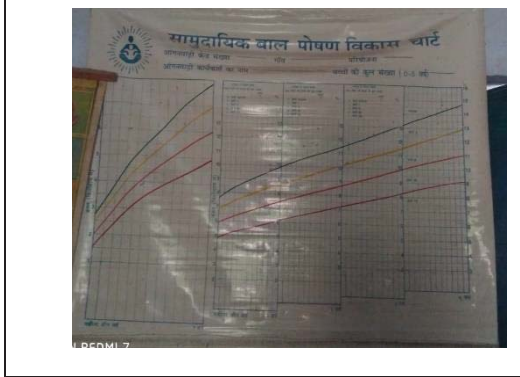

 <p>SHOT ON REDMI 7 AI DUAL CAMERA</p>	 <p>SHOT ON REDMI 7 AI DUAL CAMERA</p>
<p>Meeting with the School staff.</p>	<p>Teachers with their classroom.</p>

	
<p>Various charts and knowledge materials use for teaching purpose.</p>	<p>Geo tag location of the School's kitchen utilizes for Mid-day meal preparation.</p>

(21) Name of Anganwadi: Anganwadi Center, Chouki
Cluster: Kuntola
GP: Chouki
Village: Chouki
Date visited: 15.09.2021

Block: Gangolihat

District: Pithoragarh

	
<p>Meeting with the Anganwadi staff.</p>	<p>Geo tag location of the Anganwadi center.</p>
	
<p>Children's nutrition development chart for knowledge dissemination.</p>	<p>Knowledge materials use for the informal education.</p>

(22) Name of School : State primary school
 Cluster: Bhilot to baman
 GP: Seri Kanda
 Village: Seri Kanda
 Date visited: 16.09.2021

District: Pithoragarh

Block: Bin

	
<p>Meeting with the Principal of School</p>	<p>School's wall decorated with morning's pledge, Mid-day meal menu chart.</p>
	
<p>Kitchen cookware and utensils use for the Mid-day meal preparation</p>	<p>Geo tag location of the School's kitchen uses for meal preparation.</p>



(23) Name of Anganwadi: Anganwadi center, Seri kanda
 Cluster: Bhilot to Baman
 Serikanda
 Village: Seri Kanda
 Date visited: 16.09.2021

Block: Bin

GP:

District: Pithoragarh

	
<p>Enumerator's meeting with Anganwadi staff.</p>	<p>Knowledge material used for the informal education.</p>

 <p>SHOT ON REDMI 7 AI DUAL CAMERA</p>	 <p>Latitude: 29.519475 Longitude: 80.07823 Altitude: 1575.933 m Accuracy: 3549.0 m Azimuth: 202° (S) Pitch: -0.4° (3.0°) Time: 16-09-2021 14:49 Note: check</p> <p>Powered by Google Cam</p>
Weighing and height measuring machine used for the monthly checkup.	Geo tag location of Anganwadi center.

Attachment for Chapter 6

Attachment 6.7.1 District wise / Block wise clusters in Fruits, Vegetables & Spices under MIDH

Sl. No.	District	Block	Fruits		Vegetable		Spices		Flowers		Total	
			No. of Cluster	No. of Villages include	No. of Cluster	No. of Villages include	No. of Cluster	No. of Villages include	No. of Cluster	No. of Villages include	No. of Cluster	No. of Villages include
01	Nainital	Ramgarh	6	35	0	0	0	0	0	0	6	35
		Dhari	2	20	2	15	0	0	1	5	5	40
		Kotabagh	2	12	0	0	0	0	0	0	2	12
		Betalghat	2	19	1	4	0	0	0	0	3	23
		Okhlakanda	2	19	0	0	2	23	0	0	4	42
		Bheemtal	1	5	1	5	2	17	0	0	4	27
		Haldwani	1	11	1	10	0	0	0	0	2	21
		Ramnagar	2	19	0	0	0	0	2	18	4	37
		Total	18	140	5	34	4	40	3	23	30	237
02	Pithoragarh	Bin	3	14	4	62	4	62	0	0	11	138
		Munakot	7	37	5	67	4	56	0	0	16	160
		Didihat	3	11	4	39	4	37	0	0	11	87
		Kanalichina	6	35	4	46	4	67	0	0	14	148
		Dharchula	8	50	5	63	4	59	0	0	17	172
		Munsyari	3	22	5	67	4	54	0	0	12	143
		Gangolihat	2	11	4	26	4	37	0	0	10	74
		Berinag	3	11	2	11	4	36	0	0	9	58
		Total	35	191	33	381	32	408	0	0	100	980
03	Tehri	Chamba			2	11			1	7	3	18
		Jaunpur	4	22	5	27	1	9			10	58
		Thauldhar			1	7					1	7
		Pratapnagar	2	11							2	11
		Jakhanidhar	1	11	1	7					2	18
		Kirtinagar	1	9							1	9
		Bhilangna			1	4	1	6			2	10
		Total	8	53	10	56	2	15	1	7	21	131
		Bhatwadi	10	36	19	25	3	4			32	65
04	Uttarkashi	Dunda	15	28	20	58	1	22			36	108
		Chinyalisaud	18	29	33	35					51	64
		Naugaon	17	90	36	89	2	23			55	202
		Purola	13	50	14	48	2	29			29	127
		Mori	8	74					1	4	9	78
		Total	81	307	122	255	8	78	1	4	212	644
		Grand Total	142	691	170	726	46	541	5	34	363	1992

Source: UKDHFP

Attachment 6.7.2 Single Window Clearance System

The Investment Promotion and Facilitation Cell (IPFC) of the Directorate of Industries of Uttarakhand operates the Investor Facilitation Centre (IFC) which is a centralized one-stop shop institution for the functions of investment promotion and investor facilitation in a structured, focused and comprehensive manner. To facilitate and ensure investments in the state, the IPFC has appointed nodal officers from the departments in the key sector on industrial investment as shown below. These nodal officers are single point of reference for a sector and responsible for drawing investments in the respective sector.

<Key focus Sector of the State>

- 1) Food processing
- 2) Horticulture and floriculture
- 3) Tourism & hospitality
- 4) Wellness & AYUSH
- 5) Automobile
- 6) Pharmaceutical
- 7) Natural fibres
- 8) Information technology
- 9) Herbs & Aromatics
- 10) Renewable Energy
- 11) Film shooting
- 12) Biotechnology

IFC provides assistance and support to existing and potential investors from India and outside during the entire life cycle of the business through the following services.

- 1) Step-by-step guidance on the application and approval procedures for various regulatory approvals
- 2) Coordination with various departments in expediting the processes of regulatory approvals
- 3) Facilitation of meetings with relevant government officials
- 4) Facilitation with financial institutions, legal and insurance agencies
- 5) Single point interface for all the grievances/queries/feedback in regard to the industrial scenario in the State
- 6) Time-bound remedial action on queries/grievances raised by investors by involving the respective departments

The Single Window Clearance System portal (<https://investuttarakhand.com/single-window-clearance-system>) formulated by IPFC is a single window facilitation mechanism for investors. The portal is a medium of information for investors on Government policies, incentive schemes and the availability of infrastructure. It provides manuals to help investors understand the application process for proposed investment projects. The portal will also facilitate different stakeholder departments to process applications by investors and approve them online. It also aims to build a centralized repository of sector-

wise investments in the State and Government policies, and ultimately to deliver to investors a responsive service. The system facilitates registration for users interested in Uttarakhand, enabling them to collect information regarding facilities, infrastructure availability, and the sector-wise permissions required etc. The table below shows the registered enterprises in agriculture sector as of September 2021.

Potential Investors in Agriculture Sector registered under the Single Window Clearance System (as of September 2021)

No	Name of the Enterprise	E-mail address	Area of operation
1	Devishi Renewable Energy Pvt Ltd, 100 percent subsidiary of Acme Solar Holding Pvt Ltd	archan@acme.in	Electric power generation using solar energy
2	Devishi Solar Power Pvt Ltd, 100 percent subsidiary of Acme Solar Holding Pvt Ltd	archan@acme.in	Electric power generation using solar energy
3	Sunworld Energy Pvt Ltd, 100 percent subsidiary of Acme Solar Holding Pvt Ltd	archan@acme.in	Electric power generation using solar energy
4	Eminent Solar Power Pvt Ltd, 100 percent subsidiary of Acme Solar Holding Pvt Ltd	archan@acme.in	Electric power generation using solar energy
5	ZIPPY EDIBLE PRODUCTS PRIVATE LIMITED	accounts@zippyedibles.com	Manufacture of macaroni, noodles, couscous and similar farinaceous products
6	MEGHDOOT PACKAGING UTTARANCHAL	skapoor@mcpindia.co.in	Manufacture of corrugated paper board containers
7	Devarpan foods private limited	dfpl@kvspremier.com	Manufacture of cereal breakfast foods obtained by roasting or swelling cereal grains
8	GUJARAT AMBUJA EXPORTS LTD	ua@ambujagroup.com	Manufacture of other starch products n.e.c.
9	ACHINT AND APARNA AGRO PRODUCTS PRIVATE LIMITED	rahuul.jethi@gmail.com	Manufacture of macaroni, noodles, couscous and similar farinaceous products
10	ROOT HYDROCARBONS LIMITED	vivekkumarshah@gmail.com	Electric power generation using other non conventional sources
11	DWARIKA FOOD PRODUCTS	dwarikafoodproducts@gmail.com	Manufacture of macaroni, noodles, couscous and similar farinaceous products
12	Shanti Frozen Foods	shantifrozenfoods@gmail.com	Preservation of fruit and vegetables n.e.c.
13	ANAND FOODS	himanshuarora1979@yahoo.com	Preservation of fruit and vegetables n.e.c.
14	JAI KISSAN FOODS	canaveenarora@gmail.com	Preservation of fruit and vegetables n.e.c.
15	STELLAR COLD CHAIN INC	apurvjindal@jvpl.in	Warehousing of refrigerated (cold storage)
16	Shivanya Frozen Food products	uksharma88@yahoo.com	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
17	AGARWAL FROZEN FOODS	agarwalfrozenfoods@gmail.com	Canning of fruits and vegetables
18	Uttarakhand Agriculture Produce Marketing Board	dgmduem@gmail.com	Warehousing of refrigerated (cold storage)
19	Dehradun Waste Management Private Limited	mohitdwivedi@ramky.com	Electric power generation using other non conventional sources
20	S K FROZEN FOODS	jindal@hotmail.com	Preservation of fruit and vegetables n.e.c.
21	Parle Agro Private Limited	compliance@parleagro.com	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
22	ROQUETTE INDIA PRIVATE LIMITED	ANSHUMAN.KUSHWAHA@roquette.com	Manufacture of other starch products n.e.c.
23	SHUKLAMBARA PAPERS PVT LTD	shuklambarapapers@gmail.com	Manufacture of packing paper
24	Parle Agro Private Limited	compliance@parleagro.com	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
25	Shri Dev Suman Agri Cluster	dgmduem@gmail.com	Manufacture of fruit or vegetable juices and their concentrates, squashes and powder
26	GIR DAIRY FARMING PRODUCTS PRIVATE LIMITED	binushukla@hotmail.com	Retail sale of cereals and pulses, tea, coffee, spices and flour
27	India Glycols Limited	hem.k.sanwal@indiaglycols.com	Manufacture of essential oils; modification by chemical processes of oils and fats (e.g. by oxidation, polymerization etc.)
28	TOMAR FOODS PRIVATE LIMITED	saurabh.kashipur64@gmail.com	Manufacture of other bakery products n.e.c.
29	K M PAPERS	kmpapers1516@gmail.com	Manufacture of packing paper
30	GUPTA AGRO PRODUCTS	sushil@gapmail.in	Other semi-processed, processed or instant foods n.e.c.
31	Individual Quick Frozen for Green Pea	dgmduem@gmail.com	Preservation of fruit and vegetables n.e.c.
32	SUN LAYER ENERGY PRIVATE LIMITED- PROJECT 1	sumit.sood@sael.co	Electric power generation using solar energy
33	Svarog Global Power Private Limited	pankaj.nphl@gmail.com	Electric power generation using solar energy
34	Pochampad Construction Company Pvt Ltd	pochampad.solar@gmail.com	Electric power generation using solar energy
36	SUN LAYER ENERGY PRIVATE LIMITED - PROJECT-2	sumit.sood@sael.co	Electric power generation using solar energy
37	EMAMI POWER LIMITED	emamirk012445@gmail.com	Electric power generation using solar energy
38	Bagnath Power Private Limited .	mcbagnath@gmail.com	Electric power generation using solar energy
39	DS SMART ENERGY P LTD	dssmartenergy@gmail.com	Electric power generation using solar energy
40	R.K.FOOD PRODUCTS	rkfoodproductskashipur@gmail.com	Preservation of fruit and vegetables n.e.c.
41	GREENDOT HEATH FOODS PVT LTD	hr@greendotfoods.com	Manufacture of other bakery products n.e.c.
42	BAHL PAPER MILLS LIMITED	bahlprojects@gmail.com	Manufacture of corrugated paper and paperboard
43	PSB PAPERS PRIVATE LIMITED	psbpapers@gmail.com	Manufacture of corrugated paper and paperboard
44	Gir Jaggery unit of Gir Dairy Farming products Private Limited.	binushukla@hotmail.com	Manufacture of 'gur' from sugarcane
45	M/S RAYSUN ENERGY PRIVATE LIMITED	raysunpvtd@gmail.com	Electric power generation using solar energy
46	Electryone Power Limited	okudalkar@brookfieldrenewable.in	Electric power generation using solar energy
47	Pashupati Solar Energy Pvt. Ltd.	pashupatisolar2020@gmail.com	Electric power generation using solar energy
48	PMV Nutrient Products Pvt Ltd	hr@pmvnutrient.com	Manufacture of vitaminised high protein flour, frying of dal and other cereals
49	KMRM INFRASTRUCTURE PRIVATE LIMITED	kmrminfrastructure@gmail.com	Electric power generation using solar energy
50	Suman Gupta Green Energy Pvt. Ltd.	amitguptapnp@gmail.com	Electric power generation using solar energy
51	GANGOTRI PAPER MILLS PRIVATE LIMITED	info@gangotripaper.com	Manufacture of packing paper

Source: Directorate of Industries of Uttarakhand

Attachment 6.7.3 Results of Questionnaire to Agribusiness Company in India

February 2022

- Answered by 5 companies
 - Conducting business in UK = 1 companies
 - Not conducting business in UK = 4 companies
- Having interest in collaboration with UKIHDP = 5 companies

1) Conducting business in UK

Name	CropIn
Business area	Digital agriculture services (Comprehensive platform) Agricultural financing including agricultural insurance
Business outline	<ul style="list-style-type: none"> • A leading AI and data led AgTech organisation that provides SaaS solutions to agri-businesses globally, to enable stakeholders in the agri-ecosystem to adopt and drive digital strategy. • Using Artificial Intelligence, Machine Learning and Satellite Imaging, CropIn creates an interconnected network of all these stakeholders, enabling customers like banks, insurance companies, government, development agencies, farming companies, agri-input companies, farm equipment companies, food processors and retailers to analyse and interpret data to derive real-time actionable insights on standing crop. • With the vision to maximise per acre value and the mission to make every farm traceable, CropIn adds value to agri-businesses by increasing efficiency, scaling productivity, and strengthening sustainability.
Business in UK	We are working on Spice & Honey value Chain Traceability - Farm to Fork with a development sector agency and the project is being funded by Govt.
Interest in UKIHDP	Yes
	Farm Digitization and Advisory Services linked enabling better market linkages: To help/accelerate the govt. vision of doubling the farmers income by democratizing data for all stakeholders (Banks, Insurance Companies, Government, Development Agencies, Farming, Retailers, Agri-input) of the industry, connecting the ecosystem to a platform that empowers them to benefit from data-driven farming.

2) Not conducting business in UK

Name	Crofarm Agri Products Private Limited
Business area	Digital agriculture services (Platform for direct to consumer)
Business outline	We have an app with name of Otipy & we are supplying fruits & vegetables to direct consumers in Delhi NCR.
Interest in UKIHDP	Yes
Expected service for UKIHDP	Sourcing various Agri Products from Uttarakhand

Name	EF Polymer Private Limited
Business area	Agri-inputs production/supply (Irrigation product)
Business outline	We have a product that minimize the irrigation water requirement in farming while helping in yield increase without negatively affecting climate.
Interest in UKIHDP	Yes
Expected service for UKIHDP	We can provide our product "Fasal Amrit Hydrogel"

Name	Yuktix Technologies Private Limited
Business area	Digital agriculture services (High touch agronomy advisory for farm management using IoT and AI)
Business outline	<ul style="list-style-type: none"> • Yuktix is an Agritech startup based of Bangalore, India. We provide high touch,

	<p>highly personalised, crop specific agro-advisory to growers using our platform GidaBits driven by the unique combination of IoT and AI.</p> <ul style="list-style-type: none"> GidaBits platform help growers with Irrigation Management, Disease and Insect Management and General Agronomy practices. This help them to increase the production by 30%.
Interest in UKIHDP	Yes
Expected service for UKIHDP	High touch Agronomy advisory using IoT and AI highly personalised at farm level.

Name	SourceTrace
Business area	Digital agriculture services (Platform from farm to retail with advisory service)
Business outline	<ul style="list-style-type: none"> SourceTrace is the only SAAS platform that connects food and agri with a solution at every touchpoint – from farm to retail. It brings all stakeholders and all data onto a single digital platform. Its strength lies in easy user interface, seamless scalability and faster customization. On the farm management side, we provide Farmer Advisory Services, Monitoring and Evaluation, Certification, Financial Services and Market Linkage services. On the food traceability side, our solution enables tracking and providing insights about origin, sustainability footprint, food losses in the value chain and more.
Interest in UKIHDP	Yes
Expected service for UKIHDP	We are already working with Haryana Horticulture department in aggregating farmers, sending advisories and creating a marketplace. We can help with farm digitization, certification, traceability, supply chain management, market linkage and financial services.

3) What type of business promotion services do you expect the Uttarakhand state government in developing your business with UKIHDP in the future? (multiple answers)

	Conducting business in UK	Not conducting business in UK	Total
No. of Company	1	4	
Business seminars/exhibitions	1	3	4
Business climate information in Uttarakhand	1	2	3
Introduction of local partners (matching service)	1	4	5
Introduction of available government supporting schemes	1	4	5
Tax incentive	-	2	2
Loan support	-	2	2
Grant support	-	1	1
Funded support	-	1	1

4) Suggestion for UKIHDP

- The problem in agriculture couldn't be solved by any one agency, we should all work together in convergence to provide a holistic solution to farming sector. We need to move from production driven farming to market driven farming, especially focused on cluster based approach.
- Need Information for any pack house support in Uttarakhand
- Govt should work on a pilot in high value crops to aggregate small farmers and show the value of digitization.

Attachment for Chapter 7

Attachment 7.5.1 Procurement Plan for Each Activity

Work Item		Procurement Method	Activity Executed by	Supported by	
1. Area Expansion and Production Enhancement					
1.1 Climate Change Adaptation					
(1)	Survey on climate impacts/ climate adaptation measures	Service provider will be employed by local tender.	LCB	Service Provider (Private firms, University, Research Institute, Consultant or NGO)	PMU/PMC/ Supporting Institutions
(2)	Development and dissemination of proper farming techniques				
(3)	Development of varieties				
1.2 Infrastructure Development					
(1)	Water Source Facility	Detailed planning	DU	DIU	PMU/PMC
		Pre-construction activities (Cost estimate, tender)	DU	DIU	PMU/PMC
		Construction	LCB	Contractor	PMU/PMC
(2)	Micro Irrigation	Detailed planning	DU	DIU	PMU/PMC
		Pre-construction activities(Cost estimate, tender)	DU	DIU	PMU/PMC
		Construction	LCB	Contractor	PMU/PMC
(3)	Farm Machinery Bank	Detailed planning	DU	DIU	PMU/PMC
		Pre-construction activities(Cost estimate, tender)	DU	DIU	PMU/PMC
		Construction	LCB	Contractor	PMU/PMC
1.3 R&D Support (pre-harvest)					
(1)	High-tech nursery	Seek O&M partner		DHFP	
	Hi-tech Nursery (4 ha)	Detailed planning	DU	PMU	KVK/University
	- public sector -	Pre-construction activities	DU	PMU	PMC
		Procurement of materials	LCB	Supplier	PMU/PMC
		Construction	LCB	Contractor	PMU/PMC
(2)	Planting materials (nursery)				
	Import of planting materials (fruits)	Preparation of bid document and tender document	DU	PMU	KVK/University
		Procurement of planting materials including quarantine period	LCB	Supplier	PMU/PMC
		Delivery to High tech nursery and Gov. Nursery	LCB	Contractor and Quarantine center	PMU/PMC
	Establishment of virus free mother block for fruits (from Domestic)	Detailed planning	DU	DIU	KVK/University
		Pre-construction activities	DU	DIU	PMU/PMC
		Procurement	LCB	Supplier	PMU/PMC
	Rejuvenation and replacement of senile orchards	Preparation of bid document and procurement of supplier	DU	DIU	KVK/University/PMC
		Procurement and delivery	DU	Farmer	KVK/University/PMC
(3)	Integrated COEs				
	Integrated COE for Kiwi	Detailed planning	DU	PMU	KVK/University/PMC
		Pre-construction activities (partner identification)	DU	PMU	PMC
		Construction	LCB	Contractor	PMC
	Integrated COE for off-season/ exotic vegetables	Detailed planning	DU	PMU	KVK/University/PMC
		Pre-construction activities	DU	PMU	PMU/PMC
		Procurement/Construction	LCB	Contractor	PMU/PMC
	Area Expansion for Ultra High Density Apple	Detailed planning	DU	PMU	KVK/University/PMC
		Pre-construction activities	DU	PMU	PMU/PMC
		Procurement/Construction	LCB	Contractor	PMU/PMC
	New Area Expansion for Kiwi integrated package with drip and trails	Detailed planning	DU	PMU	KVK/University/PMC
		Pre-construction activities	DU	PMU	PMU/PMC
		Procurement/Construction	LCB	Contractor	PMU/PMC
	Area Expansion for other plantation fruit crops (Litchi and Citrus)	Detailed planning	DU	PMU	KVK/University/PMC
		Pre-construction activities	DU	PMU	PMU/PMC
		Procurement/Construction	LCB	Contractor	PMU/PMC
(4)	Upgrading of food science training centre	Detailed planning	DU	PMU	PMC
		Pre-construction activities	DU	PMU	PMC
		Construction	LCB	Contractor	PMU/PMC
(5)	Leaf/ Tissue analysis lab for IPM	Detailed planning	DU	DHFP	PMU/PMC
		Pre-construction activities	DU	PMU	PMC
		Construction	LCB	Contractor	PMU/PMC
1.4 Provision of Farm Equipment and Material					
(1)	Equipment and materials for protected cultivation				
	Poly house	Detailed planning	DU	DIU	PMU/PMC/KVK/University
		Pre-construction activities	DU	DIU	PMU/PMC/KVK/University
		Procurement and installation	LCB	Supplier	PMU/PMC/KVK/University
	Plastic mulching (fruits and vegetable crops)	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Anti hail net	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
(2)	Planting materials (farmers)				
	Planting material and cultivation of flowers under poly house	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Planting material and cultivation of vegetable under poly house	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Open Pollinated Vegetable Seeds (Peas, etc.)	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Potato Seedling	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Hybrid Vegetable Seeds (Tomato, etc.)	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Rhizomatic Spice Seeds (Ginger, Garlic, Turmeric)	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Bulbous Flower Seeds (Lilium, Tulip, Carnation, Gerbera)	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Aromatic Plant (Damask Rose)	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
(3)	Promotion of INM and IPM	Detailed planning	DU	PMU	PMU/PMC/KVK/University
		Implementation	LCB	Supplier	PMU/PMC/KVK/University

Attachment 7.5.1 Procurement Plan for Each Activity

Work Item			Procurement Method	Activity Executed by	Supported by
(4)	Materials for livelihood improvement and nutrition improvement				PMU/PMC/KVK/University
	Mushroom: Production unit under natural condition (Button and Oyster), Private	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Mushroom: Production of Ganoderma species, - Pilot basis (R&D), Private	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
	Bee Keeping: Production unit under natural condition	Preparation of bid document and procurement of supplier	DU	DIU	PMU/PMC/KVK/University
		Procurement and delivery	LCB	Supplier	PMU/PMC/KVK/University
1.5 Capacity Development for Farmers					
(1)	Training on farm planning and management (SHEP)	Preparation of bid document	DU	PMU	PMC
		Procurement of CBBO	DU	PMU	PMC
		Implementation	DU	CBBO	PMU/PMC/KVK/University
(2)	Technical training on cultivation and post-harvest handling	Preparation of bid document	DU	PMU	PMC
		Procurement of CBBO	DU	PMU	PMC
		Implementation	DU	CBBO	PMU/PMC/KVK/University
(3)	Livelihood improvement	Preparation of bid document	DU	PMU	PMC
	Mushroom cultivation	Procurement of CBBO	DU	PMU	PMC
	Bee Keeping	Implementation	DU	CBBO/Service Provider or Domain experts	PMU/PMC/KVK/University
(4)	Nutrition improvement	Preparation of bid document	DU	PMU	PMC
		Procurement of CBBO	DU	PMU	PMC
		Implementation	DU	CBBO/Service Provider or Domain experts	PMU/PMC/KVK/University
2. Supply Chain Development					
2.1 Infrastructure development					
(1)	Post harvest processing by FPO				
	Pack House with primary processing unit	Detailed planning	DU	PMU/FPO	PMU/PMC
		Pre-construction activities	DU	DIU	PMU/PMC
		Procurement / Construction	LCB	Supplier / Contractor	PMU/PMC
	Cold Storage Room (30 MT) at field level	Detailed planning	DU	PMU/FPO	PMU/PMC
		Pre-construction activities	DU	DIU	PMU/PMC
		Procurement / Construction	LCB	Supplier / Contractor	PMU/PMC
	Refrigerated Transport Vehicle	Detailed planning	DU	PMU/FPO	PMU/PMC
		Pre-construction activities	DU	DIU	PMU/PMC
		Procurement	LCB	Supplier / Contractor	PMU/PMC
	Outlet of Horticulture Products	Procurement / Construction	DU	PMU/FPO	PMU/PMC
		Pre-construction activities	DU	DIU	PMU/PMC
		Procurement	LCB	Supplier / Contractor	PMU/PMC
	Basic Food Processing Unit	Detailed planning	DU	PMU/FPO	PMU/PMC
		Pre-construction activities	DU	DIU	PMU/PMC
		Procurement	LCB	Supplier / Contractor	PMU/PMC
(2)	Public market				
	Rural markets, Apni Mandies, and Direct market	Detailed planning	DU	PMU/UKHB	PMC
		Pre-construction activities	DU	PMU/UKNB	PMC
		Procurement	LCB	Supplier / Contractor	UKHB/PMU/PMC
(3)	Private marketing and processing				
	Cold Storage Room (30 MT) at market level	Detailed planning	DU	PMU/UKHB	PMC
		Pre-construction activities	DU	DIU	UKHB/PMU/PMC
		Procurement	LCB	Supplier / Contractor	UKHB/PMU/PMC
2.2 FPO Development					
(1)	Employment of CBBO for promotion of FPOs		DU	PMU	PMC
(2)	Cluster identification and baseline survey	Pre-construction activities	DU	PMU	PMC
		Implementation	LCB	CBBO	PMU/PMC
(3)	Orientation for CBBOs engaged at the DIU level		DU	DIU	PMU/PMC
(4)	Community mobilisation and registration of FPOs		DU	CBBO	PMU/PMC/Supporting Institutions
(5)	Organisational capacity building for FPOs		DU		
(6)	Business planning with marketing strategy		DU		
(7)	Implementation of business plan, Existing FPOs		DU		
(7)	Implementation of business plan, New FPOs		DU		
(8)	Technical training on post-harvest handling and processing		DU		
(9)	Corpus fund management		DU		
2.3 R&D Support (post-harvest)					
(1)	Upgrading of post-harvest and food processing centres	Detailed planning	DU	DIU	PMU/PMC
		Pre-construction activities	DU	DIU	PMU/PMC
		Procurement of equipment	LCB	Supplier	PMC
2.4 Private Sector Collaboration Promotion					
(1)	Matching FPOs with agribusiness operators	Detailed planning	DU	PMU	PMC
		Implementation		CBBO, Private firms, FPO	PMU/PMC
(2)	Facilitation of pilot business trial	Detailed planning	DU	PMU	PMC
		Implementation		CBBO, Private firms, FPO	PMU/PMC
3. Institutional Development for Project Management					
3.1 Procurement of Equipment and Materials					
(1)	ICT related equipment and establish of MIS & GIS and monitoring system	Preparation of bid document and procurement of supplier	DU	PMU	PMC
		Procurement of equipment	LCB	Supplier	PMC
(2)	Equipment and tools for horticulture mobile teams and PMU	Preparation of bid document and procurement of supplier	DU	PMU	PMC
		Procurement and delivery	LCB	Supplier	PMC

Attachment 7.5.1 Procurement Plan for Each Activity

Work Item		Procurement Method	Activity Executed by	Supported by	
3.2 Strengthening of PMU/DIU and HMT					
(1)	Recruitment of PMU/DIU staff (out-sourcing)	DU	DHFP	-	
(2)	Project management including planning and implementation	DU	PMU/DIU	PMC	
(3)	Preparation, monitoring, updating of annual action plan	DU	PMU/DIU	PMC	
(4)	Technical training to DIU and HMT				
	Training on planning production	DU	PMU	KVK/University/PMC	
	Training on post harvest and processing	DU	PMU	KVK/University/PMC	
	Training on quality control and marketing	DU	PMU	KVK/University/PMC	
	Training on irrigation management	DU	PMU	KVK/University/PMC	
3.3 Capacity Development for R&D					
(1)	Technical training to staff of nursery, training centres and labs, and	DU	Supplier, KVK, ICAR and university	PMU/PMC	
(2)	O&M training on facilities for government staff	DU	Supplier, KVK, ICAR and university	PMU/PMC	
3.4 Branding and Marketing Development					
(1)	Horticulture market research at major mega-cities	Pre-construction activities	DU	PMU	PMC
		Implementation	LCB	Service Provider	PMU/PMC
(2)	Branding promotion		DU	PMU/FPO	PMC
(3)	Food fairs and exhibitions		DU	PMU	PMC
(4)	Branding development and quality management	Preparation of bid document and procurement of Specialized Agency	DU	PMU	PMC
		Activity for Branding development and quality management	LCB	Service Provider	PMU/PMC
3.5 Exposure Visits					
(1)	Domestic training for PMU/DIU, FPOs, progressive farmers	DU	PMU/DIU	PMC	
(2)	Overseas training for PMU/DIU, FPOs, progressive farmers	DU	PMU	PMC	
3.6 Baseline Survey and Impact Assessment					
(1)	Conduct baseline survey	DU	PMU/DIU, Service provider	PMC	
(2)	Conduct mid-term survey	DU	PMU/DIU, Service provider	PMC	
(3)	Conduct endline survey	DU	PMU/DIU, Service provider	PMC	
4. Consulting Services					
(1)	Selection of Project Management Consultant (PMC)	ICB	DHFP		

Notes DU= Direct undertaking, LCB= Local Competitive Bidding, ICB= International Competitive Bidding

Attachment 7.6.1 Project Implementation Schedule

[illegible]

Attachment 7.7.1 O&M of Project Facilities

Work Item	Unit	Q'ty	Cost Share by State (%)	Ownership	O&M Entity	Guarantee Period	O&M Fund Source	Remarks
1. Area Expansion and Production								
1.2 Infrastructure Development								
(1) Water Source Facility (RWHP, Spring, Groundwater)	no.	to be confirmed	50%	Private	Community/Farmer	12 months	CDF and Charge	New Item
(2) Micro Irrigation								
Integrated package with drip irrigation	ha	1450	50%	Private	Farmer/Community	12 months	CDF and Charge	for fruits and vegetables in 4 districts
Integrated package with sprinkler irrigation	ha	460	50%	Private	Farmer/Community	12 months	CDF and Charge	for spices in 4 districts
(3) Ropeway	unit	4	50%	Private	Community/Farmer	12 months	CDF and Charge	One per each district (H=100m)
(4) Solar Fence for wild animal attack	km	500	50%	Private	Farmer	12 months	CDF and Charge	30% of beneficiary farmers
(5) Custom Hiring Unit	unit	16	40%	Private	FPO	12 months	CDF and BI	
1.3 R&D Support (pre-harvest)								
(1) Hi-tech Nursery in public and private sector								
Hi-tech Nursery (4 ha), Public Sector	no.	2	100%	Govt	UKDHFP	12 months	Govt	Pithoragarh (1) and Uttarkashi (Jarmola)
Hi-tech Nursery (4 ha), Private Sector	no.	2	40%	Private	Private Company	12 months	Private Company	Nainital (1) and Tehri (1)
(3) Integrated COEs								
Integrated COE for temperate fruits	unit	1	100%	Govt	UKDHFP/PPP	12 months	BI + Govt	Tehri (Govt. Garden Dhanolti)
Integrated COE for vegetables	unit	1	100%	Govt	UKDHFP/PPP	12 months	BI + Govt	Nainital (Govt. Garden Raingah)
Integrated COE for flowers	unit	1	100%	Govt	UKDHFP/PPP	12 months	BI + Govt	Nainital (Govt. Garden Gagar)
Upgrading of food science training centre	unit	1	100%	Govt	UKDHFP	12 months	Govt	Nainital (Ramnagar)
Bio control lab for INM	unit	1	100%	Govt	GBPUAT	12 months	BI	GBPUAT, Pantnagar
Leaf/ Tissue analysis lab for PM	unit	3	100%	Govt	GBPUAT	12 months	BI	GBPUAT, Pantnagar
2. Supply Chain Development								
2.1 Infrastructure Development								
(1) Post harvest and processing by FPOs								
Pack House with primary processing and packaging unit	unit	16	50%	Private	FPO	12 months	CDF and BI	Tehri, Nainital, Uttarkashi and Pithoragarh
Cold Storage Room (30MT)	unit	16	50%	Private	FPO	12 months	CDF and BI	Uttarkashi and Pithoragarh
Refrigerated Transport Vehicle	unit	16	50%	Private	FPO	12 months	CDF and BI	Tehri, Nainital, Uttarkashi and Pithoragarh
Outlet of Horticulture Products	unit	4	50%	Private	FPO	12 months	CDF and BI	- ditto - 250 sqm/unit
Basic Food Processing Unit	unit	2	50%	Private	FPO	12 months	CDF and BI	Tehri and Nainital
(2) Public market								
Rural markets, Apni Mandies, and Direct market	unit	16	55%	Govt	MC	12 months	MC	Tehri, Nainital, Uttarkashi and Pithoragarh
(3) Private marketing and processing								
CA Storage for Apples (1000 + 200 MT) at market level	unit	2	50%	Private	Private Company	12 months	Private Company	Uttarkashi and Pithoragarh
Cold Storage Room (30MT) at market level	unit	4	50%	Private	Private Company	12 months	Private Company	Tehri, Nainital, Uttarkashi and Pithoragarh
2.3 R&D Support (post-harvest)								
(1) Upgrading of post-harvest and food processing centres	unit	15	100%	Govt	UKDHFP	12 months	Govt	Uttarkashi and Pithoragarh

Notes: Govt: Government, MC: Market Committee, PPP: Public Private Partnership, BI: Business Income, CDF: Cluster Development Fund

Attachment for Chapter 8

Attachment 8.2.1 Project Cost Estimate

Work Item	Unit	Final Qty.	Unit Cost PPR 2014	Unit Cost HPCDP 2020	Unit Cost to be applied (million)	Assistance % by Project (JICA Loan)	% covered by beneficiaries	Final Amount (million)
1. Area Expansion and Production Enhancement								
1.1 Climate Change Adaptation								
(1) Survey on current situation (climate impacts/ climate adaptation measures)	no.	1	-	-	50.00	100%	0%	50.00
(2) Development and dissemination of proper farming techniques	no.							
(3) Development of varieties	no.							
							Sub total	50.00
1.2 Infrastructure Development								
(1) Water Source Facility for individuals	HH	1886	0.09	-	0.12	100%	0%	222.36
(2) Micro Irrigation (RWHP, Spring)								
Integrated package with drip irrigation	ha	1545	0.16	-	0.21	100%	0%	323.83
Integrated package with sprinkler irrigation	ha	545		-	0.13	100%	0%	70.85
(3) Farm Machinery Bank	unit	16	2	-	2.62	100%	0%	41.92
							Sub total	658.96
1.3 R&D Support (pre-harvest)								
(1) High-tech nursery								
Hi-Tech Nursery (4 ha), Public Sector	no.	2	10	-	13.10	100%	0%	26.20
(2) Planting materials (nursery)								
Import of planting materials (fruits)	no.	40,000	0.002	-	0.0026	100%	0%	104.80
Establishment of virus free mother block for fruits (from Domestic)	no.	1	2	-	2.62	100%	0%	2.62
Rejuvenation and replacement of senile orchards	ha	500	0.1	-	0.13	80%	20%	52.40
(3) Integrated COEs								
Integrated COE for Kiwifruit	unit	1	200	-	150.00	100%	0%	150.00
Integrated COE for off-season/ exotic vegetables	unit	1	200	-	150.00	100%	0%	150.00
Area Expansion Ultra High Density-Apple	ha	120	3.00	-	3.93	80%	20%	377.28
New Area expansion- Kiwi-Integrated package with drip and trails	ha	300	0.4	-	0.52	80%	20%	125.76
Area Expansion-Other Plantation fruits crop (Lilchi and Citrus)	ha	100	0.15	-	0.20	80%	20%	15.72
(4) Upgrading of food science training centre	unit	1	25	-	32.75	100%	0%	32.75
(5) Leaf/ Tissue analysis lab for IPM	unit	1	2.5	-	39.30	100%	0%	39.30
							Sub total	1,076.83
1.4 Provision of Farm Equipment and Materials								
(1) Equipment and materials for protected cultivation								
Poly house	sqm	90,000	0.001219	-	0.001597	80%	20%	114.98
Plastic mulching (fruits and vegetable crops)	ha	2,000	0.0368	-	0.048208	80%	20%	77.13
Anti hail net	sqm	1,500,000	0.000035	-	0.000046	60%	40%	41.27
(2) Planting materials (farmers)								
Planting material and cultivation of flowers under poly house	sqm	32,000	0.00061	-	0.000799	80%	20%	20.46
Planting material and cultivation of vegetable under poly house	sqm	58,000	0.00014	-	0.000183	80%	20%	8.51
Open Pollinated Vegetable Seeds (Peas, etc.)	ha	1,540	0.035	-	0.045850	80%	20%	56.49
Potato Seeding	ha	1,000	0.035	-	0.045850	80%	20%	36.68
Hybrid Vegetable Seeds (Tomato, etc)	ha	2,000	0.05	-	0.065500	80%	20%	104.80
Rhizomatic Spice Seeds (Ginger, Garlic, Turmeric)	ha	2,500	0.03	-	0.039300	80%	20%	78.60
Bulbous Flower Seeds (Lilium, Tulip, Carnation, Gerbera)	ha	100	0.15	-	0.196500	80%	20%	15.72
Aromatic Plant (Damask rose)	ha	100	0.1	-	0.131000	80%	20%	10.48
(3) Promotion of INM and IPM	ha	7775	0.004	-	0.005240	80%	20%	32.59
(4) Materials for livelihood improvement and nutrition improvement								
Mushroom: Production unit under natural condition (Button and Oyster), Private	unit	330	0.43	-	0.563300	80%	20%	148.71
Mushroom: Production of Ganoderma species, - Pilot basis (R&D), Private	unit	55	0.08	-	0.104800	80%	20%	4.61
Bee Keeping: Production unit under natural condition	unit	330	-	0.03733	0.04	80%	20%	10.56
							Sub total	761.58
1.5 Capacity Development for Farmers								
(1) Training on farm planning and management (SHEP)	LS	1			3.20	100%	0%	3.20
(2) Technical training on cultivation and post-harvest handling	LS	1			4.08	100%	0%	4.08
(3) Livelihood improvement								
Mushroom cultivation	LS	1			0.27	100%	0%	0.27
Bee Keeping	LS	1			0.27	100%	0%	0.27
(4) Nutrition improvement	LS	1			0.27	100%	0%	0.27
							Sub total	8.10
2. Supply Chain Development								
2.1 Infrastructure Development								
(1) Post harvest processing by FPO								
Pack House with primary processing and packaging unit	unit	16	5	-	6.550	80%	20%	83.84
Cold Storage Room (30MT) at field level	unit	16	1.5	-	1.965	80%	20%	25.15
Refrigerated Transport Vehicle	unit	16	2.6	-	3.406	80%	20%	43.60
Outlet of Horticulture Products	unit	2	3.5	-	4.585	100%	0%	9.17
Basic Food Processing Unit	unit	2	50	-	65.500	80%	20%	104.80
(2) Public market								
Rural markets, Apni Mandies, and Direct market	unit	8	2.5	-	3.275	100%	0%	26.20
(3) Private marketing and processing								
Cold Storage Room (30MT) at market level	unit	4	1.5	-	1.965	80%	20%	6.29
							Sub total	299.05
2.2 FPO Development								
(1) Employment of CBBO for promotion of FPOs	no.	4	-	-	10.00	100%	0%	40.00
(2) Cluster identification and baseline survey								
Orientation for CBBO engaged at the DIU level	LS	1			0.0028	100%	0%	0.00
(4) Community mobilisation and registration of FPOs								
(5) Organisational capacity building for FPOs	LS	1			1.66	100%	0%	1.66
(6) Business planning with marketing strategy								
(7) Implementation of business plan, Existing FPOs								
(7) Implementation of business plan, New FPOs								
(8) Technical training on post-harvest handling and processing	LS	1			2.18	100%	0%	2.18
(9) Corpus fund management	no.	16			1.00	100%	0%	16.00
							Sub total	59.83
2.3 R&D Support (post-harvest)								
(1) Upgrading of post-harvest and food processing centres	unit	8	5	-	6.550	100%	0%	52.40
							Sub total	52.40
2.4 Private Sector Collaboration Promotion								
(1) Matching FPOs with agribusiness companies	LS	1			30.00	100%	0%	30.00
(2) Facilitation of pilot business trial	LS	1			30.00	100%	0%	30.00
							Sub total	60.00
3. Institutional Development for Project Management								
3.1 Procurement of Equipment and Materials								
(1) ICT related equipment and establish of MIS & GIS and monitoring system	LS	1	-	-	37.28	100%	0%	37.28
(2) Equipment and tools for horticulture mobile teams and PMU								
HMT	unit	34	0.5	-	0.655	100%	0%	22.27
PMU	LS	1	-	-	105.000	100%	0%	105.00
							Sub total	164.55
3.2 Strengthening of PMU/DIU and HMT								
(1) Recruitment of PMU/DIU staff (out-sourcing)	LS	1	-	-	16.87	100%	0%	16.87
(2) Project management including planning and implementation	LS							
(3) Preparation, monitoring and updating of annual action plan	LS							
(4) Technical training to DIU and HMT	LS	1			4.66	100%	0%	4.66
							Sub total	21.53
3.3 Capacity Development for R&D								
(1) Technical training to staff of nursery, training centres and labs, and	LS	1			0.43	100%	0%	0.43
(2) O&M training on facilities to government staff								
							Sub total	0.43
3.4 Branding and Marketing Strategy								
(1) Horticulture market research at major mega-cities	no.	1	-	-	0.13	100%	0%	0.13
(2) Branding promotion	no.							
(3) Food fairs and exhibitions	no.	4		2.5	2.50	100%	0%	10.00
(4) Branding development and quality management	no.	1	45	-	58.950	100%	0%	58.95
							Sub total	69.08
3.5 Exposure Visits								
(1) Domestic training for PMU/DIU, FPOs, progressive farmers	no.	3	-	0.15	0.15	100%		0.45
(2) Overseas training for PMU/DIU, FPOs, progressive farmers	no.	2	-	3.50	3.50	100%		7.00
							Sub total	7.45
3.6 Baseline Survey and Impact Assessment								
(1) Conduct baseline survey	LS	1	-	2.00	2.00	100%		2.00
(2) Conduct mid-term survey	LS	1	-	2.00	2.00	100%		2.00
(3) Conduct endline survey	LS	1	-	3.50	3.50	100%		3.50
							Sub total	7.50
							Grand Total (INR)	3,297.28

Source: JICA Survey Team

Note: 1) Unit costs to be applied are calculated based on CPI of 2014 and 2020 disseminated by JICA in 2021, based on Preliminary Project Report. Index is 140.95 in 2014, 184.33 in 2020. Conversion rate from 2014 to 2020 is 1.31 calculated by CPI.
2) Several unit costs are applied from Preparatory Survey on Himachal Pradesh Crop Diversification Project Phase 2 (HPCDP 2), JICA, 2020
3) Target assumption for cost estimate is 16 Blocks x 200HH = 3200 HH.

1.4 Provision of Farm Equipment and Materials

Cost Breakdown for Rearing of honey bees

Investment on Tools and Equipment for an Apiary (size of 50 and 10 colonies)

No	Items	Rate per unit (Rs.)	Beekeeping	
			Stationary (for migratory)	
			Qty.	Amount (Rs.)
1	Langstroth beehive boxes (single)	1,125	50	56,250
2	Hive stand	100	50	5,000
3	Hive tool	20	2	40
4	Nuclues bee colonies with 5 frames	300/frame	50	75,000
5	Bee veil	50	2	100
6	Bee gloves	67/pair	2	134
7	Smoker	160	2	320
8	Swarm catcher	100	1	100
9	Uncapping knife	35	2	70
10	Honey uncapping trays	676	3	2,028
11	Honey extractor with 4 frames (hand operated)	2,000	1	2,000
12	Wax melting tank	300	1	300
13	Honey containers with 50 kg capacity	550	12	6,600
14	Stove	500	1	500
15	G.I. tub	500	1	500
16	Bucket	200	1	200
17	Ant protecting bowls	10	200	2,000
18	Apiary net	500	1	500
19	Comb foundation mill for wax sheet making	20,000	1	20,000
20	Miscellaneous (empty beehive boxes for addition of colonies, aari, hammer and unforeseen items)	-	-	15,000
21	Total fixed capital	-	-	186,642
22	Fixed capital/colony	-	-	3,733
23	Fixed capital/ 10 colony	-	-	37,330

Source: Preparatory Survey on Himachal Pradesh Crop Diversification Project Phase 2 (HPCDP2), JICA, 2020

2.2 FPO Development

(1) Employment of CBBO for promotion of FPOs

Table Indicative Financial Assistance to CBBO for Promotion of One FPO

(Unit: Rs. Lakh)

S.No	Items of Cost Component	1st year	2nd year	3rd year	4th year	5th year	Total
A	Baseline survey/ Diagnostic study	1.000	-	-	-	-	1.000
B	Mobilization of farmers, awareness programmes	0.370	0.370	0.370	0.370	0.370	1.850
C	CBBO man power						
(i)	Salary for professionals	1.800	1.980	2.178	2.396	2.635	10.989
(ii)	Salary for other staff	0.240	0.264	0.290	0.319	0.351	1.464
D	Travel cost	0.240	0.240	0.240	0.240	0.240	1.200
E	Administrative expenses						
(i)	Furniture and fixtures	0.020	-	-	-	-	0.020
(ii)	Office accommodation	0.120	0.120	0.130	0.130	0.140	0.640
(iii)	Utilities	0.070	0.070	0.075	0.080	0.080	0.375
F	Training and capacity building of FPOs						
(i)	Training to BoDs	0.450	0.450	0.450	0.450	0.450	2.250
(ii)	Training to CEOs	0.090	0.090	0.090	0.090	0.090	0.450
(iii)	Exposure visit	0.500	0.500	0.500	0.500	0.500	2.500
G	Sub total (A+B+C+D+E+F)	4.900	4.084	4.323	4.575	4.857	22.739
H	Professional charges	0.490	0.410	0.430	0.450	0.480	2.260
I	Grand total (G+H)	5.390	4.494	4.753	5.025	5.337	24.999
J	Grand total (rounded off)						25.000

Source: Advertisement for Empanelment of Cluster-Based Business Organization (CBBOs) for Implementation of Central Sector Scheme for Formation and Promotion of Farmers' Producer Organizations (FPOs)

[https://www.nabard.org/auth/writereaddata/tender/1911202309Annexure%20IV%20-%20Indicative%20financial%20support%20to%20CBBO for%20promotion%20of%20one%20FPO.pdf](https://www.nabard.org/auth/writereaddata/tender/1911202309Annexure%20IV%20-%20Indicative%20financial%20support%20to%20CBBO%20for%20promotion%20of%20one%20FPO.pdf)

Note: BoD: Board of directors of FPO, CEO: Chief Executive Officer

3.1 Procurement of Equipment and Materials							
SN	Items/Activities	Unit	Qty.	Unit Cost	Amount	Description	Remarks
3	Project Management						
3.1	Procurement of Equipment and Materials						
(1)	ICT related equipment and establish of MIS & GIS and monitoring						
1	PC (Laptop/Desktop)	Nos.	52	60,000	3,120,000	All staffs	1 PC per user for office work
2	Printer	Nos.	5	18,000	90,000	PMU, DIU	To be attached with PCs
3	Multi Function Printer (MFP) Centrised print station	Nos.	5	250,000	1,250,000	PMU, DIU	Common use Print, Scan, Copy
4	UPS	Nos.	5	4,000	20,000	PMU, DIU	
5	Camera	Nos.	10	50,000	500,000	each 2 for PMU, DIU	for documentation of Events/ meetings
6	Projector	Nos.	5	75,000	375,000	PMU, DIU	for presentation in meetings/workshops
7	Projector Screen	Nos.	5	68,000	340,000	PMU, DIU	for presentation in meetings/workshops
8	Audio System	Nos.	5	65,000	325,000	PMU, DIU	for meetings/events/workshops
9	Video Wall	Nos.	1	770,000	770,000	PMU	For conference hall
10	Digital Signage Board	Nos.	1	110,000	110,000	PMU	For highlighting the information and field activities
11	Tablet (Smart devices)	Nos.	12	22,000	264,000	each 3 for DIU	for live reporting & online data collection
12	Data Storage Device (external hard discs)	Nos.	5	5,000	25,000	PMU, DIU	Extrenal hard disks for data storage and transfer
13	Internet (Wide Area Network)	LS	5	150,000	750,000	PMU, DIU	Leased line/optical fiber line for SPMU & DPMUs
14	Eathernet (Local Area Network)	LS	5	100,000	500,000	PMU, DIU	for local connectivity and document sharing
15	PDF Software - Adobe Acrobat	Nos.	15	13,070	196,050	each 3 for PMU, DIU	creating and editing PDF documents
16	Documentation Software (Office)	Nos.	52	18,500	962,000	1 per PC (word, excel, powerpoint)	for document creation
17	Digital Weather System	Nos.	20	25,000	500,000	to be placed at selective location	for weather data collection
				Sub total	10,097,050		
	Procurement of Engineering Survey Equipements						
1	GPS (Hand held)	Nos.	15	35,000	525,000	3 per office	for field survey, data colletion
2	DGPS Set	Nos.	4	1,350,000	5,400,000	DIU	Field Survey
3	Total Station	Nos.	4	600,000	2,400,000	DIU	Field Survey
4	Auto level	Nos.	4	22,000	88,000	DIU	Field Survey
5	CAD Application	Nos.	5	150,000	750,000	1 per office	Survey data processing, designing of drawings
				Sub total	9,163,000		
	Establishment of GIS/MIS Cell (New)						
1	Workstation	Nos.	1	150,000	150,000	PMU	Processing of spatial data
2	Printer	Nos.	1	22,000	22,000	to be attached with WS	printing of documents
3	Plotter (A0 size)	Nos.	1	650,000	650,000	Large format printer	printing of engineering drawings, Maps
4	Scanner (A0 size)	Nos.	1	385,000	385,000	Large format scanner	Scanning of large size drawing and Maps
5	UPS	Nos.	1	11,844	11,844	DIU	power backup
6	Drone with lidar sensor	Nos.	1	429,153	-	PMU	for field survey, progress monitoring
7	Operating System	Nos.	1	9,500	9,500	PMU	base application for PC/WS
8	Document Processing Software	Nos.	1	25,499	25,499	1 per PC (word, excel, powerpoint)	for document creation
9	GIS Software	Nos.	1	1,157,165	1,157,165	1 per PC	Processing of Spatial data
10	PDF Software - Adobe Acrobat	Nos.	1	13,070	13,070	1 per PC	creating and editing PDF documents
11	Data Storage Device (external hard discs)	Nos.	1	10,000	10,000	PMU	Extrenal hard disks for data storage and transfer
				Sub total	2,434,078		
	Hiring of services for GIS survey, preparation of base spatial						
1	Preparation of spatial database layers (pre intervention)	No.	16	14,000	224,000	Base spatial data base of landuse, evlevation, slope, transport, drainage, agro-ecological zones, mandis etc.	to be prepared by outside agency
2	Geo Referencing of revenue maps	No.	16	5,000	80,000	control point survey, georeferencing of revenue maps, linking of revenue records	to be prepared by outside agency
				Sub total	304,000		
	Hiring of Services for Devepment of software application						
1	Development of Agro Information system	LS	1	2,000,000	2,000,000	Designing, Development, Customization & Maintenance	To be outsourced /Inhouse
2	Develoement of App for value chain and marketing of FPOs	Nos.	1	1,500,000	1,500,000	Designing, Development, Customization & Maintenance	To be outsourced /Inhouse
3	Website	Nos.	1	1,000,000	1,000,000	Digital presence, dissemination of information	To be outsourced /Inhouse
4	Coustomised application for Tablets	Nos.	1	800,000	800,000	Customization of web app and troubleshooting	For data collection, live reporting, communication
				Sub total	5,300,000		
	Capacity building of PMU staff on MIS/GIS , Aerial Monitoring and ICT environment						
	Capacity Building of PMU Staff (general training for all)						
	Bussiness process (Document creation and processing)Training	LS	2	300,000	600,000	Basic IT training to project staff	In house on -Job Training regarding Document creation, management
	Primery Data Collection Training	LS	2	600,000	1,200,000	Training for frontline staff to collect primary data	For frontline staff by Professional resource person (Class/field)
				Sub total	1,800,000		
	Capacity Building on Survey, Mapping and Monitoring						
	Field Survey using GPS/DGPS/TS/AL	LS	2	300,000	600,000	For Engineering staff and MIS/GIS operators	For Engineering personnel (Practical training in Batches)
	GIS Training-basic	LS	2	300,000	600,000	For Engineering staff and MIS/GIS operators	Institutional training
	GIS Training-Advance (related to agriculture application)	LS	4	300,000	1,200,000	Two weeks for MIS/GIS operators and DOA staff	On site Outreach Programme by Professional agency
	Remote sensing training-basic	LS	2	300,000	600,000	For Engineering staff and MIS/GIS operators	Institutional training
	Remote sensing training-digital image processing	LS	2	300,000	600,000	Two weeks for MIS/GIS operators and DHFP staff	Institutional training
	Refresher Training	LS	2	400,000	800,000	For Operators and DHFP staff	Institutional training
	Drone operation and data processing	LS	1	400,000	-	Drone operators	Institutional training
	Monitoring using Drone/Satellite image training	LS	1	500,000	-	Two weeks for MIS/GIS operators and DOA staff	On site Outreach Programme by Porfessional agency
				Sub total	4,400,000		
	Hiring of Resources Persons (additional)						
	MIS & GIS Technians	Nos.	1	3,780,000	3,780,000	PMU	Rs 35 thousand per Month
				Sub total	3,780,000		
				Grand total	37,278,128		
(2)	Equipment and tools for horticulture mobile teams and PMU	Unit	Quantity	Unit Cost	Amount	Description	Remarks
	HMT	unit	129	500,000	64,500,000		
	PMU						
	(1) Rented accommodation for office space for 1 PMU	month	84	100,000	8,400,000		
	(2) Rented accommodation for office space for 4 DIU	month	336	100,000	33,600,000		
	(3) Furniture & office-equipments, (New PMUs)	year	7	1,000,000	7,000,000		
	(4) Transport facilities at PMU	LS	1	53,000,000	53,000,000	Procurement of 2 vehicles (PMU) and 4 vehicles (4 DIUs), Hired vehicle (4 DIUs, 2 no./month/DIU x 7 years), 20 no Motor cycles, Scooties 20 No	
	(5) Project Operational expenses	LS	1	3,000,000	3,000,000		
				Sub total	105,000,000		

Source: JICA Survey Team. Unit costs are applied from Preparatory Survey on Himachap Pradesh Crop Diversification Project Phase 2 (HPCDP2), JICA, 2020

3.2 (1) Recruitment of PMU/DIU staff (out-sourcing)

Tentative Salary Estimate of External Source staff (Egible) With 2% (Two percent) annual increase every year				
Sr no.	Name of PMU	Total Units	Total Staff	Years
1	PMU	1	16	7
2	DIU	4	36	7
	Total	5	52	
				Total Salary
				6,460,411
				10,407,956
				16,868,367

Unit cost of Strengthening of PMU												
Recruitment of PMU Staff (Out Source)												
Sr.No.	Name of Post	Monthly Basic Salary	Per Unit Posts	First Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	Total Amount	Total Units
1	Horticulturist	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
2	Food Processing and Quality Control	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
3	Barnding and Marketing	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
4	Financial Management	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
5	Monitoring and Evaluation	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
6	Tender and Procurement	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
7	Infrastructure Development	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
8	Institution Development	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
9	Livelihood Improvement	Rs. 80,000	1	80,000	81,600	83,232	84,897	86,595	88,327	90,094	594,745	1
10	Accountant	Rs. 26,000	1	26,000	26,520	27,050	27,591	28,143	28,706	29,280	193,290	1
11	Computer Assistant	Rs. 22,000	1	22,000	22,440	22,889	23,347	23,814	24,290	24,776	163,556	1
12	Drivers	Rs. 20,000	2	20,000	20,400	20,808	21,224	21,648	22,081	22,523	148,684	2
13	Office Attendant	Rs. 15,000	1	15,000	15,300	15,606	15,918	16,236	16,561	16,892	111,513	1
14	Office upkeep	Rs. 14,000	1	14,000	14,280	14,566	14,857	15,154	15,457	15,766	104,080	1
15	GIS/MIS Operator	Rs. 32,000	1	32,000	32,640	33,293	33,959	34,638	35,331	36,038	237,899	1
	Grand Total		16	849,000	865,980	883,300	900,969	918,988	937,369	956,121	6,311,727	16
												6,460,411

Unit cost of Strengthening of DIU												
Recruitment of DPMUsStaff (Out Source)												
Sr.No.	Name of Post	Monthly Basic Salary	Per Unit Posts	First Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	Total Amount	Total Units
1	Project Operation and Management	Rs. 50,000	1	50,000	51,000	52,020	53,060	54,121	55,203	56,307	371,711	4
2	Horticulture Extension Services	Rs. 50,000	1	50,000	51,000	52,020	53,060	54,121	55,203	56,307	371,711	4
3	Marketing and Quality Control	Rs. 50,000	1	50,000	51,000	52,020	53,060	54,121	55,203	56,307	371,711	4
4	Institution and FPO Development	Rs. 50,000	1	50,000	51,000	52,020	53,060	54,121	55,203	56,307	371,711	4
5	Infrastructure Engineer	Rs. 50,000	1	50,000	51,000	52,020	53,060	54,121	55,203	56,307	371,711	4
6	Office Manager cum Accountant	Rs. 32,000	1	32,000	32,640	33,293	33,959	34,638	35,331	36,038	237,899	4
7	Computer Assistant	Rs. 22,000	1	22,000	22,440	22,889	23,347	23,814	24,290	24,776	163,556	4
8	GIS/MIS Operator	Rs. 32,000	1	32,000	32,640	33,293	33,959	34,638	35,331	36,038	237,899	4
9	Office upkeep	Rs. 14,000	1	14,000	14,280	14,566	14,857	15,154	15,457	15,766	104,080	4
	Grand Total		9	350,000	357,000	364,141	371,422	378,849	386,424	394,153		36
												10,407,956

Note: JICA Survey Team. Source of salary rate is referred from Preparatory Survey on HPCDP-2, 2020

Cost for Capacity Development, Project Management (1.5, 2.2, 3.2, 3.3, 3.4, 3.5, 3.6)											
SN	Items/Activities	Unit	District/FPO	Time/year	Year	Programme	Qty.	Unit Cost	Amount	Description	Remarks
1.5 Capacity Development for Farmers											
(1)	Training on farm planning and management (SHEP)	no.		16	2	5	1	160	3,200,000	2 days for 1 day visit to the market and 1 day workshop for action planning	10 farmers from each FPO Training for each FPO
(2)	Technical training on cultivation and post-harvest handling								4,080,000	Twice a year	
	Production	no.		16	2	4	1	128	3,264,000	3 days Twice a year (prior to each cropping season) Training can be scheduled intermittently.	10 farmers from each FPO Training for each FPO
	Irrigation	no.		4	2	4	1	32	544,000	2 days Twice a year (prior to each cropping season) Training can be scheduled intermittently.	10 farmers from each FPO Training for each district
	Post harvest handling	no.		4	2	4	1	32	272,000	1 day Twice a year (prior to each cropping season) Training can be scheduled intermittently.	10 farmers from each FPO Training for each district
(4)	Livelihood improvement						1		544,000		
	Mushroom cultivation	no.		4	2	4	1	32	272,000	1 day Twice a year (prior to each cropping season) Training can be scheduled intermittently.	10 farmers from each FPO Training for each district
	Bee Keeping	no.		4	2	4	1	32	272,000	1 day Twice a year (prior to each cropping season) Training can be scheduled intermittently.	10 farmers from each FPO Training for each district
(5)	Nutrition improvement	no.		4	2	4	1	32	272,000	1 day Twice a year (prior to each cropping season) Training can be scheduled intermittently.	10 farmers from each FPO Training for each district
2.2 FPO Development											
(3)	Orientation for CBBO engaged at the DIU level	no.		4	1	1	1	4	2,800	1 day after employment of each CBBO	2 persons from each CBBO district.
(5)	Organisational capacity building for FPOs	no.		16	1	3	1	48	34,500	5 days training per year Training can be scheduled intermittently.	10 persons from each FPO
(8)	Technical training on post-harvest handling and processing	no.		16	2	4	1	128	2,176,000	2 days, twice a year (prior to each cropping season) Training can be scheduled intermittently.	10 persons from each FPO
3.2 Strengthening of PMU/DIU and HMT											
(4)	Technical training to DIU and HMT										
	Farm planning (SHEP) and management (GAP)	no.		4	2	5	1	40	8,500	1 day, 2 times a year Training can be scheduled intermittently.	10 persons from each DIU and HMT
	Soil improvement	no.		4	2	5	1	40	6,750	1 day, 2 times a year Training can be scheduled intermittently.	5 persons from each DIU and HMT
	Agriculture materials	no.		4	2	5	1	40	6,750	1 day, 2 times a year Training can be scheduled intermittently.	5 persons from each DIU and HMT
	Agri-chemicals and insect/pest management	no.		4	2	5	1	40	6,750	1 day, 2 times a year Training can be scheduled intermittently.	5 persons from each DIU and HMT
	Horticulture production (planting materials)	no.		4	3	5	1	60	6,750	1 day, 3 times a year Training can be scheduled intermittently.	5 persons from each DIU and HMT
	Horticulture production (technical 4 programmes)	no.		4	3	5	4	240	6,750	1 day, 3 times a year Training can be scheduled intermittently.	5 persons from each DIU and HMT
	Post-harvest handling (technical 3 programmes)	no.		4	3	5	3	180	6,750	1 day, 3 times a year Training can be scheduled intermittently.	5 persons from each DIU and HMT
	Irrigation management	no.		4	2	5	1	40	6,750	1 day, 2 times a year Training can be scheduled intermittently.	5 persons from each DIU and HMT
3.3 Capacity Development for R&D											
(1)	Technical training to staff of nursery, training centres and labs	no.		-	5	10	1	50	8,500	1 day for 1 facility, twice a year = 10 times a year Training can be scheduled intermittently.	10 persons from 5 facilities: nursery, COE, food science training center, postharvest and processing training center, bio control lab/trisue lab (unassisted)
3.4 Branding and Marketing Strategy											
(2)	Food fairs and exhibitions	no.		-	1	4	-	4	2,500,000	1 time per year	
3.5 Exposure Visits											
(1)	Domestic training for PMU/DIU, FPOs, progressive farmers	no.		-	1	3	1	3	1,50,200	1 time per year	around 10 persons per exposure visit
(2)	Overseas training for PMU/DIU, FPOs, progressive farmers	no.		-	1	2	1	2	3,500,000	1 time per year	around 10 persons per exposure visit
3.6 Baseline Survey and Impact Assessment											
(1)	Conduct baseline survey	no.		-	-	-	-	1	2,000,000	1 time for the Project	
(2)	Conduct mid-term survey	no.		-	-	-	-	1	2,000,000	1 time for the Project	
(3)	Conduct endline survey	no.		-	-	-	-	1	3,500,000	1 time for the Project	
Source: JICA Survey Team											
1) Attachment Breakdown of Training Cost for Capacity Development											
2) Preparatory Survey on Himachal Pradesh Crop Diversification Project Phase 2 (HPCDP2), JICA, 2020											

Attachment Breakdown of Training Cost for Capacity Development

1 day training for 5 persons

Particular	Unit	No	Rate (Rs.)	Days	Amount (Rs.)
Food and snacks for participants	Persons	5	200	1	1,000
Learning material including paper, stationery	Persons	5	150	1	750
Professional fee to Resource Persons	MD	1	3,000	1	3,000
Venue	LS	1	2,000	1	2,000
Total					6,750

1 day training for 10 persons

Particular	Unit	No	Rate (Rs.)	Days	Amount (Rs.)
Food and snacks for participants	Persons	10	200	1	2,000
Learning material including paper, stationery	Persons	10	150	1	1,500
Professional fee to Resource Persons	MD	1	3,000	1	3,000
Venue	LS	1	2,000	1	2,000
Total					8,500

1 day training for 2 persons

Particular	Unit	No	Rate (Rs.)	Days	Amount (Rs.)
Food and snacks for participants	Persons	2	200	1	400
Learning material including paper, stationery	Persons	2	150	1	300
Total					700

2 days training with travel

Particular	Unit	No	Rate (Rs.)	Days	Amount (Rs.)
Food and snacks for participants	Persons	10	200	2	4,000
Learning material including paper, stationery	Persons	10	150	2	3,000
Venue	LS	1	2,000	2	4,000
Professional fee to Resource Persons	MD	1	3,000	2	6,000
Travel and Conveyance to Participants	Persons	10	300	1	3,000
Total					20,000

2 days training without travel

Particular	Unit	No	Rate (Rs.)	Days	Amount (Rs.)
Food and snacks for participants	Persons	10	200	2	4,000
Learning material including paper, stationery	Persons	10	150	2	3,000
Venue	LS	1	2,000	2	4,000
Professional fee to Resource Persons	MD	1	3,000	2	6,000
Total					17,000

3 days training without travel

Particular	Unit	No	Rate (Rs.)	Days	Amount (Rs.)
Food and snacks for participants	Persons	10	200	3	6,000
Learning material including paper, stationery	Persons	10	150	3	4,500
Venue	LS	1	2,000	3	6,000
Professional fee to Resource Persons	MD	1	3,000	3	9,000
Total					25,500

Table-2 5 days training without travel

Particular	Unit	No	Rate (Rs.)	Days	Amount (Rs.)
Food and snacks for participants	Persons	10	200	5	10,000
Learning material including paper, stationery	Persons	10	150	5	7,500
Venue	LS	1	2,000	5	10,000
Folder and stationery	Nos.	10	200	1	2,000
Documentation and Reporting	Trainings	1	1,000	5	5,000
Total					34,500

Table-7 Exposure visit (domestic)

Particular	Unit	No	Rate (Rs.)	Days	Amount (Rs.)
Travel and Conveyance for Participants**	Persons	12	8,250	1	99,000
** 10 Participants and 2 Escorts					
Boarding and lodging for participants	Persons	12	1,200	2	28,800
Professional fee to Resource Persons	MD	3	3,000	2	18,000
Folder and stationery	Nos.	12	200	1	2,400
Documentation and Reporting	Trainings	1	1,000	2	2,000
Total					150,200

Source: JICA Survey Team

Attachment for Chapter 9

Attachment 9.3.1 Economic Evaluation

Crop Budget - Fruits

1. Financial Price

Crop: Sweet Orange

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	19,401	4.5	87,303	17.7	343,390
II PRODUCTION COST	Rupees			25,288		62,730
1 Expenditure on planting material (Departmental rate)	ha	1,688	1	1,688	1.8	3,029
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	15,600	1	15,600	3.3	51,032
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	5,000	1	5,000	1.1	5,668
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	3,000	1	3,000	1.0	3,000
III NET RETURN (= Gross return - production cost)	Rupees			62,015		280,661

2. Economic Price

Crop: Sweet Orange

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	18,819	4.5	84,684	17.7	333,089
II PRODUCTION COST	Rupees			42,637		112,388
1 Expenditure on planting material (Departmental rate)	ha	1,637	1	1,637	1.8	2,939
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	29,640	1	29,640	3.3	96,961
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	8,450	1	8,450	1.1	9,579
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	2,910	1	2,910	1.0	2,910
III NET RETURN (= Gross return - production cost)	Rupees			42,047		220,700

Applied CFs
1/ 0.97

1/ 0.97

3/ 1.90

4/ 1.69

1/ 0.97

Crop: Apple

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	41,613	2.0	83,225	8.2	341,224
II PRODUCTION COST	Rupees			28,372		95,595
1 Expenditure on planting material (Departmental rate)	ha	6,612	1	6,612	6.7	44,300
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	14,200	1	14,200	2.8	40,369
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	4,560	1	4,560	1.0	4,368
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	3,000	1	3,000	2.2	6,558
III NET RETURN (= Gross return - production cost)	Rupees			54,853		245,629

Crop: Apple

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	40,364	2.0	80,729	8.2	330,988
II PRODUCTION COST	Rupees			44,010		133,416
1 Expenditure on planting material (Departmental rate)	ha	6,414	1	6,414	6.7	42,971
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,980	1	26,980	2.8	76,702
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	7,706	1	7,706	1.0	7,381
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	2,910	1	2,910	2.2	6,361
III NET RETURN (= Gross return - production cost)	Rupees			36,719		197,572

Applied CFs
1/ 0.97

1/ 0.97

3/ 1.90

4/ 1.69

1/ 0.97

Crop: Peach

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	14,031	9.6	134,698	14.4	202,046
II PRODUCTION COST	Rupees			27,117		57,443
1 Expenditure on planting material (Departmental rate)	ha	5,397	1	5,397	4.8	25,822
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	14,000	1	14,000	1.6	22,510
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	4,720	1	4,720	1.6	7,510
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	3,000	1	3,000	0.5	1,601
III NET RETURN (= Gross return - production cost)	Rupees			107,581		144,603

Crop: Peach

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	13,610	9.6	130,657	14.4	195,985
II PRODUCTION COST	Rupees			42,722		82,062
1 Expenditure on planting material (Departmental rate)	ha	5,235	1	5,235	4.8	25,048
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,600	1	26,600	1.6	42,769
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	7,977	1	7,977	1.6	12,692
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	2,910	1	2,910	0.5	1,553
III NET RETURN (= Gross return - production cost)	Rupees			87,935		113,923

Applied CFs
1/ 0.97

1/ 0.97

3/ 1.90

4/ 1.69

1/ 0.97

Attachment 9.3.1 Economic Evaluation

Crop: Litch

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	41,452	4.1	169,952	9.9	410,372
II PRODUCTION COST	Rupees			29,104		44,149
1 Expenditure on planting material (Departmental rate)	ha	1,504	1	1,504	2.8	4,189
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	18,450	1	18,450	1.4	25,900
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	6,150	1	6,150	1.5	9,060
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	3,000	1	3,000	1.7	5,000
III NET RETURN (= Gross return - production cost)	Rupees			140,848		366,223

Crop: Litch

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	40,208	4.1	164,853	9.9	398,060
II PRODUCTION COST	Rupees			49,817		73,435
1 Expenditure on planting material (Departmental rate)	ha	1,459	1	1,459	2.8	4,063
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	35,055	1	35,055	1.4	49,210
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	10,394	1	10,394	1.5	15,311
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	2,910	1	2,910	1.7	4,850
III NET RETURN (= Gross return - production cost)	Rupees			115,036		324,626

Applied
CFs

1/ 0.97

3/ 1.90

4/ 1.69

1/ 0.97

Crop: Plum

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	14,031	3.3	46,302	5.5	77,171
II PRODUCTION COST	Rupees			27,117		57,443
1 Expenditure on planting material (Departmental rate)	ha	5,397	1	5,397	4.8	25,822
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	14,000	1	14,000	1.6	22,510
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	4,720	1	4,720	1.6	7,510
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	3,000	1	3,000	0.5	1,601
III NET RETURN (= Gross return - production cost)	Rupees			19,185		19,727

Crop: Plum

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	13,610	3.3	44,913	5.5	74,855
II PRODUCTION COST	Rupees			42,722		82,062
1 Expenditure on planting material (Departmental rate)	ha	5,235	1	5,235	4.8	25,048
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,600	1	26,600	1.6	42,769
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	7,977	1	7,977	1.6	12,692
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	2,910	1	2,910	0.5	1,553
III NET RETURN (= Gross return - production cost)	Rupees			2,191		-7,206

Applied
CFs

1/ 0.97

1/ 0.97

3/ 1.90

4/ 1.69

1/ 0.97

Crop: Walnut

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	14,031	0.5	7,016	3.9	54,721
II PRODUCTION COST	Rupees			18,390		45,567
1 Expenditure on planting material (Departmental rate)	ha	5,640	1	5,640	2.8	15,792
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	7,350	1	7,350	2.9	21,315
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	2,400	1	2,400	2.9	6,960
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	3,000	1	3,000	0.5	1,500
III NET RETURN (= Gross return - production cost)	Rupees			-11,375		9,154

Crop: Walnut

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	13,610	0.5	6,805	3.9	53,079
II PRODUCTION COST	Rupees			26,402		69,034
1 Expenditure on planting material (Departmental rate)	ha	5,471	1	5,471	2.8	15,318
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	13,965	1	13,965	2.9	40,499
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	4,056	1	4,056	2.9	11,762
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	2,910	1	2,910	0.5	1,455
III NET RETURN (= Gross return - production cost)	Rupees			-19,597		-15,955

Applied
CFs

1/ 0.97

1/ 0.97

3/ 1.90

4/ 1.69

1/ 0.97

Attachment 9.3.1 Economic Evaluation

Crop: Kiwifruit

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	41,613	2.4	99,871	5.9	245,515
II PRODUCTION COST	Rupees			28,372		95,747
1 Expenditure on planting material (Departmental rate)	ha	6,612	1	6,612	6.7	44,452
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	14,200	1	14,200	2.8	40,369
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	4,560	1	4,560	1.0	4,368
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	3,000	1	3,000	2.2	6,558
III NET RETURN (= Gross return - production cost)	Rupees			71,499		149,768

Crop: Kiwifruit

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	40,364	2.4	96,874	5.9	238,150
II PRODUCTION COST	Rupees			44,010		133,563
1 Expenditure on planting material (Departmental rate)	ha	6,414	1	6,414	6.7	43,118
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,980	1	26,980	2.8	76,702
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	7,706	1	7,706	1.0	7,381
4 Expenditure on Pit-making, filling, irrigation, tree-guard (constructed from locally available material or bamboo), organic fencing, weeding etc.	ha	2,910	1	2,910	2.2	6,361
III NET RETURN (= Gross return - production cost)	Rupees			52,864		104,587

Applied
CFs

1/ 0.97

3/ 1.90

4/ 1.69

1/ 0.97

Source: JICA Survey Team based on Agmarknet, <https://www.agrifarming.in/>, <https://www.tandfonline.com/doi/full/10.1080/15538362.2021.1926393>, Preparatory Survey on Himachal Pradesh Crop Diversification Project Phase-2, 2020

Remark: Irrigation cost is covered in O&M cost. Labour cost is included in each expenditure.

Conversion Factors (CFs):

1/Standard CF = 0.97

2/Shadow Wage Rate = 1.00

3/CF (fertilizer) = 1.90

4/CF (pesticide) = 1.69

Attachment 9.3.1 Economic Evaluation

Crop Budget - Vegetables

1. Financial Price

Crop: Tomato

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	13,058	8.5	110,990	25.0	326,441
II PRODUCTION COST	Rupees			50,125		145,955
A Material						
1 Expenditure on planting material (Departmental rate)	ha	15000	1	15,000	2.9	44,092
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	13750	1	13,750	2.9	39,875
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	3250	1	3,250	2.9	9,425
Sub-Total (A)				32,000		93,392
B Labor						
1 Preparation of fields by plowing done twice	ha	3500	1	3,500	2.9	10,150
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2925	1	2,925	2.9	8,483
3 Plantation expenditure (20 labours)	ha	3900	1	3,900	2.9	11,310
4 Irrigation expenditure (10 labours)	ha	1950	1	1,950	2.9	5,655
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5850	1	5,850	2.9	16,965
Sub-Total (C)				18,125		52,563
III NET RETURN (= Gross return - production cost)	Rupees			60,865		180,486

Crop: Pea

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	17,203	7.1	122,138	12.0	206,431
II PRODUCTION COST	Rupees			50,125		85,213
A Material						
1 Expenditure on planting material (Departmental rate)	ha	15000	1	15,000	1.7	25,500
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	13750	1	13,750	1.7	23,375
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	3250	1	3,250	1.7	5,525
Sub-Total (A)				32,000		54,400
B Labor						
1 Preparation of fields by plowing done twice	ha	3500	1	3,500	1.7	5,950
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2925	1	2,925	1.7	4,973
3 Plantation expenditure (20 labours)	ha	3900	1	3,900	1.7	6,630
4 Irrigation expenditure (10 labours)	ha	1950	1	1,950	1.7	3,315
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5850	1	5,850	1.7	9,945
Sub-Total (C)				18,125		30,813
III NET RETURN (= Gross return - production cost)	Rupees			72,013		121,218

2. Economic Price

Crop: Tomato

Crop: Tomato							
Component	Unit	Unit Price	Without Project		With Project		Applied CFs
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	
I GROSS RETURN (= Production value x unit yield)	ton	12,666	8.5	107,660	25.0	316,648	1/ 0.97
II PRODUCTION COST	Rupees			64,293		187,023	
A Material							
1 Expenditure on planting material (Departmental rate)	ha	14,550	1	14,550	2.9	42,770	1/ 0.97
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,125	1	26,125	2.9	75,763	3/ 1.90
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	5,493	1	5,493	2.9	15,928	4/ 1.69
Sub-Total (A)				46,168		134,460	
B Labor							
1 Preparation of fields by plowing done twice	ha	3,500	1	3,500	2.9	10,150	2/ 1.00
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,925	1	2,925	2.9	8,483	2/ 1.00
3 Plantation expenditure (20 labours)	ha	3,900	1	3,900	2.9	11,310	2/ 1.00
4 Irrigation expenditure (10 labours)	ha	1,950	1	1,950	2.9	5,655	2/ 1.00
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,850	1	5,850	2.9	16,965	2/ 1.00
Sub-Total (C)				18,125		52,563	
III NET RETURN (= Gross return - production cost)	Rupees			43,368		129,625	

Crop: Pea

Crop: Pea		Unit	Unit Price	Without Project		With Project		Applied CFs
Component				Rainfed		Irrigated		
				Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	
I	GROSS RETURN (= Production value x unit yield)	ton	16,686	7.1	118,474	12.0	200,238	1/ 0.97
II	PRODUCTION COST	Rupees			64,293		109,297	
	A Material							
	1 Expenditure on planting material (Departmental rate)	ha	14,550	1	14,550	1.7	24,735	1/ 0.97
	2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,125	1	26,125	1.7	44,413	3/ 1.90
	3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	5,493	1	5,493	1.7	9,337	4/ 1.69
	Sub-Total (A)				46,168		78,485	
	B Labor							
	1 Preparation of fields by plowing done twice	ha	3,500	1	3,500	1.7	5,950	2/ 1.00
	2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,925	1	2,925	1.7	4,973	2/ 1.00
	3 Plantation expenditure (20 labours)	ha	3,900	1	3,900	1.7	6,630	2/ 1.00
	4 Irrigation expenditure (10 labours)	ha	1,950	1	1,950	1.7	3,315	2/ 1.00
	5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,850	1	5,850	1.7	9,945	2/ 1.00
	Sub-Total (C)				18,125		30,813	
III	NET RETURN (= Gross return - production cost)	Rupees			54,182		90,941	

Attachment 9.3.1 Economic Evaluation

Crop: Potato

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	8,553	15.2	130,001	22.3	190,725
II PRODUCTION COST	Rupees			50,125		75,188
A Material						
1 Expenditure on planting material (Departmental rate)	ha	15000	1	15,000	1.5	22,500
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	13750	1	13,750	1.5	20,625
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	3250	1	3,250	1.5	4,875
Sub-Total (A)				32,000		48,000
B Labor						
1 Preparation of fields by plowing done twice	ha	3500	1	3,500	1.5	5,250
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2925	1	2,925	1.5	4,388
3 Plantation expenditure (20 labours)	ha	3900	1	3,900	1.5	5,850
4 Irrigation expenditure (10 labours)	ha	1950	1	1,950	1.5	2,925
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5850	1	5,850	1.5	8,775
Sub-Total (C)				18,125		27,188
III NET RETURN (= Gross return - production cost)	Rupees			79,876		115,538

Crop: Potato

Crop: Potato							
Component	Unit	Unit Price	Without Project		With Project		Applied CFs
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	
I GROSS RETURN (= Production value x unit yield)	ton	8,296	15.2	126,101	22.3	185,004	1/ 0.97
II PRODUCTION COST	Rupees			64,293		96,439	
A Material							
1 Expenditure on planting material (Departmental rate)	ha	14,550	1	14,550	1.5	21,825	1/ 0.97
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,125	1	26,125	1.5	39,188	3/ 1.90
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	5,493	1	5,493	1.5	8,239	4/ 1.69
Sub-Total (A)				46,168		69,251	
B Labor							
1 Preparation of fields by plowing done twice	ha	3,500	1	3,500	1.5	5,250	2/ 1.00
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,925	1	2,925	1.5	4,388	2/ 1.00
3 Plantation expenditure (20 labours)	ha	3,900	1	3,900	1.5	5,850	2/ 1.00
4 Irrigation expenditure (10 labours)	ha	1,950	1	1,950	1.5	2,925	2/ 1.00
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,850	1	5,850	1.5	8,775	2/ 1.00
Sub-Total (C)				18,125		27,188	
III NET RETURN (= Gross return - production cost)	Rupees			61,809		88,565	

Crop: Cabbage

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed		Irrigated	
			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	11,000	9.3	102,300	23.5	258,500
II PRODUCTION COST	Rupees			59,600		98,780
A Material						
1 Seed / Seedlings	gr	39	200	7,800	200	7,800
2 Manure	ton	1500	1	1,500	4	6,000
3 Fertilizers	kg	8	280	2,240	300	2,400
4 Pesticides / Chemicals	litter	300	1	300	3	900
Sub-Total (A)				11,840		17,100
B Labor						
1 Family labor	Person-day	330	100	33,000	180	59,400
2 Hired labor	Person-day	330	15	4,950	20	6,600
3 Bullock labor	Animal-day	650	8	5,200	10	6,500
Sub-Total (B)				43,150		72,500
C Others						
1 Transport for harvests	L.S.	200	9.3	1,860	23.5	4,700
2 Others	5%			2,750		4,480
Sub-Total (C)				4,610		9,180
III NET RETURN (= Gross return - production cost)	Rupees			42,701		159,720

Crop: Cabbage

Crop: Cabbage		Unit	Unit Price	Without Project		With Project		Applied CFs
Component				Rainfed		Irrigated		
				Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	
I	GROSS RETURN (= Production value x unit yield)	ton	10,670	9.3	99,231	23.5	250,745	1/ 0.97
II	PRODUCTION COST	Rupees			61,585		101,124	
	A Material							
	1 Seed / Seedlings	gr	38	200	7,566	200	7,566	1/ 0.97
	2 Manure	ton	1,455	1	1,455	4	5,820	1/ 0.97
	3 Fertilizers	kg	15	280	4,256	300	4,560	3/ 1.90
	4 Pesticides / Chemicals	litter	507	1	507	3	1,521	4/ 1.69
	Sub-Total (A)				13,784		19,467	
	B Labor							
	1 Family labor	Person-day	330	100	33,000	180	59,400	2/ 1.00
	2 Hired labor	Person-day	330	15	4,950	20	6,600	2/ 1.00
	3 Bullock labor	Animal-day	650	8	5,200	10	6,500	2/ 1.00
	Sub-Total (B)				43,150		72,500	
	C Others							
	1 Transport for harvests	L.S.	194	9.3	1,804	23.5	4,559	1/ 0.97
	2 Others	5%			2,847		4,598	
	Sub-Total (C)				4,651		9,157	
III	NET RETURN (=Gross return - production cost)	Rupees			37,646		149,621	

Source: Office of the Director, Horticulture Mission, Rajkiya Udyan, Circuit House, Dehradun

Remark: Irrigation cost is covered in O&M cost. Cabbage cost is applied from preparatory survey on HPCDP 2020.

Conversion Factors (CFs):

1/Standard CF =	0.97
2/Shadow Wage Rate =	1.00
3/CF (fertilizer) =	1.90
4/CF (pesticide) =	1.69

Attachment 9.3.1 Economic Evaluation

Crop Budget - Spices

1. Financial Price

Crop: **Garlic**

Component		Unit	Unit Price	Without Project		With Project	
				Rainfed		Irrigated	
				Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I	GROSS RETURN (= Production value x unit yield)	ton	33,381	4.0	133,524	6.4	213,638
II	PRODUCTION COST	Rupees			50,125		80,200
	A Per hectar norm						
	1 Expenditure on planting material (Departmental rate)	ha	15,000	1	15,000	1.6	24,000
	2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	13,750	1	13,750	1.6	22,000
	3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	3,250	1	3,250	1.6	5,200
	Sub-Total (B)				32,000		51,200
	B Labor						
	1 Preparation of fields by plowing done twice	ha	3,500	1	3,500	1.6	5,600
	2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,925	1	2,925	1.6	4,680
	3 Plantation expenditure (20 labours)	ha	3,900	1	3,900	1.6	6,240
	4 Irrigation expenditure (10 labours)	ha	1,950	1	1,950	1.6	3,120
	5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,850	1	5,850	1.6	9,360
	Sub-Total (B)				18,125		29,000
III	NET RETURN (= Gross return - production cost)	Rupees			83,399		133,438

2. Economic Price

Crop: **Garlic**

Component	Unit	Unit Price	Without Project		With Project		Applied CFs
			Rainfed	Irrigated	Rainfed	Irrigated	
Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	32,380	4.0	129,518	6.4	207,229	1/ 0.97
II PRODUCTION COST	Rupees			63,749		101,998	
A Per hectare norm							
1 Expenditure on planting material (Departmental rate)	ha	14,550	1	14,550	1.6	23,280	1/ 0.97
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,125	1	26,125	1.6	41,800	3/ 1.90
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	5,493	1	5,493	1.6	8,788	4/ 1.69
Sub-Total (B)				46,168		73,868	
B Labor							
1 Preparation of fields by plowing done twice	ha	3,395	1	3,395	1.6	5,432	1/ 0.97
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,837	1	2,837	1.6	4,540	1/ 0.97
3 Plantation expenditure (20 labours)	ha	3,783	1	3,783	1.6	6,053	1/ 0.97
4 Irrigation expenditure (10 labours)	ha	1,892	1	1,892	1.6	3,026	1/ 0.97
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,675	1	5,675	1.6	9,079	1/ 0.97
Sub-Total (B)				17,581		28,130	
III NET RETURN (= Gross return - production cost)	Rupees			65,769		105,231	

Crop: **Turmeric**

Component		Unit	Unit Price	Without Project		With Project	
				Rainfed		Irrigated	
				Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I	GROSS RETURN (= Production value x unit yield)	ton	67,983	4.0	271,933	6.4	435,093
II	PRODUCTION COST	Rupees			50,125		60,150
	A Per hectare norm						
1	Expenditure on planting material (Departmental rate)	ha	15,000	1	15,000	1.2	18,000
2	INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	13,750	1	13,750	1.2	16,500
3	IPM (Integrated Pest Disease Management for plant protection etc)	ha	3,250	1	3,250	1.2	3,900
	Sub-Total (B)				32,000		38,400
	B Labor						
1	Preparation of fields by plowing done twice	ha	3,500	1	3,500	1.2	4,200
2	To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,925	1	2,925	1.2	3,510
3	Plantation expenditure (20 labours)	ha	3,900	1	3,900	1.2	4,680
4	Irrigation expenditure (10 labours)	ha	1,950	1	1,950	1.2	2,340
5	Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,850	1	5,850	1.2	7,020
	Sub-Total (B)				18,125		21,750
III	NET RETURN (= Gross return - production cost)	Rupees			221,808		374,943

Crop: **Turmeric**

Component	Unit	Unit Price	Without Project		With Project		Applied CFs
			Rainfed	Irrigated	Rainfed	Irrigated	
Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	65,944	4.0	263,775	6.4	422,041	1/ 0.97
II PRODUCTION COST	Rupees			63,749		76,499	
A Per hectare norm							
1 Expenditure on planting material (Departmental rate)	ha	14,550	1	14,550	1.2	17,460	1/ 0.97
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,125	1	26,125	1.2	31,350	3/ 1.90
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	5,493	1	5,493	1.2	6,591	4/ 1.69
Sub-Total (B)				46,168		55,401	
B Labor							
1 Preparation of fields by plowing done twice	ha	3,395	1	3,395	1.2	4,074	1/ 0.97
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,837	1	2,837	1.2	3,405	1/ 0.97
3 Plantation expenditure (20 labours)	ha	3,783	1	3,783	1.2	4,540	1/ 0.97
4 Irrigation expenditure (10 labours)	ha	1,892	1	1,892	1.2	2,270	1/ 0.97
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,675	1	5,675	1.2	6,809	1/ 0.97
Sub-Total (B)				17,581		21,098	
III NET RETURN (= Gross return - production cost)	Rupees			200,027		345,542	

Crop: **Ginger**

Component	Unit	Unit Price	Without Project		With Project	
			Rainfed	Irrigated	Rainfed	Irrigated
Vol. (unit/ha)			Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	23,060	10.3	237,518	12.4	285,944
II PRODUCTION COST	Rupees			50,125		60,150
A Per hectare norm						
1 Expenditure on planting material (Departmental rate)	ha	15,000	1	15,000	1.2	18,000
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	13,750	1	13,750	1.2	16,500
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	3,250	1	3,250	1.2	3,900
Sub-Total (B)				32,000		38,400
B Labor						
1 Preparation of fields by plowing done twice	ha	3,500	1	3,500	1.2	4,200
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,925	1	2,925	1.2	3,510
3 Plantation expenditure (20 labours)	ha	3,900	1	3,900	1.2	4,680
4 Irrigation expenditure (10 labours)	ha	1,950	1	1,950	1.2	2,340
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,850	1	5,850	1.2	7,020
Sub-Total (B)				18,125		21,750
III NET RETURN (= Gross return - production cost)	Rupees			187,393		225,794

Crop: **Ginger**

Component	Unit	Unit Price	Without Project		With Project		Applied CFs
			Rainfed	Irrigated	Rainfed	Irrigated	
Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I GROSS RETURN (= Production value x unit yield)	ton	22,368	10.3	230,392	12.4	277,365	1/ 0.97
II PRODUCTION COST	Rupees			63,749		76,499	
A Per hectare norm							
1 Expenditure on planting material (Departmental rate)	ha	14,550	1	14,550	1.2	17,460	1/ 0.97
2 INM (chemical fertilizers, cattle manure, organic fertilizer, and micronutrients)	ha	26,125	1	26,125	1.2	31,350	3/ 1.90
3 IPM (Integrated Pest Disease Management for plant protection etc)	ha	5,493	1	5,493	1.2	6,591	4/ 1.69
Sub-Total (B)				46,168		55,401	
B Labor							
1 Preparation of fields by plowing done twice	ha	3,395	1	3,395	1.2	4,074	1/ 0.97
2 To prepare the nursery, digging the field with a shovel, mixing compost manure, making beds and cleaning the seeds, sowing, irrigation, weeding, hoeing etc.	ha	2,837	1	2,837	1.2	3,405	1/ 0.97
3 Plantation expenditure (20 labours)	ha	3,783	1	3,783	1.2	4,540	1/ 0.97
4 Irrigation expenditure (10 labours)	ha	1,892	1	1,892	1.2	2,270	1/ 0.97
5 Weeding, hoeing, staking, and other necessary activities (30 labours)	ha	5,675	1	5,675	1.2	6,809	1/ 0.97
Sub-Total (B)				17,581		21,098	
III NET RETURN (= Gross return - production cost)	Rupees			166,644		200,867	

Source: Office of the Director, Horticulture Mission, Rajkiya Udyan, Circuit House, Dehradun

Remark: Irrigation cost is covered in O&M cost.

Conversion Factors (CFs):

1/Standard CF =	0.97
2/Shadow Wage Rate =	1.00
3/CF (fertilizer) =	1.90
4/CF (pesticide) =	1.69

Attachment 9.3.1 Economic Evaluation

Economic Farm Gate Price Estimation (Traded Commodities)

1) Maize

Item	Export Parity Price	
	Unit	Financial Price
1. f.o.b. Price Mumbai international port	INR / ton	17,782
2. Port charge, handling and warehousing	INR / ton	2,667
3. Wholesale price at Mumbai international port	INR / ton	15,000
4. Transportation cost	INR / ton	4,000
5. Wholesale price in Dehradun	INR / ton	11,000
6. Marketing cost (includes assembly, cost of bags and intermediary margins)	INR / ton	550
7. Local transportation cost	INR / ton	200
8. Handling cost	INR / ton	110
9. Farm gate price	INR / kg	10,000

Tariff Authority for Major Ports, New Delhi, September 2019

2) Wheat

Item	Export Parity Price	
	Unit	Financial Price
1. f.o.b. Price Mumbai international port	INR / ton	19,475
2. Port charge, handling and warehousing	INR / ton	2,921
3. Wholesale price at Mumbai international port	INR / ton	16,000
4. Transportation cost	INR / ton	4,000
5. Wholesale price in Dehradun	INR / ton	12,000
6. Marketing cost (includes assembly, cost of bags and intermediary margins)	INR / ton	600
7. Local transportation cost	INR / ton	200
8. Handling cost	INR / ton	120
9. Farm gate price	INR / kg	11,000

3) Paddy

Item	Export Parity Price	
	Unit	Financial Price
1. f.o.b. Price Mumbai international port	INR / ton	22,903
2. Port charge, handling and warehousing	INR / ton	3,435
3. Wholesale price at Mumbai international port	INR / ton	19,000
4. Transportation cost	INR / ton	4,000
5. Wholesale price in Dehradun	INR / ton	15,000
6. Local transportation cost	INR / ton	200
7. Milling cost and margin	INR / ton	3,000
8. By-products through processing	INR / ton	8,152
9. Cost from farm gate to mill gate	INR / ton	200
10. Handling cost	INR / ton	150
11. Farm gate price	INR / ton	7,000

Source: Trade statistics from Export Import Data Bank, Department of Commerce, 3 year average from 2018-19 to 2019-20

Tariff Authority for Major Ports, New Delhi, September 2019

Transportation companies information between Mumbai and Dehradun

Attachment 9.3.1 Economic Evaluation

Crop Budget - Cereals

1. Financial Price

Crop: Paddy

	Component	Unit	Unit Price	Without Project		With Project	
				Rainfed	Irrigated	Rainfed	Irrigated
				Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I	GROSS RETURN (= Production value x unit yield)	ton	7,000	1.8	12,600	2.9	20,300
II	PRODUCTION COST	Rupees			5,589		13,794
	A Material						
	1 Seed / Seedlings	kg	30	20	600	20	600
	2 Manure	ton	1500	0.5	750	0.5	750
	3 Fertilizers	kg	25	0	0	15	375
	4 Pesticides / Chemicals	litter	300	0	0	1	300
	Sub-Total (A)				1,350		2,025
	B Labor						
	1 Family labor	Person-day	330	3	990	18	5,940
	2 Hired labor	Person-day	330	0	0	4	1,320
	3 Bullock labor	Animal-day	660	4	2,640	5	3,300
	Sub-Total (B)				3,630		10,560
	C Others						
	1 Transport for harvests	L.S.	200	1.8	360	2.9	580
	2 Others	5%			249		629
	Sub-Total (C)				609		1,209
III	NET RETURN (= Gross return - production cost)	Rupees			7,011		6,506

2. Economic Price

Crop: Paddy

	Component	Unit	Unit Price	Without Project		With Project		Applied CFs
				Rainfed	Irrigated	Rainfed	Irrigated	
				Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	
I	GROSS RETURN (= Production value x unit yield)	ton	6,790	1.8	12,222	2.9	19,691	1/ 0.97
II	PRODUCTION COST	Rupees			5,536		14,306	
	A Material							
	1 Seed / Seedlings	kg	29	20	582	20	582	1/ 0.97
	2 Manure	ton	1,455	1	728	1	728	0.97
	3 Fertilizers	kg	48	0	0	15	713	1/ 3/ 1.90
	4 Pesticides / Chemicals	litter	507	0	0	1	507	4/ 1.69
	Sub-Total (A)				1,310		2,529	
	B Labor							
	1 Family labor	Person-day	330	3	990	18	5,940	2/ 1.00
	2 Hired labor	Person-day	330	0	0	4	1,320	2/ 1.00
	3 Bullock labor	Animal-day	660	4	2,640	5	3,300	2/ 1.00
	Sub-Total (B)				3,630		10,560	
	C Others							
	1 Transport for harvests	L.S.	194	1.8	349	2.9	563	1/ 0.97
	2 Others	5%			247		654	
	Sub-Total (C)				596		1,217	
III	NET RETURN (= Gross return - production cost)	Rupees			6,686		5,385	

Crop: Wheat

	Component	Unit	Unit Price	Without Project		With Project	
				Rainfed	Irrigated	Rainfed	Irrigated
				Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)
I	GROSS RETURN (= Production value x unit yield)	ton	11,000	1.8	19,800	2.9	31,900
II	PRODUCTION COST	Rupees			8,561		16,425
	A Material						
	1 Seed / Seedlings	kg	30	90	2,700	90	2,700
	2 Manure	ton	1500	0.5	750	0.5	750
	3 Fertilizers	kg	6	70	420	80	480
	4 Pesticides / Chemicals	litter	300	0	0	1	300
	Sub-Total (A)				3,870		4,230
	B Labor						
	1 Family labor	Person-day	330	7	2,310	24	7,920
	2 Hired labor	Person-day	330	1	330	3	990
	3 Bullock labor	Animal-day	650	2	1,300	3	1,950
	Sub-Total (B)				3,940		10,860
	C Others						
	1 Transport for harvests	L.S.	200	1.8	360	2.9	580
	2 Others	5%			391		755
	Sub-Total (C)				751		1,335
III	NET RETURN (= Gross return - production cost)	Rupees			11,240		15,476

Crop: Wheat

	Component	Unit	Unit Price	Without Project		With Project		Applied CFs
				Rainfed	Irrigated	Rainfed	Irrigated	
				Vol. (unit/ha)	Amount (Rs. / ha)	Vol. (unit/ha)	Amount (Rs. / ha)	
I	GROSS RETURN (= Production value x unit yield)	ton	10,670	1.8	19,206	2.9	30,943	1/ 0.97
II	PRODUCTION COST	Rupees			8,838		16,969	
	A Material							
	1 Seed / Seedlings	kg	29	90	2,619	90	2,619	1/ 0.97
	2 Manure	ton	1,455	1	728	1	728	1/ 0.97
	3 Fertilizers	kg	11	70	798	80	912	3/ 1.90
	4 Pesticides / Chemicals	litter	507	0	0	1	507	4/ 1.69
	Sub-Total (A)				4,145		4,766	
	B Labor							
	1 Family labor	Person-day	330	7	2,310	24	7,920	2/ 1.00
	2 Hired labor	Person-day	330	1	330	3	990	2/ 1.00
	3 Bullock labor	Animal-day	650	2	1,300	3	1,950	2/ 1.00
	Sub-Total (B)				3,940		10,860	
	C Others							
	1 Transport for harvests	L.S.	194	1.8	349	2.9	563	1/ 0.97
	2 Others	5%			404		781	
	Sub-Total (C)				753		1,344	
III	NET RETURN (= Gross return - production cost)	Rupees			10,368		13,974	

Source: JICA Survey Team based on Agmarknet, <https://www.agrifarming.in/>, <https://www.tandfonline.com/doi/full/10.1080/15538362.2021.1926393>, Preparatory Survey on Himachal Pradesh Crop Diversification Project Phase-2, 2020

Remark: Irrigation cost is covered in O&M cost.

Conversion Factors (CFs):

1/Standard CF =	0.97
2/Shadow Wage Rate =	1.00
3/CF (fertilizer) =	1.90
4/CF (pesticide) =	1.69

Economic Benefit
Project Benefit (Agricultural Production) -Annual
Nainital

Increment of Net Benefit	169.71
--------------------------	--------

Tehri Garhiwal											
Dend.	Cropping Pattern		(A) Gross Income			(B) Production Cost				Net Income	Net Benefit
	Area	Area	1) Unit Price	2) Unit Yield	Total Gross Income	1) Labour	2) Material	3) Others	Total Cost		

Uttarkashi					
Cropping Pattern	(A) Gross Income	(B) Production Cost	Net Income	Net Benefit	

Source: JICA Survey Team

Annual Benefit (INR million)
551

Attachment 9.3.1 Economic Evaluation

1. O&M Cost

Annual necessary cost for O&M

No.	Items	unit	Qty.	Unit price (INR)	Amount (INR)
1	Farm Machinery Bank	L.S.	1	2,096,000	2,096,000
2	Water Source Facility	L.S.	1	11,118,000	11,118,000
Total					13,214,000
Economic Price					12,817,580

Source: JICA Survey Team

Note: Standard Conversion Factor = 0.97

Remark: Annual cost is 5% of each cost. Scheduled based on economic life of infrastructure and equipment.

2. Replacement Cost

1) Replacement in every 10 years

No.	Items	unit	Qty.	Unit price (INR)	Amount (INR)
1	Integrated package with drip irrigation	ha	1,545	42,000	64,890,000
2	Integrated package with sprinkler irrigation	ha	545	26,000	14,170,000
Total					79,060,000
Economic Price					76,688,200

Source: JICA Survey Team

Note: Standard Conversion Factor = 0.97

Remark: Replacement cost is 20% of each cost. Scheduled based on economic life of infrastructure and equipment.

3) Replacement Schedule

(a) Schedule for replacement in every 10 years

Year	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Implemented rate in project period	17.4%	17.4%	17.4%	17.4%	17.4%	13.1%	0.0%	0.0%		
Financial Price	13,737,376	13,737,376	13,737,376	13,737,376	13,737,376	10,373,121	0	0	0	0
Economic Price	13,325,255	13,325,255	13,325,255	13,325,255	13,325,255	10,061,927	0	0	0	0
Economic Price (million)	13	13	13	13	13	10	0	0	0	0
Year	2043	2044	2045	2046	2047	2048	2049	2050	2051	
Implemented rate in project period	17.4%	17.4%	17.4%	17.4%	17.4%	13.1%	0.0%	0.0%		
Financial Price	13,737,376	13,737,376	13,737,376	13,737,376	13,737,376	10,373,121	0	0	0	
Economic Price	13,325,255	13,325,255	13,325,255	13,325,255	13,325,255	10,061,927	0	0	0	
Economic Price (million)	13	13	13	13	13	10	0	0	0	

(b) Schedule for replacement in every 15 years

Year	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Implemented rate in project period						17.4%	17.4%	17.4%	17.4%	17.4%
Financial Price	0	0	0	0	0	0	0	0	0	0
Economic Price	0	0	0	0	0	0	0	0	0	0
Economic Price (million)	0	0	0	0	0	0	0	0	0	0
Year	2043	2044	2045	2046	2047	2048	2049	2050	2051	
Implemented rate in project period	13.1%	0.0%	0.0%							
Financial Price	0	0	0	0	0	0	0	0	0	
Economic Price	0	0	0	0	0	0	0	0	0	
Economic Price (million)	0	0	0	0	0	0	0	0	0	

(c) Economic Price of (a) and (b) (unit: million)

Year	(a)	(b)	Total cost
2033	13	0	13
2034	13	0	13
2035	13	0	13
2036	13	0	13
2037	13	0	13
2038	10	0	10
2039	0	0	0
2040	0	0	0
2041	0	0	0
2042	0	0	0
2043	13	0	13
2044	13	0	13
2045	13	0	13
2046	13	0	13
2047	13	0	13
2048	10	0	10
2049	0	0	0
2050	0	0	0
2051	0	0	0
Total	150	0	150

Attachment 9.3.1 Economic Evaluation

Cash Flow Table and Calculation of EIRR, NPV and B/C

Annual Benefit (Production)				Annual O&M Cost				Discount Rate							
(Unit: INR Million)				(Unit: INR Million)											
551				13				i = 6.0%							
Cash Flow (Economic price)											Present Value (Unit: INR Million)			Economic Value Indicators (Unit for NPV: INR Million)	
(Unit: INR Million)															
Year	Procurement / Construction	Consultant	Cost			Total Cost	Benefit Production	Total Benefit	Net Benefit	Total Cost	Total Benefit	Net Benefit	Net Present Value (NPV)	1,750	
			Adm	O&M	Replacement										
1	2022	304	0	28	0	0	332	0	0	-332	313	0	-313	Benefit / Cost Ratio (B/C)	1.51
2	2023	531	63	56	2	0	652	10	10	-643	581	9	-572		
3	2024						655	38	38	-616	550	32	-517	Economic Internal Rate of Return (EIRR)	10.6%
		531	62	57	5	0									
4	2025	531	63	58	7	0	659	96	96	-563	522	76	-446	Sensitivity Analysis (EIRR)	
5	2026	531	61	60	9	0	661	192	192	-469	494	143	-351		
6	2027	531	54	60	11	0	656	287	287	-369	463	203	-260		
7	2028	398	33	46	13	0	490	381	381	-109	326	253	-73		
8	2029	0	0	0	13	0	13	462	462	449	8	290	282		
9	2030	0	0	0	13	0	13	523	523	510	8	309	302		
10	2031	0	0	0	13	0	13	551	551	538	7	308	301		
11	2032	0	0	0	13	0	13	551	551	538	7	290	284		
12	2033	0	0	0	13	13	26	551	551	525	13	274	261		
13	2034	0	0	0	13	13	26	551	551	525	12	259	246		
14	2035	0	0	0	13	13	26	551	551	525	11	244	232		
15	2036	0	0	0	13	13	26	551	551	525	11	230	219		
16	2037	0	0	0	13	13	26	551	551	525	10	217	207		
17	2038	0	0	0	13	10	23	551	551	528	9	205	196		
18	2039	0	0	0	13	0	13	551	551	538	5	193	189		
19	2040	0	0	0	13	0	13	551	551	538	4	182	178		
20	2041						13	551	551	538	4	172	168	Benefit	Cost
		0	0	0	13	0									
21	2042	0	0	0	13	0	13	551	551	538	4	162	158		
22	2043	0	0	0	13	13	26	551	551	525	7	153	146		
23	2044	0	0	0	13	13	26	551	551	525	7	144	138		
24	2045	0	0	0	13	13	26	551	551	525	6	136	130		
25	2046	0	0	0	13	13	26	551	551	525	6	128	122		
26	2047	0	0	0	13	13	26	551	551	525	6	121	115		
27	2048	0	0	0	13	10	23	551	551	528	5	114	110		
28	2049	0	0	0	13	0	13	551	551	538	3	108	105		
29	2050	0	0	0	13	0	13	551	551	538	2	102	99		
30	2051	0	0	0	13	0	13	551	551	538	2	96	94		
Total		3,357	336	365	346	150	4,554	13,569	13,569	9,015	3,405	5,155	1,750		

Sensitivity Analysis (EIRR)			
Benefit	Cost		
	Base	10%	20%
Base	10.6%	9.4%	8.4%
-10%	9.3%	8.2%	7.3%
-20%	8.0%	7.0%	6.1%

Attachment 9.6.1 Farm Economic Analysis per Household

Naimital															
Season	Land Use	Land Pattern	Crops	Cropping Pattern		(A) Gross Income			(B) Production Cost				Net Income (INR/ha)	Net Benefit (INR million)	
				Area (%)	Area (ha)	1) Unit Price (INR/ton)	2) Unit Yield (ton/ha)	Total Gross Income (INR/ha)	1) Labour (INR/ha)	2) Material (INR/ha)	3) Others (INR/ha)	Total Cost (INR/ha)			
Without Project Condition															
Area (ha)	Kharif	Net sown area	57%	Tomato	50%	0.41	12,666	8.5	107,660	18,125	46,168	-	64,293	43,368	17,675
1.43	Fallow	Culturable waste	9%	Paddy	50%	0.41	6,790	1.8	12,222	3,630	1,310	596	5,536	6,686	2,725
			34%	-	-	-	-	-	-	-	-	-	-	-	
Rabi	Net sown area	57%	Potato	45%	0.37	12,666	8.5	107,660	18,125	46,168	-	64,293	43,368	15,907	
		Pea	20%	0.16	16,686	7.1	118,474	18,125	46,168	-	64,293	54,182	8,833		
Fallow	Culturable waste	9%	Cabbage	15%	0.12	10,670	9.3	99,231	43,150	13,784	4,651	61,585	37,646	4,603	
		34%	Wheat	20%	0.16	10,670	1.8	19,206	3,940	4,145	753	8,838	10,368	1,690	
TOTAL		200%	200%	1.63											
With Project Condition															
Area (ha)	Kharif	Net sown area	91%	Peach	5%	0.07	13,610	14.4	195,985	-	82,062	-	82,062	113,923	7,412
1.43	Fallow	Culturable waste	9%	Litchi	5%	0.07	40,208	9.9	398,060	-	73,435	-	73,435	324,626	21,122
			34%	Tomato	40%	0.52	12,666	25.0	316,648	52,563	134,460	-	187,023	129,625	67,472
Rabi	Net sown area	91%	Garlic	20%	0.26	32,380	6.4	207,229	28,130	73,868	-	101,998	105,231	27,387	
		9%	Paddy	30%	0.39	6,790	2.9	19,691	10,560	2,529	1,217	14,306	5,385	2,102	
Fallow	Culturable waste	91%	Peach	5%	0.07	0	0	0	-	-	-	-	-	-	
		9%	Litchi	5%	0.07	0	0	0	-	-	-	-	-	-	
Rabi	Net sown area	91%	Tomato	45%	0.59	12,666	25.0	316,648	52,563	134,460	-	187,023	129,625	75,906	
		9%	Pea	35%	0.46	16,686	12.0	200,238	30,813	78,485	-	109,297	90,941	41,419	
Fallow	Culturable waste	9%	Wheat	10%	0.13	10,670	2.9	30,943	10,860	4,766	1,344	16,969	13,974	1,818	
		34%	-	-	-	-	-	-	-	-	-	-	-		
Total		200%	200%	2.60											
Increment of Net Benefit														244,638	
193,205															
Pithoragarh															
Season	Land Use	Land Pattern	Crops	Cropping Pattern		(A) Gross Income			(B) Production Cost				Net Income (INR/ha)	Net Benefit (INR million)	
				Area (%)	Area (ha)	1) Unit Price (INR/ton)	2) Unit Yield (ton/ha)	Total Gross Income (INR/ha)	1) Labour (INR/ha)	2) Material (INR/ha)	3) Others (INR/ha)	Total Cost (INR/ha)			
Without Project Condition															
Area (ha)	Kharif	Net sown area	49%	Apple	20%	0.10	40,364	2.0	80,729	-	44,010	-	44,010	36,719	3,778
1.05	Fallow	Culturable waste	10%	Paddy	80%	0.41	6,790	1.8	12,222	3,630	1,310	596	5,536	6,686	2,752
			41%	-	-	-	-	-	-	-	-	-	-	-	
Rabi	Net sown area	49%	Apple	20%	0.10	0	0.0	0	-	-	-	-	-	-	
		9%	Tomato	35%	0.18	12,666	8.5	107,660	18,125	46,168	-	64,293	43,368	7,809	
Fallow	Culturable waste	49%	Potato	35%	0.18	8,296	15.2	126,101	18,125	46,168	-	64,293	61,809	11,130	
		41%	Wheat	10%	0.05	10,670	1.8	19,206	3,940	4,145	753	8,838	10,368	533	
TOTAL		200%	200%	1.03											
With Project Condition															
Area (ha)	Kharif	Net sown area	90%	Sweet Orange	15%	0.14	0	0.0	0	-	133,416	-	133,416	197,572	37,341
1.05	Fallow	Culturable waste	10%	Apple	20%	0.19	40,364	8.2	330,988	-	73,868	-	73,868	105,231	14,916
			41%	Garlic	15%	0.14	32,380	6.4	207,229	28,130	73,868	-	101,998	105,231	14,916
Rabi	Net sown area	90%	Paddy	50%	0.47	6,790	2.9	19,691	10,560	2,529	1,217	14,306	5,385	2,544	
		9%	Sweet Orange	15%	0.14	18,819	17.7	333,089	-	112,388	-	112,388	220,700	31,284	
Fallow	Culturable waste	9%	Apple	20%	0.19	0	0	0	-	-	-	-	-	-	
		41%	Turmeric	20%	0.19	65,944	6.4	422,041	21,098	55,401	-	76,499	345,542	65,307	
Rabi	Net sown area	90%	Tomato	25%	0.24	12,666	25.0	316,648	52,563	134,460	-	187,023	129,625	30,624	
		9%	Potato	15%	0.14	8,296	22.3	185,004	27,188	69,251	-	96,439	88,565	12,554	
Fallow	Culturable waste	9%	Wheat	5%	0.05	10,670	2.9	30,943	10,860	4,766	1,344	16,969	13,974	660	
		41%	-	-	-	-	-	-	-	-	-	-	-		
Total		200%	200%	1.89											
Increment of Net Benefit														195,230	
169,228															
Tehri Garhwal															
Season	Land Use	Land Pattern	Crops	Cropping Pattern		(A) Gross Income			(B) Production Cost				Net Income (INR/ha)	Net Benefit (INR million)	
				Area (%)	Area (ha)	1) Unit Price (INR/ton)	2) Unit Yield (ton/ha)	Total Gross Income (INR/ha)	1) Labour (INR/ha)	2) Material (INR/ha)	3) Others (INR/ha)	Total Cost (INR/ha)			
Without Project Condition															
Area (ha)	Kharif	Net sown area	37%	Apple	20%	0.11	40,364	2.0	80,729	-	44,010	-	44,010	36,719	4,076
1.50	Fallow	Culturable waste	13%	Walnut	15%	0.08	0	0.0	0	-	-	-	-	-	
			50%	Tomato	20%	0.11	12,666	8.5	107,660	18,125	46,168	-	64,293	43,368	4,814
Rabi	Net sown area	37%	Potato	20%	0.11	8,296	15.2	126,101	18,125	46,168	-	64,293	61,809	6,861	
		50%	Pea	25%	0.14	16,686	7.1	118,474	18,125	46,168	-	64,293	54,182	7,518	
Fallow	Culturable waste	13%	-	-	-	-	-	-	-	-	-	-	-	-	
		50%	Apple	20%	0.11	0	0.0	0	-	-	-	-	-	-	
Rabi	Net sown area	37%	Walnut	15%	0.08	13,610	0.5	6,805	-	26,402	-	26,402	-19,597	-1,631	
		50%	Potato	15%	0.08	8,296	15.2	126,101	18,125	46,168	-	64,293	61,809	5,146	
Fallow	Culturable waste	13%	Pea	20%	0.11	16,686	7.1	118,474	18,125	46,168	-	64,293	54,182	6,014	
		50%	Cabbage	30%	0.17	10,670	9.3	99,231	43,150	13,784	4,651	61,585	37,646	6,268	
TOTAL		200%	200%	1.11											
With Project Condition															
Area (ha)	Kharif	Net sown area	87%	Plum	5%	0.07	13,610	5.5	74,855	-	82,062	-	82,062	-7,206	-470
1.50	Fallow	Culturable waste	13%	Apple	25%	0.33	40,364	8.2	330,988	-	133,416	-	133,416	197,572	64,458
			50%	Walnut	15%	0.20	0	0	0	-	-	-	-	-	-
Rabi	Net sown area	87%	Tomato	25%	0.33	12,666	25.0	316,648	52,563	134,460	-	187,023	129,625	42,290	
		50%	Potato	10%	0.13	8,296	22.3	185,004	27,188	69,251	-	96,439	88,565	11,558	
Fallow	Culturable waste	13%	Pea	20%	0.26	16,686	12.0	200,238	30,813	78,485	-	109,297	90,941	23,736	
		50%	-	-	-	-	-	-	-	-	-	-	-		
Total		237%	200%	2.61											
Increment of Net Benefit														239,276	
200,210															
Uttarkashi															
Season	Land Use	Land Pattern	Crops	Cropping Pattern		(A) Gross Income			(B) Production Cost				Net Income (INR/ha)	Net Benefit (INR million)	
				Area (%)	Area (ha)	1) Unit Price (INR/ton)	2) Unit Yield (ton/ha)	Total Gross Income (INR/ha)	1) Labour (INR/ha)	2) Material (INR/ha)	3) Others (INR/ha)	Total Cost (INR/ha)			
Without Project Condition															
Area (ha)	Kharif	Net sown area	84%	Apple	40%	0.20	35,361	2.0	70,723	-	44,010	-	44,010	26,713	5,453
0.81	Fallow	Culturable waste	7%	Potato	40%	0.27	8,296	15.2	126,101	18,125	46,168	-	64,293	61,809	16,822
			7%	Pea	15%	0.10	16,686	7.1	118,474	18,125	46,168	-	64,293	54,182	5,530
Rabi	Net sown area	84%	Paddy	15%	0.10	6,790	1.8	12,222	3,630	1,310	596	5,536	6,686	682	
		7%	-	-	-	-	-	-	-	-	-	-	-		
Fallow	Culturable waste	84%	Apple	30%	0.20	0	0.0	0	-	-	-	-	-	-	
		7%	Potato	35%	0.24	8,296	15.2	126,101	18,125	46,168	-	64,293	61,809	14,719	
Fallow	Culturable waste	84%	Pea	15%	0.10	16,686	7.1	118,474	18,125	46,168	-	64,293	54,182	5,530	
		7%	Wheat	20%	0.14	10,670	1.8	19,206	3,940	4,145	753	8,838	10,368	1,411	
TOTAL		200%	200%	1.36											
With Project Condition															
Area (ha)	Kharif	Net sown area	91%	Walnut	2%	0.01	0	0.0	0	-	69,034	-	69,034	-15,955	-3,123
0.81	Fallow	Culturable waste	7%	Kiwifruit	3%	0.02	0	0	0	-	133,416	-	133,416	156,547	34,617
			7%	Apple	30%	0.22	35,361	8.2	289,963	-	73,868	-	73,868	105,231	14,916
Rabi	Net sown area	91%	Potato	40%	0.29	8,296	22.3	185,004	27,188	69,251	-	96,439	88,565	26,112	
		7%	Pea	13%	0.10	16,686	12.0	200,238	30,813	78,485	-	109,297	90,941	8,714	
Fallow	Culturable waste	9%	Paddy	12%	0.09	6,790	2.9	19,691	10,560	2,529	1,217	14,306	5,385	476	
		7%	-	-	-	-	-	-	-	-	-	-	-		
Rabi	Net sown area	91%	Walnut	2%	0.01	13,610	3.9	53,079	-	69,034	-	69,034	-15,955	-3,123	
		7%	Kiwifruit	3%	0.02	40,364	5.9	238,150	-	133,563	-	133,563	104,587	2,335	
Fallow	Culturable waste	9%	Apple	30%	0.22	0	0	0	-	-	-	-	-	-	
		7%	Potato	20%	0.15	8,296	22.3	185,004	27,188	69,251	-	96,439	88,565	13,056	
Fallow	Culturable waste	9%	Pea	25%	0.18	16,686	12.0	200,238	30,813	78,485	-	109,297	90,941	16,758	
		7%	Wheat	20%	0.15	10,670	2.9	30,943	10,860	4,766	1,344	16,969	13,974	2,060	
Total		200%	200%	1.47											
Increment of Net Benefit														103,871	
53,724															

Attachment 9.9.1 Risk Management Framework

付属書9.1 リスクマネジメントフレームワーク

Project Name: Uttarakhand Integrated Horticulture Development Project

Country: India

Sector: Irrigation & Agriculture

Officers in charge:

- Operational staff: To be appointed
- Engineering staff: To be appointed
- Country office staff: To be appointed

Potential project risks	Assessment
1. Stakeholder Risk	Probability: M
(Description of risk)	Impact: H
Risk of the project cancellation or suspension resulting from the low commitment of the state of Uttarakhand	Analysis of probability and impact: The Project is the first time of implementation of Japanese ODA loan scheme for UKDHFP. Although PMC needs to support them to manage and operate the Project properly, UKDHFP has the strong intention to promote horticulture promotion with establishment of supply chain by cluster approach with accordance of the central government policy of Formulation and Promotion of 10,000 new FPOs.
Appraisal stage / Implementation stage	Mitigation measures: 1) To hold regular high-level policy meeting, Executive Committee to review and approve annual plan of operation and budgetary allocations at the timing of the next fiscal year's budget request. 2) To monitor the policy trends of the central government of India and the position of the Project in the annual plan of the state of Uttarakhand.
	Action during the implementation: 1) To hold regular high-level policy meeting, Executive Committee to review and approve annual plan of operation and budgetary allocations at the timing of the next fiscal year's budget request. 2) To monitor the policy trends of the central government of India and the position of the Project in the annual plan of the state of Uttarakhand.
	Contingency plan (if applicable): N/A
2. Executing Agency Risk	
2.1. Capacity Risk	
(Description of risk)	Probability: M
1) Risk of decrease of benefit, increase of cost, unachieved development target and delay of the project resulting from the lack of technical capacity of UKDHFP or delay in procurement of quality PMC to support PMU	Impact: M
Implementation stage	Analysis of probability and impact: The project is the first time of implementation of Japanese ODA loan scheme for UKDHFP. PMC will support them carefully for capacity development and procurement to manage properly with assistance of JICA India Office. In addition, UKDHFP can get information from HPCDP project in Himachal Pradesh that has long experiences of JICA projects. On the other hand, for supply chain component, employment of CBBOs will be a markable key to the project success to promote horticulture by cluster approach. PMU and PMC has to monitor the progress, otherwise If the risk occurs, it may lead to certain impact of the unachieved development target and delay of the Project.
	Mitigation measures: 1) To support PMU by PMC experts for implementation of all the components. 2) To plan appropriate implementation structure for all of the components. In particular, employment and operation of CBBOs shall be taken care of by PMC so that PMU/DIU could hire CBBOs with sufficient experience.
	Action during the implementation: 1) To support PMU by PMC experts for implementation of all the components. 2) To plan appropriate implementation structure for all of the components. In particular, employment and operation of CBBOs shall be taken care of by PMC so that PMU/DIU could hire CBBOs with sufficient experience.
	Contingency plan (if applicable): N/A

Attachment 9.9.1 Risk Management Framework

付属書9.1 リスクマネジメントフレームワーク

Project Name: Uttarakhand Integrated Horticulture Development Project

Country: India

Sector: Irrigation & Agriculture

Officers in charge:

- Operational staff: To be appointed
- Engineering staff: To be appointed
- Country office staff: To be appointed

Potential project risks	Assessment
(Description of risk)	Probability: M
2) Risk of decrease of benefit, increase of cost, unachieved development target and delay of the project resulting from low project management capacity of UKDHFP	Impact: M
Implementation stage	Analysis of probability and impact: The project is the first time of implementation of Japanese ODA scheme for UKDHFP. PMC will support them carefully to manage properly with assistance of JICA India Office. In addition, UKDHFP can get information from HPCDP project in Himachal Pradesh that has long experiences of JICA projects.
	Mitigation measures: 1) To hold Executive Committee regularly to monitor, evaluate and approve financial management and procurement. 2) To support PMU by PMC for application of the guideline and manuals on financial management and procurement.
	Action during the implementation: 1) To hold Executive Committee regularly to monitor, evaluate and approve financial management and procurement. 2) To support PMU by PMC for application of the guideline and manuals on financial management and procurement.
	Contingency plan (if applicable): N/A
(Description of risk)	Probability: L
3) Risk of decrease of benefit, increase of cost, unachieved development target and delay of the project resulting from low financial capacity of UKDHFP	Impact: M
Implementation stage	Analysis of probability and impact: The project is the first time of implementation of Japanese ODA loan scheme for UKDHFP. However, it is considered acceptable according to budget allocation and financial capacity of UK state.
	Mitigation measures: 1) To hold Executive Committee regularly to monitor, evaluate and approve financial management and procurement. 2) To support PMU by PMC for financial management
	Action during the implementation: 1) To hold Executive Committee regularly to monitor, evaluate and approve financial management and procurement. 2) To support PMU by PMC for financial management
	Contingency plan (if applicable): N/A
(Description of risk)	Probability: L
4) Risk of decrease of benefit, increase of cost, unachieved development target and delay of the project resulting from delay of payment to contractor	Impact: M
Implementation stage	Analysis of probability and impact: The project is the first time of implementation of Japanese ODA scheme for UKDHFP. However, PMC will support them to manage properly with assistance of JICA India Office. In addition, UKDHFP can get information from HPCDP project in Himachal Pradesh that has long experiences of JICA projects.
	Mitigation measures: 1) To support PMU by PMC for monitoring the construction and payment progress 2) To hold Executive Committee regularly to monitor payment work progress.
	Action during the implementation: 1) To support PMU by PMC for monitoring the construction and payment progress 2) To hold Executive Committee regularly to monitor payment work progress.
	Contingency plan (if applicable): N/A
2.2. Governance Risk	Probability: L
(Description of risk)	Impact: M
1) Risk of delay of the project resulting from the improper communication of related organizations and the implementation structure.	Analysis of probability and impact: The implementation structure for the Project will be complicated due to a lot of related organizations for the project components. The role, responsibility and relation of each organization shall be made clear at the planning stage. The structure was discussed among UKDHFP, JICA and JICA Survey Team to operate smoothly and effectively in the Project.
Implementation stage.	

Attachment 9.9.1 Risk Management Framework

付属書9.1 リスクマネジメントフレームワーク

Project Name: Uttarakhand Integrated Horticulture Development Project

Country: India

Sector: Irrigation & Agriculture

Officers in charge:

- Operational staff: To be appointed
- Engineering staff: To be appointed
- Country office staff: To be appointed

Potential project risks	Assessment
	Mitigation measures:
	1) To clarify role, responsibility and relationship of each organization before starting the Project.
	2) To hold Executive Committee regularly to share and discuss on the progress of the project activities with related organizations.
	3) To implement project management component including capacity development with support of PMC.
	Action during the implementation:
(Description of risk) 2) Risk of delay of the project implementation schedule from delay of procedure of E/N and L/A by the government Appraisal stage	1) To clarify role, responsibility and relationship of each organization before starting the Project.
	2) To hold Executive Committee regularly to share and discuss on the progress of the project activities with related organizations.
	3) To implement project management component including capacity development with support of PMC.
	Contingency plan (if applicable):
	N/A
	Probability: L
	Impact: M
	Analysis of probability and impact:
	The schedule of E/N and L/A procedure has been shared with UKDHFP many times, and UKDHFP has motivation to implement the Project on time of schedule.
	Mitigation measures:
	1) To support Uttarakhand state by JICA to arrange meetings and documents to achieve necessary procedure and approval punctually before project implementation.
	Action during the implementation:
	-
	Contingency plan (if applicable):
	N/A
2.3. Fraud & Corruption Risk	
(Description of risk) Risk of increase of cost and unachieved development target, delay of the project resulting from fraud of procurement of the Project. Implementation stage.	Probability: L
	Impact: M
	Analysis of probability and impact:
	The procurement implemented in the Project shall be guided by Uttarakhand government operation. For monitoring of procurement work, Exective Committee will be held periodically and the potential issues will be discussed before the risk occurs.
	Mitigation measures:
	1) To adopt procurement guideline of Uttarakhand state with addition of necessary modification.
	2) To monitor proper procurement work through Executive Committee.
	Action during the implementation:
	1) To adopt procurement guideline of Uttarakhand state with addition of necessary modification.
	2) To monitor proper procurement work through Executive Committee.
	Contingency plan (if applicable):
	N/A
3. Project Risk	
3.1. Design Risk	
(Description of risk) 1) Risk of delay in the implementation of the Project from the design with too advanced techniques. Implementation stage	Probability: M
	Impact: M
	Analysis of probability and impact:
	JICA Survey Team reviewed PPR and conducted data collection, then found basically project activities proposed in PPR were relatively reasonable for UKDHFP, though quantity and some minor componens shold have considered again to be matched to project shedule and budget. Along with the proposal, project implementation plan was discussed and finalized to be appropriate plan for the Project.
	Mitigation measures:
	1) To appoint PMC to support PMU to conduct project components especially for value chain and market development component.
	Action during the implementation:
	1) To appoint PMC to support PMU to conduct project components especially for value chain and market development component.
	N/A

Attachment 9.9.1 Risk Management Framework

付属書9.1 リスクマネジメントフレームワーク

Project Name: Uttarakhand Integrated Horticulture Development Project

Country: India

Sector: Irrigation & Agriculture

Officers in charge:

- Operational staff: To be appointed
- Engineering staff: To be appointed
- Country office staff: To be appointed

Potential project risks	Assessment
(Description of risk)	Probability: L
2) Risk of unachieved development component in the project implementation from improper project scope and project monitoring system.	Impact: M
Appraisal stage / Implementation stage	Analysis of probability and impact: Project components are proposed to be planned to cover the whole activities for achievement of the project objective. The implementation structure of each component is organized with various stakeholders and supporting institutions. PMU will manage and monitor the activities efficiently with sharing information.
	Mitigation measures: 1) To plan proper project components before the Project 2) To hold progress meeting by PMU/DIU to monitor and share the progress of activities. 3) To hold Executive Committee to monitor the progress of project components.
	Action during the implementation: 1) To plan proper project components before the Project 2) To hold progress meeting by PMU/DIU to monitor and share the progress of activities. 3) To hold Executive Committee to monitor the progress of project components.
	N/A
(Description of risk)	Probability: L
3) Risk of delay of the project implementation schedule from too many number of packages	Impact: M
Appraisal stage	Analysis of probability and impact: Project packages was considered at the stage of preparatory survey and was concluded appropriate for the Project with addition of some proposal from JICA Survey Team.
	Mitigation measures: 1) To review the DPR to be prepared based on PPR before the Project. 2) To confirm local situation about constructor's capacity and the quality control before the Project.
	Action during the implementation: -
	N/A
(Description of risk)	Probability: L
4) Risk of cancellation or suspension of the project implementation from increase of project cost	Impact: M
Implementation stage	Analysis of probability and impact: Price increase rate is relatively stable in India. It is not expected that the risk occurs during the project period, but the contingency shall be prepared in the project cost to be ready for the risk just in case.
	Mitigation measures: 1) To consider the project cost based on economic situation of country and target area before the Project.
	Action during the implementation: -
	N/A
(Description of risk)	Probability: L
5) Risk of decrease of benefit of the project implementation from sudden decrease of market demand of horticultural crops due to external factors.	Impact: L
Implementation stage	Analysis of probability and impact: It is difficult to assume the sudden occurrence of decrease of horticultural crops demand during the project period according to the recent demand expansion in entire India and result of marketing survey in the JICA Survey.
	Mitigation measures: 1) To conduct the project economic analysis and confirm the resiliency against demand (benefit) decrease before the Project.
	Action during the implementation: -
	N/A

Attachment 9.9.1 Risk Management Framework

付属書9.1 リスクマネジメントフレームワーク

Project Name: Uttarakhand Integrated Horticulture Development Project

Country: India

Sector: Irrigation & Agriculture

Officers in charge:

- Operational staff: To be appointed
- Engineering staff: To be appointed
- Country office staff: To be appointed

Potential project risks	Assessment
3.2. Program & Donor Risk	
(Description of risk)	Probability: L
Risk of decrease of benefit and delay of the project resulting from delay of the other schemes, other donors' projects or departments conducted in Uttarakhand.	Impact: L
Implementation stage	Analysis of probability and impact: Beneficiaries of the Project will be supported by the Project for the purpose of income improvement coming from horticulture promotion with supply chain development. The Project is planned to conduct convergence activities for some components, however financial assist from other schemes is not considered, which can make the risk lower in the Project. Information sharing between relevant departments and organizations in UK state is helpful for each other.
	Mitigation measures:
	1) To hold information exchange meeting and project coordination meeting with relevant organizations periodically by PMU supported by PMC
	Action during the implementation:
	1) To hold information exchange meeting and project coordination meeting with relevant organizations periodically by PMU supported by PMC
	Contingency plan (if applicable):
	N/A
3.3. Delivery Quality Risk	
(Description of risk)	Probability: L
1) Risk of impossibility to monitor and measure development effect due to lack of the way of data collection.	Impact: L
Implementation stage	Analysis of probability and impact: It is possible to collect data related to operational and effect indicators through extension officers' daily monitoring and MIS & GIS facilities to be installed newly. PMC will provide technical assistance to PMU for the new systems.
	Mitigation measures:
	1) To support PMU by PMC to collect data properly.
	2) To establish MIS & GIS facilities and provide technical support with support of PMC
	Action during the implementation:
	1) To support PMU by PMC to collect data properly.
	2) To establish MIS & GIS facilities and provide technical support with support of PMC
	Contingency plan (if applicable):
	N/A
(Description of risk)	Probability: M
2) Risk of unsecured sustainability for O&M of project resulting	Impact: M
Implementation stage	Analysis of probability and impact: The plan and responsibility of O&M for facilities shall be handed over to owners such as FPO, Mandi and Private sectors. In order to operate O&M effectively after the Project also, basically facility owners shall be responsible with maintenance service and instruction of supplier/service provider. PMU needs to monitor and instruct if necessary with support of PMC rediodically.
	Mitigation measures:
	1) To conduct O&M training mainly by supplier with support of PMC.
	Action during the implementation:
	1) To conduct O&M training mainly by supplier with support of PMC.
	Contingency plan (if applicable):
	N/A
(Description of risk)	Probability: M
3) Risk of decrease of benefit, increase of cost, unachieved development target and delay of the project resulting from natural disaster	Impact: L
Implementation stage	Analysis of probability and impact: Project target area is located in hilly area in UK state, and road collapse might occur due to seasonal heavy rain. For the achievement of project output, work schedule has to be considered based on climate condition.
	Mitigation measures:
	1) To plan construction work schedule to be conducted in Rabi season.
	2) To plan and conduct project components in consideration of climate condition with support of PMC.

Attachment 9.9.1 Risk Management Framework

付属書9.1 リスクマネジメントフレームワーク

Project Name: Uttarakhand Integrated Horticulture Development Project

Country: India

Sector: Irrigation & Agriculture

Officers in charge:

- Operational staff: To be appointed
- Engineering staff: To be appointed
- Country office staff: To be appointed

Potential project risks	Assessment
(Description of risk) 4) Risk of unfair benefit expression of the project resulting for the limited beneficiaries Implementation stage	Action during the implementation:
	1) To plan construction work schedule to be conducted in Rabi season.
	2) To plan and conduct project components in consideration of climate condition with support of PMC.
	Contingency plan (if applicable):
	N/A
	Probability: L
	Impact: L
	Analysis of probability and impact:
	In order to catch up beneficiaries in project target area and secure income during not getting income from farm product due to crop exchanging, livelihood improvement activity is planned in area expansion and production component.
	Mitigation measures:
	1) To conduct livelihood improvement activities with support of PMC and relevant departments.
	Action during the implementation:
	1) To conduct livelihood improvement activities with support of PMC and relevant departments.
	Contingency plan (if applicable):
	N/A

Attachment for Chapter 10

Attachment 10.2.1 Annual Average data on Water Quality, Uttarakhand (2019)

Sl. No.	Station	pH	BO D (mg /L)	CO D (mg /L)	Conduc tivity (umoh m/cm)	Tem p (°C)	DO (mg /L)	Alkali nity as CaCo ₃ (mg/L)	Chlor ides (mg/L)	Calci um as Ca(m g/L)	Magne sium as Mg (mg/L)	Hard ness as CaCO ₃ (mg/L)	Total Disso lved Solid s (mg/L)	Fecal Colif orm (MP N/ 100 mL)	Total Colif orm (MP N/ 100 mL)
	STANDARD (Minimum)	6.5					>5								
	STANDARD (Maximum)	8.5	<3											<250 ₀	
1	River Ganga Canal at Harki Pouri Haridwar (Upper Ganga Canal)	7.91	1.00	4.00		19.25	9.67	70.25	6.42	42.83	29.33	72.17	92.75	33.27	78.33
2	Upper Ganga Canal D/s Harki Pauri, (Harki Pauri Haridwar at Rishikul Bridge), Haridwar	7.95	1.00	4.00		18.67	9.83	72.33	5.75	46.50	30.75	77.25	94.58	40.91	90.00
3	Upper Ganga Canal D/S Roorkee, Haridwar	7.91	1.02	4.67		18.58	9.38	74.92	7.25	45.67	35.08	77.08	98.92	66.36	137.5 ₀
4	Ganga Canal at Dam Koti, Haridwar (Upper River Ganga Canal at Harki Pauri)	7.93	1.00	4.00		18.75	9.90	69.67	6.83	45.67	31.83	77.50	89.83	36.73	80.00
5	Ganga at Haridwar U/S Bindughat, Dudhiyavan, Haridwar	8.00	1.02	5.17		18.92	9.53	77.58	6.25	43.83	33.92	77.75	103.1 ₇	65.45	137.5 ₀
6	Ganga at Haridwar D/S Balakumari Mandir, Ajeetpur, Haridwar	7.65	1.18	6.25		18.83	8.95	96.67	10.08	52.58	35.50	88.08	138.2 ₅	146.3 ₆	269.1 ₇
7	Ganga Canal at Lal Ta Rao Bridge, Haridwar (Upper Ganga Canal), Haridwar	8.00	1.00	4.00		19.00	9.48	74.17	6.17	46.92	32.00	78.92	90.50	40.27	88.33
8	Suswa River at Mothrawala, (Suswa (D/S) Mathurawala), Dehradun	7.78	27.3 ₃	117.67		19.50	2.78	272.8 ₃	27.08	216.0 ₀	106.33	322.3 ₃	382.0 ₈	7.84	
9	River Ganga after confluence of River Song near Satyanara yan Temple D/S Raiwala, Dehradun	7.90	1.03	5.67		19.58	9.15	80.17	8.17	49.42	37.08	86.50	159.0 ₈	98.18	201.6 ₇
10	River Ganga at Rishikesh U/S Lakshmanjhula, Swargashra m U/S of Rishikesh	7.76	1.00	4.00		18.25	10.2 ₂	63.75	5.33	41.50	28.17	69.67	82.25	20.09	45.83
11	Ganga at D/S of Rishikesh, Near Pashulok	7.78	1.00	4.00		18.92	9.77	69.08	5.50	42.17	31.00	74.00	88.33	33.09	71.67

Sl. No.	Station	pH	BO D (mg /L)	CO D (mg /L)	Conduc tivity (µmoh m/cm)	Tem p (°C)	DO (mg /L)	Alkali nity as CaCO ₃ (mg/L)	Chlor ides (mg/L)	Calcium as Ca(m g/L)	Magne sium as Mg (mg/L)	Hard ness as CaCO ₃ (mg/L)	Total Disso lved Solid s (mg/ L)	Fecal Colif orm (MP N/ 100 mL)	Total Colif orm (MP N/ 100 mL)
12	River Yamuna at U/S of Lakhwar Dam, Dehradun, (River Yamuna U/s Lakhwar Dam)	7.91	1.00	4.00		17.50	9.60	73.75	6.25	49.00	33.50	82.50	91.00	24.67	43.00
13	River Yamuna at U/S Dakpathar, Dehradun	7.62	1.05	5.00		18.50	8.90	68.00	7.50	49.50	29.00	78.50	99.25	106.67	182.50
14	River Alaknanda A/C Mandakini at Rudrapryag	7.80	1.00	4.00		17.25	9.70	64.50	5.25	43.50	28.50	72.00	71.00	2.00	2.00
15	River Mandakini B/C Alaknanda at Rudrapryag	7.86	1.00	4.00		17.50	9.55	60.00	4.75	41.50	27.00	68.50	66.75	2.00	2.00
16	River Alaknanda B/C Mandakini at Rudrapryag	7.77	1.00	4.00		18.00	9.80	62.00	4.25	40.50	30.50	71.00	67.75	2.00	2.00
17	River Alaknanda A/C Bhagirathi at Devpryag	7.88	1.00	4.00		18.00	9.75	61.00	5.25	41.00	26.50	67.50	71.00	2.00	2.00
18	River Alaknanda B/C to Bhagirathi at Devpryag	7.82	1.00	4.00		18.00	9.55	60.00	5.00	39.00	27.00	66.00	65.50	2.00	2.00
19	River Bhagirathi B/C with Alaknanda at Devpryag	7.82	1.00	4.00		17.50	9.75	59.50	5.00	39.00	28.00	67.00	63.50	2.00	2.00
20	River Bhagirathi at Gangotri, Uttarkashi	7.64	1.00			5.00	10.80	56.00	4.00	46.00	26.00	72.00	82.00		2.00
21	Ground Water -Handpump CHC, Bhagwanpur,Haridwar	7.20			1044.00	18.00		425.00	38.00	188.00	24.00	212.00	718.00		2.00
22	Ground Water -Handpump Vill-Sunhera, Haridwar	7.21			890.00	18.00		432.00	52.00	180.00	38.00	218.00	576.00		2.00
23	Ground Water - Handpump Ramnagar Industrial Area, Roorkee, Haridwar	7.18			572.00	20.00		298.00	50.00	90.00	22.00	218.00	380.00		2.00
24	Ground Water - Handpump Sikendarpur Lakheswari, Roorkee, Haridwar	7.12			1770.00	19.00		380.00	68.00	120.00	110.00	230.00	1140.00		2.00
25	Ground Water - Handpump Saleempur Chowk, Roorkee, Haridwar	7.38			970.00	20.00		275.00	35.00	190.00	26.00	216.00	648.00		2.00
26	Ground Water - Handpump Roshnabad Collectorate, Haridwar	7.02			422.00	18.00		120.00	18.00	74.00	16.00	90.00	288.00		2.00

Sl. No.	Station	pH	BO (mg/L)	CO D (mg/L)	Conduc tivity (µmoh m/cm)	Tem p (°C)	DO (mg /L)	Alkali nity as CaCo ₃ (mg/L)	Chlor ides (mg/L)	Calc ium as Ca(m g/L)	Magne sium as Mg (mg/L)	Hard ness as CaC O ₃ (mg/L)	Total Disso lved Solid s (mg/L)	Fecal Colif orm (MP N/ 100 mL)	Total Colif orm (MP N/ 100 mL)
27	River Ganga D/S Lakkarghat O.P, Haridwar	8.14	1.00	6.00		22.75	9.20	136.75	10.50	63.25	39.50	102.75	235.75	53.33	135.00
28	River Ganga D/S Swargaashram-1, Haridwar	8.03	1.00	4.00		19.75	9.70	65.75	8.25	43.00	26.50	69.50	103.50	53.33	137.50
29	Naini Lake at Nainital (Water Intake Point), Nainital	7.67	1.62	5.68	402.50	13.50	7.00	237.50	20.00	164.83	119.17	284.00	282.67		
30	Bheemtal Lake, Nainital	7.51	1.43	5.52	197.00	15.08	6.87	140.67	17.25	94.67	77.00	171.67	136.08		
31	Gola River at Haldwani, (River Gola, Nainital)	7.52	1.55	5.75	223.33	18.00	7.28	134.67	20.58	102.00	83.17	185.17	147.42		
32	Ground Water -Handpump Near Govt. Primary , Kashipur	7.50	1.60	5.60	326.00	30.00	0.00	210.00	15.00	154.00	126.00	280.00	214.00		
33	Ground Water - Handpump Near Chaiti Chauraha, Bazpur Road , Kashipur	7.40	8.00	20.00	296.00	30.00	0.00	224.00	18.00	122.00	102.00	224.00	193.00		
34	Ground Water - Handpump in village Damauda at Kashipur near India Glycos Ltd.	7.50	3.20	4.60	240.00	30.00	0.00	160.00	24.00	104.00	96.00	200.00	156.00		
35	Ground Water - Handpump Near Kendriya Vidhyala, Bazpur Road , Kashipur														
36	Ground Water - Handpump Near Govt. Gurudwara, Muradabad Raod, Kashipur	7.50	1.60	4.20	249.00	30.00	0.00	218.00	26.00	120.00	110.00	230.00	162.00		
37	Ground Water -Handpump Near Sitarganj, Industrial Area-1 , Kashipur	6.80	1.80	3.20	535.00	30.00	0.00	264.00	26.00	114.00	128.00	242.00	348.00		
38	Ground Water -Handpump Near Sitarganj, Industrial Area-2 , Kashipur	7.50	1.30	20.00	323.00	30.00	0.00	214.00	16.00	122.00	138.00	260.00	210.00		
39	Ground Water -Handpump at Pantnagar, Industrial Area-1	7.40	1.80	4.20	296.00	29.00	0.00	215.00	16.00	110.00	128.00	238.00	196.00		
40	Ground Water -Handpump at Pantnagar, Industrial Area-2	7.50	2.00	4.00	263.00	30.00	0.00	176.00	18.00	116.00	105.00	221.00	171.00		

Sl. No.	Station	pH	BO D (mg /L)	CO D (mg /L)	Conduc tivity (µmoh m/cm)	Tem p (°C)	DO (mg /L)	Alkali nity as CaCo ₃ (mg/L)	Chlor ides (mg/L)	Calc ium as Ca(m g/L)	Magne sium as Mg (mg/L)	Hard ness as CaC O ₃ (mg/L)	Total Disso lved Solid s (mg/ L)	Fecal Colif orm (MP N/ 100 mL)	Total Colif orm (MP N/ 100 mL)
41	Ground Water -Handpump at Santipur, Kichha-1														
42	Ground Water -Handpump at Santipur, Kichha-2														
43	Water Quality Data Kumaun Rivers	7.43	4.45	20.64	378.09	28.27	5.80						258.82		
44	Dhella River U/S at Kashipur Moradabad Road Bridge, (U/ S Moradabad Road) US Nagar	7.36	6.92	25.90	290.70	23.20	5.54						164.30		
45	Dhella River D/S at Thakurdwara, Aliganj Road, US Nagar	7.45	19.06	68.10	482.80	23.90	1.56						281.10		
46	Bhella River U/S Kashipur, (U/S Rannagar Road), US Naga r	7.31	3.61	23.62	267.80	24.00	4.86						161.80		
47	Bhella River at Lohia Bridge D/S Kashipur (D/S Lohiya Bri dge), US Nagar	6.97	39.67	115.17	489.42	25.75	0.58						315.42		
48	Pilakhar River at Bilaspur, Rampur, US Nagar	7.52	6.85	31.67	396.75	25.58	5.38						257.33		
49	Nanduar River U/S Sitarganj Industrial Area, (Nandour U/S Sitarganj), US Nagar	7.52	6.12	26.00	203.80	25.00	5.44						121.20		
50	Nanduar River D/S Sitarganj Industrial Area, (Nandour D/S Sitarganj), US Nagar	7.56	6.93	31.00	376.83	26.17	5.30						219.50		
51	Kichha River at Kichha, (River Kichha (U/S Nagarbhalla, K ashipur), US Nagar	7.34	6.13	32.67	503.25	26.25	4.57						342.92		
52	Kalyani River at U/S Panthnagar Industrial Area, US Nagar	7.41	5.58	22.75	419.50	26.33	5.25						249.83		
53	Kalyani River at D/S Panthnagar Industrial Area, US Nagar	7.08	11.45	39.50	500.42	25.75	3.53						307.33		

Source: Compiled and modified by the JICA Study Team (2021) based on monthly water quality data from CPCB

Attachment 10.3.1 List of Project requiring prior Environment Clearance or Prior Environment Permission

Project		Category with threshold limit			Remark
		A	B1	B2	
1	(a) Mining of Minor Minerals	>100 hectare of mining lease area	> 5 hectares and ≤ 100 hectares of mining lease area	< 5 hectares of mining lease area	Note: (1) Mining of minor mineral projects with mine lease area more than 2 hectare and up to 5 ha shall be referred to Distract Level Expert Appraisal Committee (2) Mining lease area includes cluster situation
	(b) Mining of Major Minerals including Coal	>100 hectare of mining lease area	≤ 100 hectares of mining lease area	Dump mining (excavation or handling of dump or overburden or waste material)	
2	Offshore and Onshore Oil & Gas including CBM and Shale Gas				
	a) Exploration	-	-	All projects	
	b) Development and Production (including infrastructure facilities e.g. Gas Collecting or Gathering Station, Early production Systems, pipelines, etc.).	All projects	-	-	
3	River Valley	> 75 megawatts hydroelectric power generation;	≤ 75 megawatts >25 megawatts hydroelectric power generation;	Up to 25 megawatts hydroelectric power generation	Note: Category 'B1' river valley projects falling in more than one State or Union Territory shall be appraised at the Central Government Level.
4	Irrigation	≥ 50,000 hectares of culturable command area	>10,000 hectares and	> 2000 hectare and < 10,000 hectares of culturable command area.	
5	Thermal Power	≥ 500 megawatts (coal/lignite/naphtha & gas based); ≥100 megawatts (all other fuels).	> 5 megawatts and < 500 megawatts (coal / lignite / naphtha & gas based); ≥ 5 megawatts and <100 megawatts (all other fuels except biomass and municipal solid non-hazardous waste); >15 megawatts and <100 megawatts (using municipal solid non-hazardous waste / biomass	≥ 5 megawatts and ≤ 15 megawatts, based on biomass or non-	

			as fuel).	hazardous municipal solid waste using auxiliary fuel such as coal, lignite / petroleum products up to 15%.	
6	Nuclear Power or processing of nuclear fuel	All projects	-	-	
7	Coal washeries	≥ 1 million ton per annum throughput of coal	<1million ton per annum throughput of coal	-	Note: If Coal washery is located within mining lease area, the proposal shall be appraised together with the mining proposal.
8	(a) Mineral Beneficiation involving physical process and physicochemical processes	-	All projects	Small and Medium enterprises	Note: If Mineral Beneficiation plant located within mining lease area the proposal shall be appraised together with the mining proposal.
	(b) Chemical processing of ores/ concentrate	≥1.0 million ton per annum throughput	<1.0 million ton per annum throughput		
9	Pellet plants or agglomeration plants	-	All Projects	Small and Medium enterprises	
10	Metallurgical industries (ferrous & non ferrous)				
	(a) Integrated Steel Plants	> 1 million ton per annum of crude steel	≤ 1 million ton per annum of crude steel		
	(b) Sponge Iron Plants	>0.5million ton per annum	≤ 0.5million ton per annum		
	(c) Non-ferrous smelting and refining	All projects	-	-	
	(d) Ferro Alloy Plants	>1.5 Lakh ton per annum	≤1.5 Lakh ton per annum	-	
	(e) Secondary metallurgical industry (Toxic metals)	≥20,000 ton per annum	<20,000 ton per annum	-	
	(f) Secondary metallurgical industry (Nontoxic metals)	-	(i) Foundries involving furnaces such as Induction Furnace or Electric Arc Furnace or submerged arc furnace or other gas-based furnaces with capacity more than 1,50,000 ton per annum	(i) Foundries involving furnaces such as Induction Furnace or Electric Arc Furnace or Submerged arc furnace or other gas-based furnaces, with capacity more than 1,00,000 ton per annum to	

			(ii) Foundries involving furnaces such as cupola and other furnaces with capacity more than 1,00,000 ton per annum	1,50,000 ton per annum (ii) Foundries involving furnaces such as cupola or other furnaces using coal with capacity more than 60, 000 ton per annum to 1,00,000 ton per annum (iii) Standalone rerolling mills involving pickling with a capacity more than 1, 00, 000 ton per annum. (iv) Standalone rerolling mills not involving pickling with a capacity more than 2, 00, 000 ton per annum. (v) Medium enterprises	
11	(a) Cement Plants	≥ 1.0 million ton per annum production capacity except plants with vertical shaft kiln.	(i) <1.0 million ton per annum production capacity (ii) All cement plants with vertical shaft kiln.	Small and Medium enterprises.	Note: Fuel for cement industry may be coal, petcoke, mixture of coal and petcoke and coprocessing of waste provided it meets the emission standards
	(b) Standalone clinker grinding units		≥ 1.0 million ton per annum production capacity	(i) Stand-alone grinding units up to 1 million ton per annum (ii) All standalone grinding units in case of transportation of clinker and finished product proposed through rail / sea mode. (iii) Small and Medium enterprises.	
12	Lead acid battery manufacturing (excluding assembling and charging of lead acid battery)	-	All projects	-	
13	Petroleum refining industry	All projects	-	-	

14	(a) Coke oven plants	≥ 0.8 million ton per annum	< 0.8 million ton per annum	-	
	(b) Coal Tar processing units or Calcination plants	-	All projects	-	
15	Asbestos milling and asbestos based products	All projects	-	-	
16	Chlor-alkali industry or Production of Halogens	≥300 ton per day production capacity if a unit located outside the notified industrial estates.	(i) ≥300 ton per day production capacity if a unit located within the notified industrial estates. (ii)	<300 ton per day production capacity if a unit located within the notified industrial estates.	Note: No new Mercury Cell based plants will be permitted and existing units converting to membrane cell technology are exempted from the Notification if provided there is no increase in the production capacity.
17	Soda ash Industry	All projects	-	-	
18	Skin/hide processing including tanning industry	All projects located outside the notified industrial estates.	All projects located within notified industrial estates.	All projects of leather production without tanning and located within the notified industrial estates.	
19	Chemical fertilizers and standalone ammonia plants.	(i) All projects except Single Super Phosphate including Sulphuric acid. (ii) Standalone ammonia plants	Single Super Phosphate including sulphuric acid production.	-	
20	Manufacturing of Acids	Stand-alone phosphoric acid or ammonia.	Stand-alone sulphuric acid	All other acids	
21	Pesticides including insecticides; herbicides; weedicides; pestcontrol; etc., and their specific intermediates (excluding formulations)	All projects located outside the notified industrial estates.	All projects located within the notified industrial estates.	-	
22	Petro-chemical complexes (industries based on processing of petroleum fractions, natural gas, production of carbon black)	All projects	-	-	
23	Manmade fibers manufacturing	Viscose Staple Fiber (VSF); Viscose Filament Yarn (VFY); and Rayon.	Nylon and Others	-	
24	Petroleum products and petrochemical based processing	All projects located outside the notified industrial estates.	All projects located within the	Medium enterprises	

	including production of carbon black and electrode grade graphite (processes other than cracking & reformation and not covered under the complexes)		notified industrial estates.		
25	Synthetic Organic Chemicals				
	a) Dyes & dye intermediates	-	All projects except column (5)	(i) Projects proposed with zero liquid discharge and located within the notified industrial estates. (ii) All micro, small and medium enterprises.	
	b) Bulk drugs and intermediates excluding drug formulations	-	All projects except column (5)	(i) Projects proposed with zero liquid discharge and located within the notified industrial estates. (ii) All micro, small and medium enterprises.	
	c) Synthetic rubbers	All projects located outside the notified industrial estates.	All projects located within the notified industrial estates.	All micro, small and medium enterprises.	
	d) Basic organic chemicals, other synthetic organic chemicals, chemical intermediates, synthetic resins and synthetic adhesives	All projects located outside the notified industrial estates.	All projects located within the notified industrial estates.	(i) All small and medium enterprises. (ii) Manufacturing of synthetic resins / adhesives up to 1000 ton per annum.	
26	Distilleries and molasses-based manufacturing units (e.g. Yeast)	(i) Molasses based distilleries \geq 100 kilo liter per day; (ii) Molasses based manufacturing units (e.g. Yeast) \geq 100 ton per day; (iii) Non-molasses based distilleries \geq 200 kilo liter per day.	(i) Molasses based distilleries <100 kilo liter per day. (ii) Molasses based Yeast manufacturing units <100 ton per day (iii) Nonmolasses based distilleries < 200 kilo liter per day	(i) Country Liquor (e.g. based on Mahuwa flower, Cashew, etc.) units more than capacity of 10 kilo liter per day. (ii) Expansion of distilleries within the premises, having earlier Prior Environment Clearance and for production of	

				ethanol to be used as fuel for blending only.	
27	Manufacturing of paints, varnishes, pigments, intermediates (excluding blending / mixing)	All projects located outside the notified industrial estates.	All projects located within the notified industrial estates.	Medium enterprises	
28	Pulp & Paper Industry	Pulp manufacturing and Pulp & Paper manufacturing industry except from waste paper	-	Paper manufacturing from waste paper or ready pulp involving deinking or bleaching or decoloring.	
29	Sugar Industry	-	≥ 5000 ton of cane per day crushing capacity	-	
30	Manufacturing of explosives, detonators, fuses including management and handling activities		All projects		
31	Pipelines				
	(a) Oil & gas transportation pipe line (crude and refinery or petrochemical products), passing through national parks or sanctuaries or coral reefs or Ecologically Sensitive Areas.	All Projects	-	-	
	(b) Slurry pipelines (coal, lignite and other ores) passing through national parks or sanctuaries or coral reefs, Ecologically Sensitive Areas.	All Projects	-	-	
32	Air Ports and Heliports including terrestrial and water ports	All projects including terrestrial airstrips, which are for commercial use.	-	(i) Water - aerodromes which are for commercial use. (ii) Heliports which are for commercial use.	
33	All ship breaking yards including ship breaking units	All projects	-	-	
34	Industrial Estate including parks; complexes; areas; export processing Zones (EPZs); Special Economic Zones (SEZs);	(i) If the area of proposed project is more than 500 hectares and houses at least one Category 'A' or Category	If the area of the project is less than 500 hectares and houses at least one category 'B1' project	(i) If the area of the proposed project is more than 500 hectares and does not house category 'A' or	

	Biotech Parks; Leather Complexes; Coastal Economic Zones (CEZs); Special Investment Region (SIR); National Investment and Manufacturing Zones (NIMZs); Industrial Cluster; Petroleum, Chemicals and Petrochemicals Investment Regions (PCPIRs)	'B1' project listed in the schedule. (ii) If area of the proposed project is less than 500 hectares and houses at least one category 'A' project listed in the schedule.	listed in the schedule.	'B1' project listed in the schedule. (ii) Irrespective of the area of the proposed project and houses at least one Category 'B2' project listed in the schedule	
35	Common hazardous waste, Treatment, Storage and Disposal Facilities (TSDFs)	All integrated facilities having incineration & landfill or incineration alone.	All facilities having land fill only.		
36	Common BioMedical Waste Treatment Facilities	-	All projects		
37	Ports, harbors, breakwaters and capital dredging (inside and outside the ports or harbors and channels)	≥ 5 million ton per annum of cargo handling capacity (excluding fishing harbors).	(i) < 5 million ton per annum of cargo handling capacity (excluding fishing harbors). (ii) ≥ 30000 ton per annum of fish handling capacity.	All projects in respect of Inland water ways	
38	Highways or Expressways or Multi-modal corridors or Ring Roads	i) New National Highways or Expressways or Multi-modal corridors or Ring Roads ii) Expansion or widening of existing National Highways or Expressways or Multi-modal corridors or Ring Roads by length more than 100 km involving widening or right of way more than 70 m on existing alignments or re-alignments or by-passes.	(i) All new State Highway projects (ii) State Highway expansion projects in hilly terrain (above 1,000 meter above mean sea level).	(i) Expansion or widening of existing National Highways or Expressways or Multi-modal corridors or Ring Roads by length between 25 km and 100 km involving widening or right of way more than 70 m on existing alignments or realignments or bypasses. (ii) Expansion or widening of existing State Highways (500 m to 1000 m above mean sea level)	Note: Width at toll plaza and junction improvement at intersection of other roads excluded from right of way.
39	Aerial ropeways	-	-		
40	Common Effluent Treatment Plants (CETP)	-	All projects	-	

41	Common Municipal Solid Waste Management Facility (CMSWMF) involving land filling and / or incineration	-	All projects	-	
42	Building Construction and Area Development projects	-	>1,50,000 sq. mtrs. of built-up area and or total land area of > 50 hectare	(i) >20,000 sq. mtrs. and 50,000 sq. mtrs. Of built-up area (ii) > 50,000 sq. mtrs. and < 1,50,000 sq. mtrs. of built-up area projects having provisional 'certificate of green building' or relating to industrial sheds, educational institutions, hospitals and hostels for educational institutions	Note 1. Projects under (i) and (ii) of Column (5) shall not be referred to Appraisal Committee. 2. Any change in the intended use, prior permission from the Regulatory Authority for amendment in the prior EP shall be obtained. All such cases shall be referred to Appraisal Committee.
				> 50,000 sq. mtrs. and < 1, 50,000 sq. mtrs. of built-up area	Note: Projects under Column (5) shall be referred to Appraisal Committee
43	Elevated roads or standalone flyovers or bridges	-	-	>1,50,000 sq. mtrs. of built-up area	
<p>Note:</p> <ol style="list-style-type: none"> General Conditions shall not apply for:- <ol style="list-style-type: none"> Items 9, 10(f), 11(b), 25, 38, 40, 41, 42, and 43 River bed mining projects on account of inter-state boundary; and All Category 'B2' projects. Category 'B2' projects shall not be placed before Appraisal Committee except for those projects mentioned against the item 					

Source: Based on Draft EIA Notification (No. S.O.750(E) dated 17th Feb, 2020) of MoEF&CC, modified by the JICA Study Team (2020)

Attachment 10.3.2 Stages and Procedures for EC as per the draft EIA Notification 2020

Stages	Description
Scoping	<p>(1) All projects listed under Category “B2” of the Schedule shall not require Scoping.</p> <p>(2) To facilitate due diligence by the Project Proponent including collection of primary or secondary data, as the case may be, even before filing of application for grant of ToR or prior-EC or prior-EP, sector wise Standard ToR developed by the Ministry, from time to time, shall be displayed on the website of the Ministry.</p> <p>(3) The Standard ToR shall be issued to the following projects through online mode, on acceptance of application within 7 working days, without referring to Appraisal Committee by the Regulatory Authority:</p> <p>(a) All Highway projects in Border Areas covered under entry (i) and (ii) of columns (3) and (4) against item 38 of the Schedule; (b) All projects, proposed to be located in notified industrial estates and which are not disallowed in such notification; (c) All expansion proposals of existing projects having earlier Prior Environment Clearance; (d) All Building construction and Area development projects covered under entries of column (4) against item 42 and 43 of the Schedule.</p> <p>(4) All new projects other than specified in sub-paragraph (3) above, shall be referred to the Appraisal Committee by the Regulatory Authority within 30 days from the date of application, for recommending the specific ToR in addition to the Standard ToR, if deemed necessary. In case, the Regulatory Authority does not refer the matter to the Appraisal Committee within 30 days of date of application in Form-I, sector specific Standard ToR shall be issued, online, on 30th day, by the Regulatory Authority.</p> <p>(5) Applications for ToR may be rejected by the Regulatory Authority concerned on the recommendation of the Appraisal Committee. In case of such rejection, the decision together with reasons for such rejection, shall be communicated to the Project Proponent in writing after due personal hearing within sixty days of the receipt of the application.</p> <p>(6) The project proponent shall prepare the EIA report based on the sector specific Standard ToR as well as specific ToR, if any, stipulated by the Appraisal Committee.</p> <p>(7) The Terms of Reference for the projects except for River valley projects, issued by the regulatory authority concerned, shall have the validity of four years from the date of issue. In case of the River valley projects, the validity will be for five years.</p> <p>(8) In case of any change in the scope of the project, for which the ToR was prescribed by the Regulatory Authority, an application shall be made by the project proponent, online, in Form-3, for amendment in ToR within the validity of the ToR and before public consultation. All such proposals may be referred to the Appraisal Committee, if required, within 30 days from the date of application. However, the validity of the amended ToR will be counted from the date of issue of earlier ToR.</p> <p>(9) In case, more than one proposal is received for the same land or having land overlapping with the other project(s), in part or full for which, ToR or prior-EC or prior-EP, have already been granted to some other project, all such cases will be kept on hold. The Regulatory Authority will make written communication to the Chief Secretary of the Concerned State or Union Territory and the decision will be taken based on the advice of the State Government or Union Territory administration.</p>
Environment Impact Assessment Report	<p>(1) Baseline data shall be collected as per the protocols specified in the sector specific EIA Guidance manuals issued by the Ministry or prescribed by CPCB from time to time.</p> <p>(2) Baseline data shall be collected for one season other than monsoon for EIA Report in respect of all projects other than River Valley projects. However, the baseline data of monsoon season shall also be required to be collected, in case of such requirement being prescribed by the Appraisal Committee while granting the ToR.</p> <p>(3) Baseline data shall be collected for one year including monsoon for EIA Report in respect of River Valley projects.</p> <p>(4) The collection and analysis of baseline data shall be carried through an environment laboratory duly notified under Environment (Protection) Act, 1986.</p> <p>(5) The secondary data available shall also be considered as baseline for the projects proposed beyond 12 Nautical Miles.</p> <p>(6) Baseline data, referred in sub-clause (1) to (5) above, can be collected at any stage, irrespective of the application for the scoping. However, such baseline data shall not be older than three years at the time of submission of draft EIA Report to the SPCB or UTPCC for Public Consultation.</p>

Stages	Description
	<p>(7) The post-project monitoring data collected through an environment laboratory duly notified under Environment (Protection) Act, 1986 shall also considered for expansion or modernization of the projects.</p> <p>(8) The EIA Report shall be prepared as per the generic structure given at Appendix-X, by the project proponent through an ACO, which are accredited for a particular sector and the category of project for that sector.</p> <p>(9) Draft EIA report shall be prepared for the purpose of public consultation and Final EIA Report for the purpose of appraisal.</p> <p>(10) Disclosure of the accredited EIA Consultant Organization along with the EIA Coordinator and Functional Area Expert(s) involved in the environment impact assessment shall be included in the EIA Report in the format specified at AppendixXIII and they are accountable for the contents or data provided therein in addition to the project proponent.</p> <p>(11) No EIA Report shall be required for the projects listed under Category 'B2'. However, EMP Report as per the generic structure given at Appendix-XI shall be prepared through ACO and submitted along with the application.</p>
Public Consultation	<p>(1) The public consultation shall ordinarily have two components comprising of:</p> <ol style="list-style-type: none"> A public hearing at the site or in its close proximity, district wise in case of the project area located in more than one district, to be carried out in the manner prescribed in the notification, for ascertaining concerns of local affected persons; Inviting responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project; In addition, if required, based on the nature of project, public consultation through any other appropriate mode may be recommended by the Appraisal Committee, or the Regulatory Authority, on case to case basis; However, the Regulatory Authority may decide on the feasibility and requirement of Public Hearing and/or consultation in the case of defence projects being considered under sub-clause (7) of clause 5 of this notification. <p>(2) All Category 'A' and Category "B1" projects of new or expansion proposals or modernization with capacity increase more than 50 percent shall undertake Public Consultation. Provided, the public consultation is exempted for the following:-</p> <ol style="list-style-type: none"> modernization of irrigation projects falling under the item 4 of the Schedule; all projects falling under items 10(f), 16, 17, 19, 20, 21, 23, 24, 25, 27, 36, 40 of the schedule located within Notified Industrial Estates; all projects falling under item 42 and 43 of the schedule; all Category 'B2' projects and activities; all projects concerning national defence and security or involving other strategic considerations as determined by the Central Government; all linear projects under item 31 and 38, in Border Areas. All the off-shore projects located beyond the 12 Nautical Miles Provided further, that in all the projects under item 31 of the schedule, the public consultation shall be limited to the district (s), where the National Park or Sanctuary or Coral Reef or Ecological Sensitive Area is located. <p>(3) Where a public consultation through public hearing is required, the project proponent shall submit a request letter in the specified format as given at Appendix-I to the concerned Member Secretary of SPCB or UTPCC, as the case may be, in whose jurisdiction the project is located, along with at least 10 hard copies and a soft (electronic) copy of the Draft EIA Report prepared in English; and at least 10 hard copies of summary of EIA Report in English and in the official language of the State or Union Territory or Regional language.</p> <p>(4) In case the project site is covering more than one District or State or Union Territory, the project proponent shall make separate requests to each concerned SPCB or UTPCC for holding the public hearing as per the procedure.</p> <p>(5) The public hearing including submission of proceedings of public hearing to the concerned Regulatory Authority, shall be completed by the SPCB or UTPCC concerned within a period of forty working days from date of receipt of the request letter from the project proponent.</p> <p>(6) In case the SPCB or UTPCC concerned does not undertake and complete the public hearing within the specified period, as above, the Regulatory Authority shall engage another public agency or authority which is not subordinate to the Regulatory Authority, to complete the process within a further period of forty working days, as per procedure laid down in this Notification.</p> <p>(7) If the public agency or authority nominated under the sub-clause (7) above reports to the Regulatory Authority concerned that owing to the local situation, it is not possible to conduct</p>

Stages	Description
	<p>the public hearing in a manner which will enable the views of the concerned local persons to be freely expressed, it shall report the facts in detail to the concerned Regulatory Authority, which may, after due consideration of the report and other reliable information that it may have, decide that the public consultation in the case need not include the public hearing.</p> <p>(8) For obtaining responses in writing from other concerned persons having a plausible stake in the environment aspects of the project, the concerned SPCB or UTPCC shall invite responses from such concerned persons by placing the Summary EIA report prepared by the applicant along with a copy of the application in the prescribed form, on their website, within ten days of the receipt of a written request for arranging the public hearing. Confidential information including non-disclosable or legally privileged information involving Intellectual Property Right, source specified in the application shall not be placed on the web site. The Regulatory Authority concerned may also use other appropriate media for ensuring wide publicity about the project. The Regulatory Authority shall, however, make available on a written request from any concerned person the Draft EIA report for inspection at a notified place during normal office hours till the date of the public hearing. All the responses received as part of this public consultation process shall be forwarded to the project proponent through the quickest available means.</p> <p>(9) After completion of the public consultation, a copy of proceedings of public hearing will also be provided to the project proponent. The project proponent shall address all the material environment concerns expressed during this process, and make appropriate changes including mitigation plan in the draft EIA Report and the EMP. The final EIA report, so prepared, shall be submitted by the project proponent to the concerned Regulatory Authority for appraisal.</p>
Appraisal	<p>(1) The application, submitted by the project proponent, shall be scrutinized within fifteen working days from the date of its receipt, strictly with reference to the ToR prescribed for the project by the concerned Regulatory Authority. The inadequacies in the application shall be communicated online, or completed application shall be accepted online.</p> <p>(2) Every application, except for the matters falling under Category 'B2' unless specifically mentioned against the item in the schedule, accepted by the Regulatory Authority, shall be placed before the Appraisal Committee and its appraisal shall be completed within forty-five working days of the acceptance of the application. The recommendations of the Appraisal Committee, through the minutes of meeting, shall be displayed on the website of the concerned Regulatory Authority.</p> <p>(3) Every application for the matters falling under Category 'B2' unless specifically mentioned against the item in the schedule, on acceptance of application by the Regulatory Authority, shall be issued prior-EP through online system appending standard conditions applicable to those projects within fifteen working days from the date of application. In case of rejection of the application shall inform reasons for the same.</p> <p>(4) The appraisal in respect of cases, as per the sub-clause (2) of clause 15 of this notification, shall be made by Appraisal Committee in a transparent manner in a proceeding to which the project proponent shall be invited for furnishing necessary clarifications in person or through an authorized representative (not below the level of officer in Board of Directors) or through video conference. The project proponent may take assistance of the EIA Coordinator and Functional Area Expert(s) involved in the preparation of EIA report during appraisal, before the committee. On conclusion of this proceeding, the Appraisal Committee shall make categorical recommendations to the Regulatory Authority concerned either for grant of prior-EC on stipulated terms and conditions, or rejection of the application for prior-EC, together with reasons for the same.</p> <p>(5) In case the project is recommended for grant of prior-EC, then the minutes shall clearly list out the specific environment safeguards and conditions. In case the recommendations are for rejection, the reasons for the same shall also be explicitly stated.</p> <p>(6) The project proponent shall be informed at least ten days prior to the scheduled date of meeting of the Appraisal Committee, through online system regarding consideration of the proposal and agenda of the meeting.</p> <p>(7) No fresh studies shall be sought by the Appraisal Committee at the time of appraisal, unless new facts come to the notice of the Appraisal Committee and it becomes inevitable to seek additional studies from the project proponent and same shall be clearly reflected in the minutes of the meeting.</p> <p>(8) In case of the projects under column (4) of Item 42 of the Schedule having provisional certificate of Green Building, the proposals shall be considered on priority. (9) Ministry shall</p>

Stages	Description
	<p>issue guidelines for the Corporate Environment Responsibility from time to time, envisaging slabs for new projects; expansion projects; modernization projects, proposed to be located in Critically Polluted Areas, Severely Polluted Areas, Other Areas, etc.</p> <p>(10) The proposal shall be placed before the Competent Authority within fifteen working days from the date of display of minute of the meeting of the Appraisal Committee for final decision.</p> <p>(11) The Competent Authority within another fifteen working days shall take final decision.</p>
Monitoring	<p>(1) The project proponent shall prominently advertise, at his own cost in at least two local newspapers, the fact that the project has been accorded prior-EC or prior-EP, as the case may be, along with the details of website of Regulatory Authority, where the copy of prior-EC or prior-EP, as the case may be, shall be displayed. Copy of the prior-EC or prior-EP, as the case may be, shall also be displayed permanently on the website of the company and relevant project.</p> <p>(2) The Regulatory Authority shall place the prior-EC or prior-EP, as the case may be, in the public domain on its designated portal.</p> <p>(3) The copies of the prior-EC shall be submitted by the project proponents to the following authorities within thirty days of grant of clearance, who in turn have to display the same for thirty days from the date of receipt: (a) District Magistrate / District Collector / Deputy Commissioner/s; (b) Zila Parishad or Municipal Corporation or Panchayats Union; (c) District Industries Office; (d) Urban Local Bodies (ULBs) / Panchayati Raj Institutions concerned / Development authorities; (e) Concerned Regional Office of the Ministry; and (f) Concerned Regional office of SPCB or UTPCC.</p> <p>(4) It shall be mandatory for the project proponent to submit compliance reports in respect of conditions stipulated in prior-EC or prior-EP, as the case may be, pertaining to previous financial year by 30th June, online through the designated portal. The yearly compliance report shall be submitted, each year, from the date of grant of prior-EC, till the project life, to the Regulatory Authority concerned. However, Regulatory Authority can seek such compliance reports at more frequent intervals, if deemed necessary.</p> <p>(5) In case of failure to submit yearly compliance reports in respect of the conditions stipulated in prior-EC or prior-EP, as the case may be, pertaining to previous financial year by 30th June, of the relevant financial year, a late fee of Rs. 500/- per day in case of Category 'B2' projects; Rs. 1000/- per day in case of Category 'B1' projects; and Rs. 2,500/- per day in case of Category 'A' projects shall be levied. If such non-submission of the compliance reports in respect of the stipulated conditions in prior EC or prior-EP, as the case may be, conditions continue for a period of consecutive three years, the prior-EC or prior-EP, as the case may be, shall be deemed to have been revoked without any notice in this regard.</p> <p>(6) All the compliance reports submitted by the project proponent shall be available on the website of the concerned Regulatory Authority.</p> <p>(7) The latest compliance report shall also be displayed on the web site of the project proponent.</p> <p>(8) The compliance monitoring of conditions prescribed in respect of prior-EC, for Category 'A' projects shall be carried out by the Regional office of the Ministry or Regional Directorate of CPCB. The monitoring report shall be uploaded on the designated web portal within fifteen days from the date of inspection.</p> <p>(9) The compliance monitoring of conditions prescribed in respect of prior-EC, for Category 'B1' and prior-EP for Category 'B2' projects, shall be carried out by the SPCB or UTPCC. The monitoring report shall be uploaded on the designated web portal within fifteen days from the date of inspection.</p> <p>(10) Notwithstanding above provisions, to supplement the efforts of the Ministry for monitoring through Regional office of the Ministry, Regional Directorate of CPCB, SPCB or UTPCC, the Ministry may empanel government institutions of national repute for carrying out compliance monitoring of conditions of prior-EC or prior-EP, as the case may be, of projects in a random manner.</p> <p>(11) The compliance monitoring shall be done inter-alia against the baseline information available in the EIA Report as appraised by Appraisal Committee, terms and conditions of the prior-EC or prior-EP, as well as other provisions, as may be specified by the Ministry, from time to time.</p>

Source: Based on Draft EIA Notification (No. S.O.750(E) dated 17th Feb, 2020) of MoEF&CC, modified by the JICA Study Team (2020)

Attachment 10.4.1 Annual Average Data on Water Quality, Uttarakhand (2019)

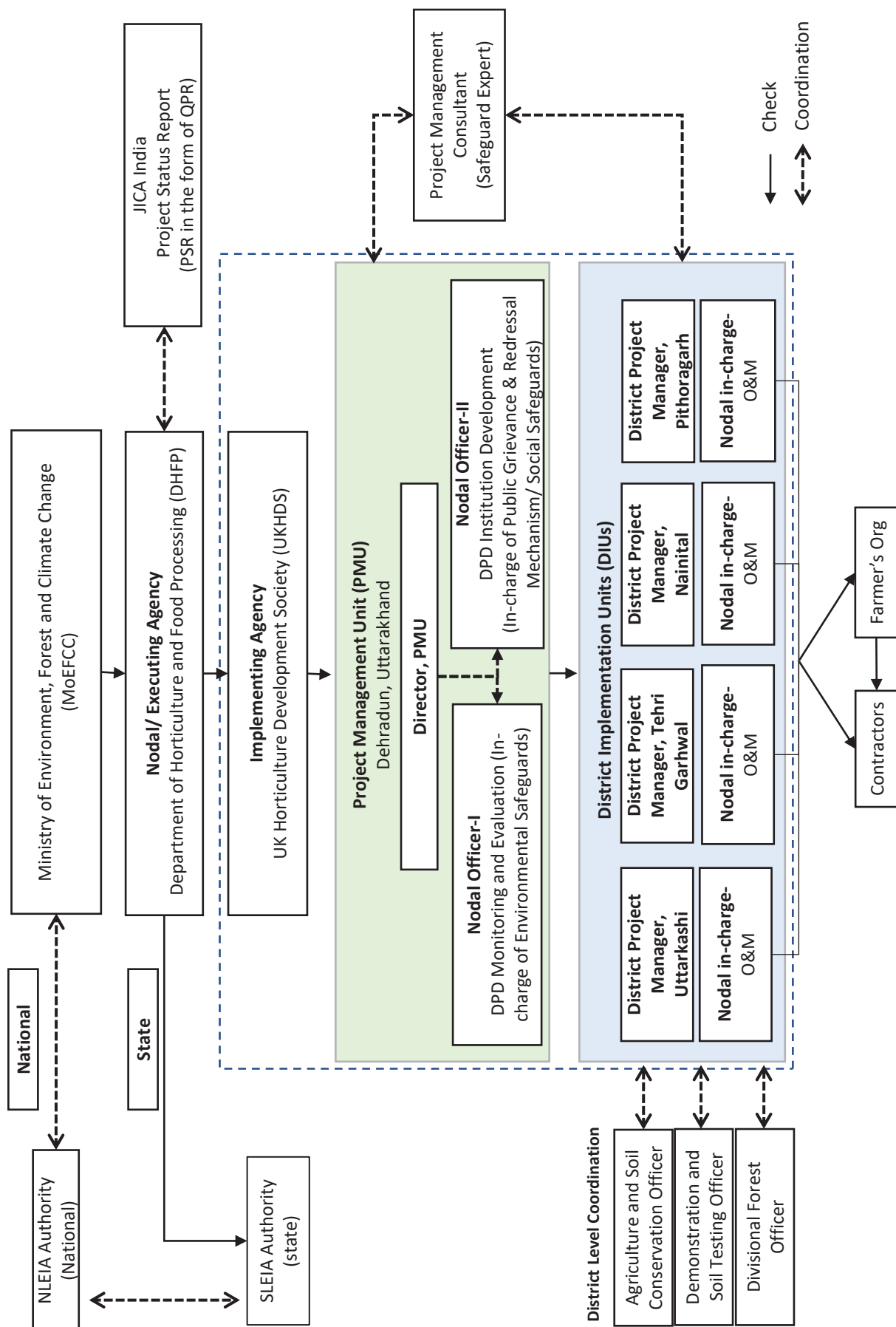
Sl. No.	Station	pH	BOD (mg/L)	COD (mg/L)	Conductivity (µmoh m/cm)	Temp (°C)	DO (mg/L)	Alkalinity as CaCO ₃ (mg/L)	Chlorides (mg/L)	Calcium as Ca (mg/L)	Magnesium as Mg (mg/L)	Hardness as CaCO ₃ (mg/L)	Total Dissolved Solids (mg/L)	Fecal Coliform (MPN/100 mL)	Total Coliform (MPN/100 mL)
	STANDARD (Minimum)	6.5					>5								
	STANDARD (Maximum)	8.5	<3											<2500	
1	River Ganga Canal at Harki Pauri Haridwar (Upper Ganga Canal)	7.91	1.00	4.00		19.25	9.67	70.25	6.42	42.83	29.33	72.17	92.75	33.27	78.33
2	Upper Ganga Canal D/S Harki Pauri, (Harki Pauri Haridwar at Rishikul Bridge), Haridwar	7.95	1.00	4.00		18.67	9.83	72.33	5.75	46.50	30.75	77.25	94.58	40.91	90.00
3	Upper Ganga Canal D/S Roorkee, Haridwar	7.91	1.02	4.67		18.58	9.38	74.92	7.25	45.67	35.08	77.08	98.92	66.36	137.50
4	Ganga Canal at Dam Koti, Haridwar (Upper River Ganga Canal at Harki Pauri)	7.93	1.00	4.00		18.75	9.90	69.67	6.83	45.67	31.83	77.50	89.83	36.73	80.00
5	Ganga at Haridwar U/S Bindhughat, Dudhivan, Haridwar	8.00	1.02	5.17		18.92	9.33	77.58	6.25	43.83	33.92	77.75	103.17	65.45	137.50
6	Ganga at Haridwar D/S Balakumari Mandir, Ajeetpur, Haridwar	7.65	1.18	6.25		18.83	8.95	96.67	10.08	52.58	35.50	88.08	138.25	146.36	269.17
7	Ganga Canal at Lal Ta Rao Bridge, Haridwar (Upper Ganga Canal), Haridwar	8.00	1.00	4.00		19.00	9.48	74.17	6.17	46.92	32.00	78.92	90.50	40.27	88.33
8	Suswa River at Mothrawala, (Suswa (D/S) Mathurawala), Dehradun	7.78	27.33	117.67		19.50	2.78	272.83	27.08	216.00	106.33	322.33	382.08	7.84	
9	River Ganga after confluence of River Song near Sayanarayan Temple D/S Raiwala, Dehradun	7.90	1.03	5.67		19.58	9.15	80.17	8.17	49.42	37.08	86.50	159.08	98.18	201.67
10	River Ganga at Rishikesh U/S Lakshmanjhula, Swargashram U/S of Rishikesh	7.76	1.00	4.00		18.25	10.22	63.75	5.33	41.50	28.17	69.67	82.25	20.09	45.83
11	Ganga at D/S of Rishikesh, Near Pashulok	7.78	1.00	4.00		18.92	9.77	69.08	5.50	42.17	31.00	74.00	88.33	33.09	71.67
12	River Yamuna at U/S of Lakhwar Dam, Dehradun, (River Yamuna U/S Lakhwar Dam)	7.91	1.00	4.00		17.50	9.60	73.75	6.25	49.00	33.50	82.50	91.00	24.67	43.00
13	River Yamuna at U/S Dakpathar, Dehradun	7.62	1.05	5.00		18.50	8.90	68.00	7.50	49.50	29.00	78.50	99.25	106.67	182.50
14	River Alaknanda A/C Mandakini at Rudrapur	7.80	1.00	4.00		17.25	9.70	64.50	5.25	43.50	28.50	72.00	71.00	2.00	2.00
15	River Mandakini B/C Alaknanda at Rudrapur	7.86	1.00	4.00		17.50	9.55	60.00	4.75	41.50	27.00	68.50	66.75	2.00	2.00
16	River Alaknanda B/C Mandakini at Rudrapur	7.77	1.00	4.00		18.00	9.80	62.00	4.25	40.50	30.50	71.00	67.75	2.00	2.00
17	River Alaknanda A/C Bhagirathi at Devprayag	7.88	1.00	4.00		18.00	9.75	61.00	5.25	41.00	26.50	67.50	71.00	2.00	2.00
18	River Alaknanda B/C to Bhagirathi at Devprayag	7.82	1.00	4.00		18.00	9.55	60.00	5.00	39.00	27.00	66.00	65.50	2.00	2.00
19	River Bhagirathi B/C with Alaknanda at Devprayag	7.82	1.00	4.00		17.50	9.75	59.50	5.00	39.00	28.00	67.00	63.50	2.00	2.00
20	River Bhagirathi at Gangotri, Uttarkashi	7.64	1.00			5.00	10.80	56.00	4.00	46.00	26.00	72.00	82.00		2.00
21	Ground Water - Handpump CHC, Bhagwanpur, Haridwar	7.20			1044.00	18.00		425.00	38.00	188.00	24.00	212.00	718.00		2.00
22	Ground Water - Handpump Vill-Sunhera, Haridwar	7.21			890.00	18.00		432.00	52.00	180.00	38.00	218.00	576.00		2.00
23	Ground Water - Handpump Ramnagar Industrial Area, Roorkee, Haridwar	7.18			572.00	20.00		298.00	50.00	90.00	22.00	218.00	380.00		2.00

Sl. No.	Station	pH	BOD (mg/L)	COD (mg/L)	Conductivity (µmohm/cm)	Temp (°C)	DO (mg/L)	Alkalinity as CaCO ₃ (mg/L)	Chlorides (mg/L)	Calcium as Ca (mg/L)	Magnesium as Mg (mg/L)	Hardness as CaCO ₃ (mg/L)	Total Dissolved Solids (mg/L)	Fecal Coliform (MPN/100 mL)	Total Coliform (MPN/100 mL)
24	Ground Water -Handpump Sikendarpur Lakheswari, Roorkee, Haridwar	7.12			1770.00	19.00		380.00	68.00	120.00	110.00	230.00	1140.00		2.00
25	Ground Water -Handpump Saleempur Chowk, Roorkee, Haridwar	7.38			970.00	20.00		275.00	35.00	190.00	26.00	216.00	648.00		2.00
26	Ground Water -Handpump Roshnabad Colletorate, Haridwar	7.02			422.00	18.00		120.00	18.00	74.00	16.00	90.00	288.00		2.00
27	River Ganga, D/S Lakkarghat O.P., Haridwar	8.14	1.00	6.00		22.75	9.20	136.75	10.50	63.25	39.50	102.75	235.75	53.33	135.00
28	River Ganga, D/S Swargaashram-I, Haridwar	8.03	1.00	4.00		19.75	9.70	65.75	8.25	43.00	26.50	69.50	103.50	53.33	137.50
29	Naini Lake at Nainital (Water Intake Point), Nainital	7.67	1.62	5.68	402.50	13.50	7.00	237.50	20.00	164.83	119.17	284.00	282.67		
30	Bheemtal Lake, Nainital	7.51	1.43	5.52	197.00	15.08	6.87	140.67	17.25	94.67	77.00	171.67	136.08		
31	Gola River at Halchvani, (River Gola, Nainital)	7.52	1.55	5.75	223.33	18.00	7.28	134.67	20.58	102.00	83.17	185.17	147.42		
32	Ground Water -Handpump Near Govt. Primary, Kashipur	7.50	1.60	5.60	326.00	30.00	0.00	210.00	15.00	154.00	126.00	280.00	214.00		
33	Ground Water -Handpump Near Chaithi Chau- raha, Bazpur Road, Kashipur	7.40	8.00	20.00	296.00	30.00	0.00	224.00	18.00	122.00	102.00	224.00	193.00		
34	Ground Water -Handpump in village Damauda at Kashipur near India Glycos Ltd.	7.50	3.20	4.60	240.00	30.00	0.00	160.00	24.00	104.00	96.00	200.00	156.00		
35	Ground Water -Handpump Near Kendriya Vidhyala, Bazpur Road, Kashipur														
36	Ground Water -Handpump Near Govt. Gurdwara, Muradabad Road, Kashipur	7.50	1.60	4.20	249.00	30.00	0.00	218.00	26.00	120.00	110.00	230.00	162.00		
37	Ground Water -Handpump Near Sitarganj, Industrial Area-1, Kashipur	6.80	1.80	3.20	535.00	30.00	0.00	264.00	26.00	114.00	128.00	242.00	348.00		
38	Ground Water -Handpump Near Sitarganj, Industrial Area-2, Kashipur	7.50	13.00	20.00	323.00	30.00	0.00	214.00	16.00	122.00	138.00	260.00	210.00		
39	Ground Water -Handpump at Pantnagar, Industrial Area-1	7.40	1.80	4.20	296.00	29.00	0.00	215.00	16.00	110.00	128.00	238.00	196.00		
40	Ground Water -Handpump at Pantnagar, Industrial Area-2	7.50	2.00	4.00	263.00	30.00	0.00	176.00	18.00	116.00	105.00	221.00	171.00		
41	Ground Water -Handpump at Santipuri, Kichha-1														
42	Ground Water -Handpump at Santipuri, Kichha-2														
43	Water Quality Data Kumaun Rivers	7.43	4.45	20.64	378.09	28.27	5.80						258.82		
44	Dhella River U/S at Kashipur Moradabad Road Bridge, (U/S Moradabad Road) US Nagar	7.36	6.92	23.90	290.70	23.20	5.54						164.30		
45	Dhella River D/S at Thakurdwara, Aliganj Road, US Nagar	7.45	19.06	68.10	482.80	23.90	1.56						281.10		
46	Bhella River U/S Kashipur, (U/S Ramnagar Road), US Nagar	7.31	3.61	23.62	267.80	24.00	4.86						161.80		

Sl. No.	Station	pH	BOD (mg/L)	COD (mg/L)	Conductivity (µmoh m/cm)	Temp (°C)	DO (mg/L)	Alkalinity as CaCO ₃ (mg/L)	Chlorides (mg/L)	Calcium as Ca (mg/L)	Magnesium as Mg (mg/L)	Hardness as CaCO ₃ (mg/L)	Total Dissolved Solids (mg/L)	Fecal Coliform (MPN/100 mL)	Total Coliform (MPN/100 mL)
47	Bhella River at Lohia Bridge D/S Kashipur (D/S Lohiya Bridge), US Nagar	6.97	39.67	115.17	489.42	25.75	0.58						315.42		
48	Pitkhari River at Bilaspur, Rampur, US Nagar	7.52	6.85	31.67	396.75	25.58	5.38						257.33		
49	Nanduar River U/S Sitarganj Industrial Area, (Nandour U/S Sitarganj), US Nagar	7.52	6.12	26.00	203.80	25.00	5.44						121.20		
50	Nanduar River D/S Sitarganj Industrial Area, (Nandour D/S Sitarganj), US Nagar	7.56	6.93	31.00	376.83	26.17	5.30						219.50		
51	Kichha River at Kichha, (River Kichha (U/S Nagarbhalla, Kashipur), US Nagar	7.34	6.13	32.67	503.25	26.25	4.57						342.92		
52	Kalyani River at U/S Pantnagar Industrial Area, US Nagar	7.41	5.58	22.75	419.50	26.33	5.25						249.83		
53	Kalyani River at D/S Pantnagar Industrial Area, US Nagar	7.08	11.45	39.50	500.42	25.75	3.33						307.33		

Source: Compiled and modified by the JICA Study Team (2021) based on monthly water quality data from CPCB

Attachment 10.5.1 Safeguard Flow



**Attachment 10.6.1 Draft Environmental and Social Assessment Framework
(ESAF)**

Table of Contents

	<i>Page</i>
1 Background	1
2 Objectives and Scope of ESAF	1
1.1 Objectives of ESAF	1
1.2 Target Social Groups of ESAF	2
1.3 Structure of ESAF	4
2 Project Summary Description	5
3 Environmental and Social Safeguard Policies of JICA	6
3.1 JICA Principles for Environmental and Social Considerations	6
3.2 Key Process Elements as per the requirements of JICA Guideline	6
3.3 Compatibility with International Standards	8
3.4 Requirements as per JICA Guidelines	8
4 Existing Environmental and Social Management Systems	9
4.1 Existing Systems for Environmental Management	9
4.2 Existing Systems for Social Management	11
4.3 Existing Agencies for Environment and Social Management System	13
5 Environmental and Social Considerations, Potential Impacts and Mitigation Measures	13
5.1 Environmental Considerations and its Potential Impacts	14
5.2 Social Considerations and Potential Impacts	15
6 Environmental and Social Management Measures and Monitoring	22
6.1 Screening and Selection of Sub-Projects	23
6.2 Environmental and Social Assessments	23
6.3 Preparation of Environmental Management Plan	26
6.4 Preparation of Environmental Monitoring Plan	30
6.5 Implementation and Monitoring of Sub-projects	32
7 Institutional Arrangement and Capacity Development for ESAF	32
7.1 Institutional Arrangement	32
7.2 Capacity Development Programme	35
8 Public Consultation Mechanism	36
9 Grievance Redress Mechanism	37
10 Cost Estimation and Budget Allocation	38
10.1 Personnel	38
10.2 Capacity Development Programme	39

Draft Environmental and Social Assessment Framework (ESAF)

1 Background

The state of Uttarakhand, constitute the Kumaon and Garhwal Himalayas with a geographical area of about 53,485 km² and a population of 10.1 million, out of which 70% live in rural area (Census of India 2011). The state is divided in 13 districts. More than 75% of the total population of Uttarakhand depends on agriculture for their livelihood, however, the landholdings are small and fragmented and irrigation facilities are not adequately developed due to the hilly terrain. The state is endowed with rich flora and fauna and is the origin of many perennial rivers. The region is highly fragile as it falls in the highly active seismic zone and witness frequent earthquakes, landslides, floods, forest fire and this makes the vast population highly vulnerable and their livelihood at stake.

2 Objectives and Scope of ESAF

During the course of the design and implementation of the Project, it is highly important to carefully assess the Environmental and Social vulnerabilities within the society. Environmental vulnerability is a condition when the coherence of ecosystem is threatened by human activities or interference and/or natural causes, which could occur over spatial or temporal scales. Vulnerability could possibly increase with the intensity and frequency of human interventions and/or natural hazards. Social vulnerability is inability or helplessness of people/ societies to withstand adverse impacts from multiple stressors to which they are exposed and mostly such people are socially excluded, underprivileged, often discriminated against and restricted to access benefits of development or opportunities offered through socio-economic enhancement schemes.

The Environmental and Social Assessment Framework (ESAF) for the “Uttarakhand Integrated Horticulture Development Project (UKIHDP)” has been prepared to act as the primary reference document that outlines the Environmental and Social Considerations (ESC) that will be dealt with the Env & Social vulnerabilities in project design and implementation.

2.1 Objectives of ESAF

The aim of the UKIHDP is to bring in social and economic benefits for locals including vulnerable groups such as small scale and marginal farmers, landless/landed poor, Scheduled Tribes (ST), Scheduled Castes (SCs), Other Backward Classes (OBC), etc. in the project area through the proposed project activities and the interventions. The primary objective of ESAF under UKIHDP is to mainly assess any sort of negative impacts due to project activities in the selected project area. Although, the project is not expected to have any significant negative environmental impacts however, there could be a possibility of slight negative environmental and social impacts as well that cannot be ruled out due to the developmental activities undertaken in the project. In this regard, draft ESAF is prepared to assess the negative impacts and ensure that such impacts are safeguarded against in accordance with JICA’s policies on environmental and social considerations in

development projects, as well as relevant policies, laws and regulations of the country and the state.

Although the project covers multi-sectoral interventions and activities, that would be implemented at several sites/locations, still many of these activities are yet to be defined in absolute details such as site location, coverage, size/scope of the activity. Thus, in these circumstances, it would be inapt at this stage of the project preparation to assess the environmental and social impacts and propose detailed management and mitigation measures. However, the Survey Team assessed the broad types of activities proposed and prima facie outlined procedures to manage and mitigate potential risks associated with the activities during the project implementation. Accordingly, ESAF which provides guidance on the appropriate management and mitigation measures against associated environmental and social risks has been prepared as the main safeguards instrument considering the existing environmental and social management systems in India and the state of Uttarakhand and as per JICA requirements.

2.2 Target Social Groups of ESAF

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 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 1 Key Targeted Social Groups of ESAF

Social Groups	Definition/ Description
Small scale and marginal farmers	Small scale and marginal farmers tend to be more dependent on agriculture and are thus disproportionately impacted by agriculture extension activities. For various reasons, they are generally excluded from decision-making processes. In the state of Uttarakhand, 35.1% of the rural population is considered to be below poverty line. The incidence of poverty in the project districts based on head count ratio is: Uttarkashi district (25.3%), Nainital (22.7%), Tehri Garhwal (18.1%), and Pithoragarh (15.1%).
Landless Households	‘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 neglected from development interventions as targets are often focused on farmers who have land and assets.
Women and Female Headed Households	Women play a specific and differentiated role in terms of agricultural production (e.g. sowing, tending/weeding, marketing/selling produce, collection of NTFPs, craft production). 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. Female Headed Households should also be a key target group as they are a particularly vulnerable sub-group with typically limited asset/livelihood options.
Affected Persons/	Criteria to be defined as “Affected Persons/ Families” are as follows; a) Whose land or other immovable property has been acquired,

Social Groups	Definition/ Description
Families	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) Whose primary source of livelihood, three years prior to acquisition of land, is dependent of forests or water bodies, and whose livelihood is affected due to acquisition of land, and d) Member of family who has been assigned land by the Government (central/ state) under any scheme, and such land has been acquired.

Source: Compiled and modified by JICA Survey Team (2021)

2.3 Structure of ESAF

ESAF of the Project is structured as follows:

- i) **Project Summary Description** will describe the project objectives, proposed 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, including the procedures for the preparation of environmental management plan and environmental monitoring plan,
- vi) **Institutional Arrangement and Capacity Development for ESAF:** identifies the recommended institutional arrangement and capacity development and training requirements for effective implementation of ESAF,
- vii) **Public Consultation Mechanism:** describes the mechanisms for public consultations including Free, Prior and Informed Consent (FPIC) as one of important principles,
- viii) **Grievance Redress Mechanism:** identifies the available and suggested mechanisms for grievance redress, and
- ix) **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 Project Summary Description

Outline of the project is summarized as follows.

Table 2 Project Summary Description

Item	Description
Project Objectives	The objective of the Project is to promote profitable horticulture and improve farmer's income by infrastructure development and capacity development for production, processing and marketing of horticulture crops, thereby contributing to economic and social development in Uttarakhand state.
Identified Project Area	Four districts (Nainital, Pithoragarh, Uttarkashi, Tehri Garhwal) of Uttarakhand State
Proposed Project Components	There are 4 major project components as described below. 1) Area expansion and production enhancement 2) Supply chain development 3) Institutional development for Project Management 4 Consulting service
Project Implementation Structure	<p>Department of Horticulture and Food Processing (DHFP) Uttarakhand is the nodal agency and Uttarakhand Horticulture Development Society (UKHDS), registered as an autonomous body under Societies Registration Act., shall be fully responsible for the project implementation. After completion of the project, DHFP would continue to be responsible for the efficient operation and maintenance of the assets created through the project. The Society shall have the Governing Council and Executive Committee to take necessary policy decisions. Under the UKHDS, Project Management Unit (PMU) would be established at state level with headquarter at Dehradun for smooth implementation, decision making & budgetary appropriations. At District level District Implementation Units shall be established for project implementation at the district level and below.</p> <p>State level Project Management Unit (PMU) at Dehradun: The State level PMU at Dehradun shall handle the overall project planning, management, overall project coordination including with JICA, MOA & DEA, overall procurement management, financial management including collecting the expenditure statements from District Implementation Units (DIUs) and Project Management Unit (PMU) and consolidate these for the reimbursement claims to JICA, monitoring and evaluation preparation, quarterly progress reports and Project Completion Report.</p> <p>District Implementation Units (DIUs): Four District Implementation Units (DIUs) shall be established at Nainital, Pithoragarh, Tehri Garhwal, Uttarkashi. DIUs shall function as the dedicated and extended wing of the PMU for project implementation at the District level and as a subordinate office of the autonomous society. The main function of DIUs would be to facilitate project implementation at the district level, and to extend all technical inputs and guidance to the Federation of Farmers Organisations (FPO, FPC, FSHG, MPAC, etc.)</p>
Implementation Schedule of the Proposed Project	8 years from April 2022

Source: Prepared by JICA Survey Team (2021)

4 Environmental and Social Safeguard Policies of JICA

4.1 JICA Principles for Environmental and Social Considerations

The environmental and social safeguards policies of JICA are covered within the JICA Guidelines for Environmental and Social Considerations (2010), in which it is committed to ensure that human rights are respected and that environmental issues are seriously considered in its investments, projects and programmes, with the following principles:

- ✓ JICA is committed to address environmental and social issues in a prompt/ timely manner,
- ✓ Assess a wide range of environmental and social impacts in all JICA projects/programmes,
- ✓ Issues related to environmental and social must be considered from an early stage, from design and throughout the project cycle,
- ✓ Accountability and transparency are JICA's responsibility,
- ✓ Requirement of stakeholder consultation/participation in consideration of environmental/ social issues,
- ✓ Requirement for Information disclosure, and
- ✓ Implementation of the guidelines should enhance organizational capacity to ensure appropriate consideration, management and monitoring of environmental/ social issues.

4.2 Key Process Elements as per the requirements of JICA Guideline

Key processes in JICA projects related to environmental and social considerations are summarised below;

(1) Categorisation of Projects

Projects are categorised according to the scope/severity of the environmental and social impacts or risks, indicated as follows;

- **Category A:** Significant adverse impacts (e.g. Large-scale development/ infrastructure),
- **Category B:** Generally site-specific impacts, few impacts are irreversible, normal mitigation measures can be designed,
- **Category C:** Minimal/little adverse impact
- **Category FI (Financial intermediary):** Substantial selection and appraisal of sub-projects after JICA approval of funding

The Project is categorized as category FI because the Sub-projects cannot be specified prior to JICA's approval for financing, and they may have environmental impacts under the JICA guidelines for environmental and social considerations (April 2010).

The proposed Project is not anticipated to have any significant negative impacts on the environment. Although, it is not possible to precisely state which sub-projects will be executed in which specific location and scale, the Project will exclude sub-projects that falls under "Category A" due to

significant environmental impacts or risks. The following Tables show projects which are classified as Category A according to JICA guideline

Table 3 Projects Classified as Category-A according to JICA Guidelines

Category	Sectors and Characteristics
1. Large-scale projects in the sensitive sectors	(1) Hydropower, dams, and reservoirs (2) Roads, railways, and bridges (3) Agriculture involving large-scale land clearing or irrigation
2. Project with the sensitive characteristics	(1) Large-scale involuntary resettlement (number of Displaced Persons is more than 200) (2) Large-scale land reclamation, land development, and land clearing (3) Large-scale logging
3. Projects in the sensitive areas or their vicinity	(1) National parks, nationally-designated protected areas (including areas for ethnic minorities and cultural heritage, etc. designated by national governments) (2) Areas with unique archaeological, historical, or cultural value (3) Areas inhabited by ethnic minorities, with traditional ways of life, and other areas with special social value

Source: JICA Environmental and Social Guidelines (2010)

At the time of selection, finalisation and approval of sub-projects, respective sub-projects will be categorized as either “Category B” or “Category C” according to the scope and severity of the environmental and social impacts or risks.

(2) Potential Impacts Assessment

An array of environmental and social impacts and risks are taken into account with a view towards enhancing positive benefits and at the same time avoiding/mitigating negative impacts. **Table 3** indicates the required items to be assessed as potential environmental and social impacts respectively.

Table 4 Potential Impacts to be Assessed

Type of Impact	Items to be Assessed
Environmental Impact	Potential Impact on the natural environment transmitted through air, water & ground water, soils, waste, accidents, water usage, ecosystems, fauna and flora and trans-boundary impacts.
Social Impact	Potential Impact on farmers/people’s lands, resettlement, economies, livelihoods, employment, social institutions, vulnerable groups, gender, indigenous peoples, children, health, cultural heritage, utilization of land and local resources, existing social infrastructures and services, equality of benefits and losses, local conflicts, working conditions, etc.

Source: Compiled by JICA Survey Team (2021) based on the JICA Guidelines for Environmental and Social Considerations 2010

(3) Information Disclosure and Consultation

Executing Agency (EA) of the Project shall monitor the sub-projects following the Environmental

Monitoring Programme (EMoP) which are the requirement for only Category B sub-projects. Such sub-projects information on the environmental and social impacts is encouraged to disclose to all relevant stakeholders. Also, Implementing Agency (IA) shall prepare annual report of the Project in which ESC relevant report will be incorporated as one chapter/section.

4.3 Compatibility with International Standards

JICA substantiates that projects do not deviate considerably from the World Bank's Safeguard Policies, and refers to it as a benchmark to the standards of international development agencies; to internationally recognized standards, or international standards, treaties, and declarations, etc. and to the good practices, etc. of developed nations as appropriate.

JICA also suggests international policies, procedures and standards such as of the World Bank and their relevance to the Project. Although JICA has particular apprehension with respect to Indigenous Peoples, it does not reflect a detailed policy with clear procedures for such peoples affected by the projects interventions, and refers to the World Bank Operational Policy 4.10 (OP4.10) on Indigenous Peoples. Thus, the contents and format of the safeguards framework elaborated for the Project follows that indicated in the World Bank OP 4.10, as requested by JICA for the preparation of the Project.

4.4 Requirements as per JICA Guidelines

As per the JICA guidelines, the following conditions are examined with respect to the project implementation. Financial intermediary or the executing agencies are mandated to comply with the following requirements:

- a) Ensure appropriate environmental and social considerations,
- b) Sufficiency of institutional capacity to confirm environmental and social considerations of the financial intermediary/ executing agency is sufficient; if requires adequate measures be taken to strengthen the capacity,
- c) Financial intermediary or executing agency to assess potential positive and negative environmental impacts of sub-projects, takes appropriate measures to avoid, minimise, mitigate, or compensate for potential negative impacts, and promote positive impacts if any available,
- d) Disclosure of the results of environmental reviews on its website after concluding agreement documents, and
- e) Confirm with project proponents on the results of monitoring items that have significant environmental impacts. Project proponents are undertaking environmental and social considerations for projects that fall under Categories A, B, and FI.

5 Existing Environmental and Social Management Systems

The following section focuses on the existing environmental and social management systems in

Indian and the state of Uttarakhand and examines the probable method for implementing the Project. Through the review by the Study Team, the existing legal and regulatory frameworks are confirmed to be in line with the requirement of JICA Guideline as well as the World Bank's Safeguard Policies. An overview of the environmental and social legal frameworks and institutional arrangements processes and procedures for its implementation are presented below.

5.1 Existing Systems for Environmental Management

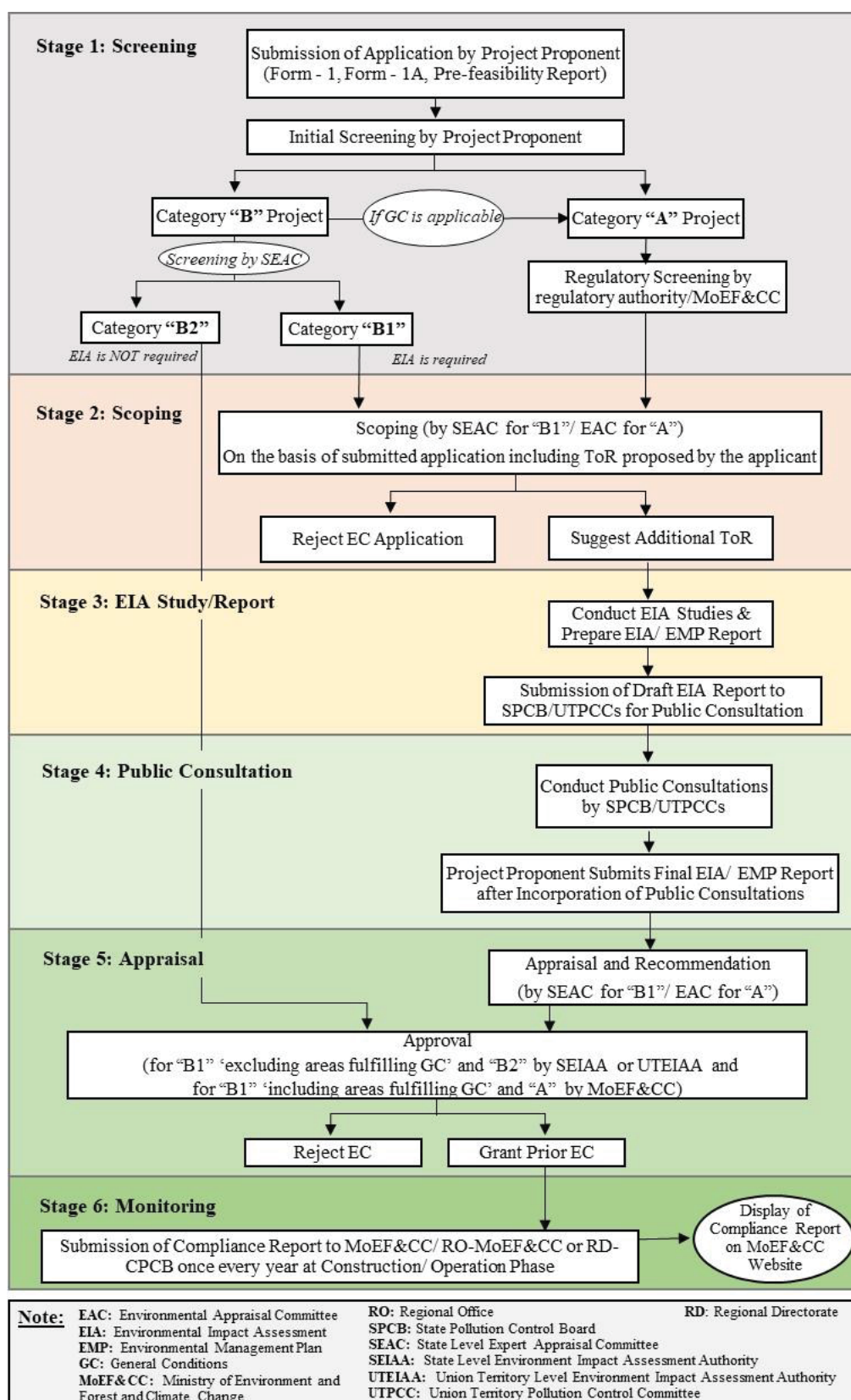
India has made a substantial effort in attempting to address environmental challenges. It has enacted stringent environmental legislation (that includes various laws, rules, regulations, notifications, and policies) for protection and management of environment and has created institutions to monitor and enforce those legislation. In the following sections, the processes adopted in India for environmental clearance is described. Under the ambit of EIA laws and regulations in India, all projects and activities requiring "Environmental Clearance" (EC) are classified broadly into two categories - **Category A** (hereafter refer to as "Indian EIA Category A") and **Category B** (hereafter refer to as "Indian EIA Category B"), which is based on the spatial extent of potential impacts on natural and man-made resources.

Indian EIA Category 'A' projects or development activities are mandated to conduct EIA studies along with conducting the "Public Consultation" as per the procedure stipulated in the Notification, and the environmental clearance is required from the Central Government or MoEF&CC.

Indian EIA Category 'B' projects fall under the purview of the state authority as mentioned in EIA notification 2006 and decentralized procedure is done. The Government of India has constituted the State Expert Appraisal Committee (SEAC) and State Environmental Impact Assessment Authority (SEIAA) committee for decentralized procedure of environmental clearance. The category 'B' projects are further divided into **Category 'B1'** (projects that require submitting an EIA report) and **Category 'B2'** project activities which do not require EIA report.¹

The stages in the environmental clearance procedure as per EIA notification 2006 is described in **Figure 1**. For convenience, stages of EIA have been divided into following six stages in this report; 1) *Screening*, 2) *Scoping*, 3) *EIA Study*, 4) *Public Consultation*, 5) *Appraisal*, and 6) *Monitoring*.

¹ Source: EIA Notification 2006



Source: Prepared by JICA Survey Team (2021) based on EPA 1984 and Notification 2006 and Amendments, MoEF&CC

Figure 1 Prior Environmental Clearance Process as per Indian EIA Law

5.2 Existing Systems for Social Management

JICA concerns that development projects are implemented with special attention to vulnerable groups such as the poor, landless/landed poor, indigenous peoples (or STs in India) and women. Rights of local communities and STs should be respected in all interventions.

The potential negative social impacts are much lower compared with the large infrastructure projects which involve physical displacement and involuntary resettlement, but still there is a possibility to negatively impacts the local communities on their livelihoods, loss of access, ownership or use rights, and increased conflicts on agriculture lands. Therefore, Relevant Social Policies, Laws and Regulations in India and the state of Uttarakhand have been identified with respect to addressing social issues and concerns, for the types of activities that have been proposed under the Project. The Project will involve the local communities to work through their respective village level implementation bodies in the designated project areas and thus the relevant labour laws are also listed up.

In the following sections, the procedures for land acquisition and involuntary resettlement applied in India are presented.

(1) Land Acquisition and Involuntary Resettlement

“The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 [No. 30 of 2013] dated 26th September 2013” (RFCTLARR Act 2013), came into force on 01st January 2014, is the legal foundation for all matters related to land acquisition and involuntary resettlement in the country.

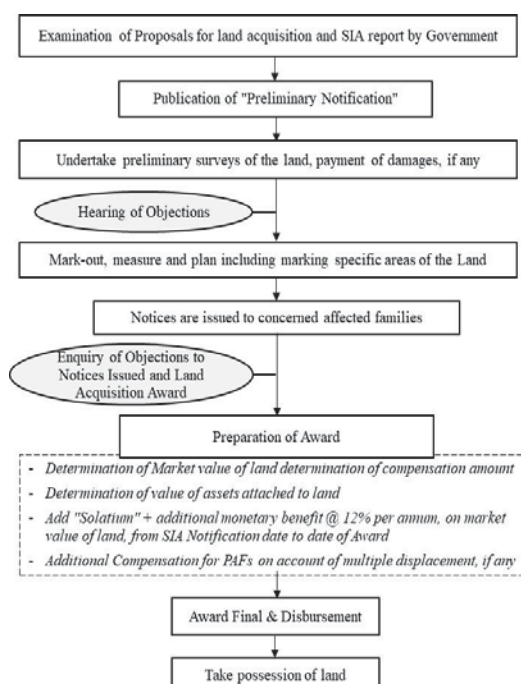
According to the Act; it ensures “a humane, participative, informed and transparent process for land acquisition for the purpose of industrialisation, development of essential infrastructural facilities and urbanisation, which is in consultation with the local self-government institutions and *Gram Sabhas* established under the Constitution”.

Also, the Act ensures that the negative impacts on the land owners and other affected families shall be minimised with the provision of just and fair compensation to the affected families, leading to an improvement in their socio-economic status for their rehabilitation and resettlement.

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement, Rules 2013. The objective behind the formulation of the Act was to bring in a transparent process of land acquisition through consultative and participatory approach for land acquisition with least disturbance to the owners/families of the land with fair compensation and appropriate rehabilitation and resettlement of the families. It mandated that a Social Impact Assessment (SIA) be conducted for all projects, except for those land that are required urgently. An SIA assesses certain aspects of the acquisition such as whether the project serves a public purpose, whether the minimum area that is required is being acquired and the social impact of the acquisition.

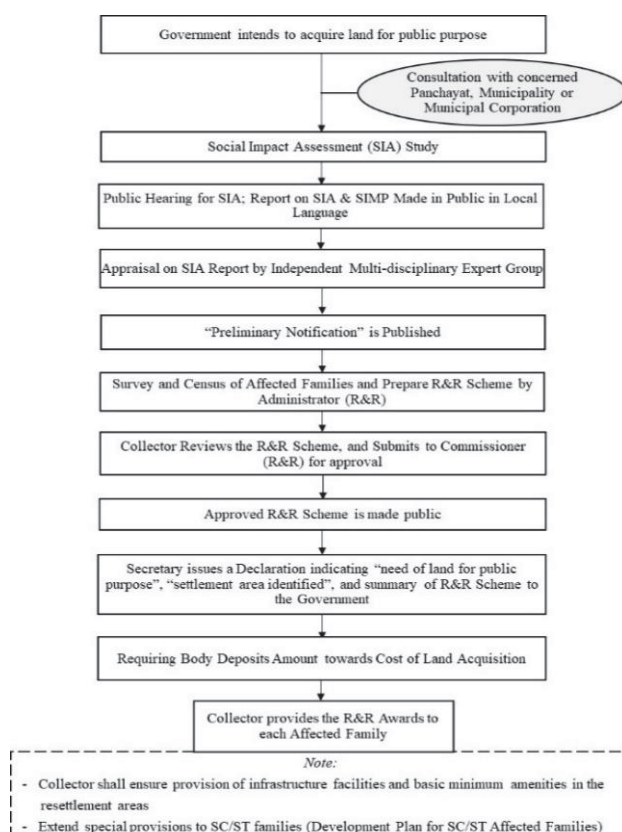
The processes involved in land acquisition and involuntary settlement are depicted in **Figure 2** and

Figure 3 respectively.



Source: JICA Survey Team (2021) based on information from RFCTLARR Act 2013 and subsequent Rules

Figure 2 Flow Diagram for Land Acquisition Process



Source: Compiled by JICA Survey Team (2021) based on information from RFCTLARR Act 2013 and subsequent Rules

Figure 3 Flow diagram for Resettlement and Rehabilitation

5.3 Existing Agencies for Environment and Social Management System

As the Executing Agency (EA), Department of Horticulture and Food Processing (DHFP) in the state government of Uttarakhand, shall be responsible for the implementation of the entire Project, while the FPOs are to control and support the project activities in their lands from farmers perspective. Key gaps and shortfalls identified in each institution in comparison to international standards as indicated in the JICA Guidelines are summarised in **Table 4**.

Table 5 Key Gaps and Shortfalls in Comparison to the Standards in the JICA Guidelines

Executing Agency/ Body	Key Gaps and Shortfalls	Possible Gap Filling Measures
Executing agency (General body of autonomous society)	<ul style="list-style-type: none"> - Prior consultations with beneficiaries and project-affected communities are limited - Insufficient appraisal of environmental and social considerations prior to implementation (weak baseline for impact evaluation) - Restricted procedures for environmental screening and subsequent management of environmental risks associated with small-scale construction and other activities with potential adverse impacts - Inadequate monitoring of safeguard processes and procedures - Lack of SMS or trained officials on social and environmental safeguards 	<ul style="list-style-type: none"> - Application of ESAF - Implementation of Capacity Development Plan for Environmental and Social Safeguards - Engagement of Environmental and Social Consideration Expert/ Specialist(s) - Consultation with Supporting technical institutions and DOA
DIUs/ FPOs	<ul style="list-style-type: none"> - Inadequate awareness of potential environmental impacts - Lack of understanding of safeguard processes and procedures - Insufficient appraisal of environmental and social considerations prior to implementation (weak baseline for impact evaluation) - Lack of monitoring of environmental and social safeguards - Lack of trained officials on social and environmental safeguards 	<ul style="list-style-type: none"> - Application of ESAF - Implementation of Capacity Development Plan for Environmental and Social Safeguards - Engagement of Environmental and Social Consideration Expert/ Specialist(s)

Source: JICA Survey Team (2021)

DHFP does not have any direct mandate and system for environment and social management, for screening, managing and monitoring environmental and social risks. Thus, it is recommended to incorporate subject matter experts and specialist within the PMU to establish and institutionalise ESMS within the project, supported by PMC in charge of environmental and social safeguards for compliance of the required environmental and social safeguards, that further described in **Section 7** of this document.

6 Environmental and Social Considerations, Potential Impacts and Mitigation Measures

As mentioned above, it is impracticable at this survey phase to assess the detailed environmental and social impacts and propose management and mitigation measures for each sub-project level which are not yet defined in detail. Therefore, in this section, the potential environmental and social impacts for proposed broad types of activities are assessed and mitigation measures are proposed through ESMS checklist (**Attachment 11**), and component-wise potential deleterious environmental and social impacts assessment (**Table 4** and **Table 5**). The purpose of the initial assessment is to summarise the potential (especially negative) impacts which could be referred when Environmental Management Plans (EMPs) as well as Environmental Monitoring Plan (EMoP) are required to prepare. Also, IA, i.e. DIUs, can refer these documents at the screening and

selection stage of sub-projects as reference documents as well as during construction phase/implementation which indicate major points to be concerned from ESC perspective.

6.1 Environmental Considerations and its Potential Impacts

(1) Environmental Scoping

JICA guidelines indicate a wide range of environmental considerations that are required to be taken into account. Initial scoping identified the following impacts on the natural environment to be assessed;

- ✓ Air, Water, Waste and Soils (resulting from infrastructure activities and agricultural chemical use)
- ✓ Ecosystems (especially fauna and flora, afforestation, sites of importance to biodiversity conservation and protected areas)

The purpose of scoping is to identify the potential environmental and social impacts caused by the Project based on available secondary data and information, and preliminary site reconnaissance.

(2) Assessment of Potential Environmental Impacts

i) Positive Environmental Impacts

The proposed Project will achieve area expansion and productivity improvement by supporting agricultural developments such as micro irrigation and other infrastructure development, post-harvest and marketing development, strengthening agricultural extension services through capacity development and livelihood development of the farmers. The associated activities are expected to present some environmental benefits, including;

- ✓ Efficient utilisation of water for irrigation
- ✓ Increased access to potable water
- ✓ Reduce pressure on forest, helps in forest conservation with reduction of illegal logging, Enhancements in protection of protected areas,
- ✓ Reduce out migration of people due to improved livelihood
- ✓ DHFP to be well equipped and strengthened to manage sound agriculture extension with active participation of an empowered & organized farmers.
- ✓ Reduce unnecessary conflict between human and wild animal by providing the fence around cultivated area

ii) Negative Environmental Impacts

The potential negative environmental impacts associated with each project component is depicted in **Table-6**. The table includes all aspects of implementation components. Specific mitigation measures to the project components and activities are also indicated and these measures will be implemented through ESAF, especially through EMP and EMoP.

6.2 Social Scoping and Potential Impacts

(1) Social Scoping

JICA Guideline specifies a wide range of social aspects to be considered. Initial scoping identified the following social impacts to be assessed:

- ✓ land acquisition
- ✓ Poverty, vulnerability and loss of livelihoods
- ✓ Specific impacts on Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBC), etc.

(2) Assessment of Potential Social Impacts

i) Positive Social Impacts

The primary objective of the Project is to achieve area expansion and production improvement by supporting agricultural development interventions. Another focus area of the project is livelihood development and nutrition improvement of the local communities; thus, it is anticipated to provide various social benefits to the local communities that would include:

- ✓ Participation of marginalised community in decision making process
- ✓ Strengthening of community institutions/FPO's
- ✓ Improvement of physical capital for rural communities, including poor, with the help of renovation/ upgraded agricultural infrastructure,
- ✓ Income opportunities from agriculture products would result in enhanced financial capital
- ✓ Well managed agriculture land and marketing would improve livelihood of the farmers,
- ✓ Improve local market opportunities and living conditions of the community,
- ✓ Increase in employment and income levels of people in agriculture and allied activities,

ii) Negative Social Impacts

The detailed potential negative social impacts or risks associated with each project component are depicted in **Table 7**. Impacts on the social setting often over-weigh the environmental risks associated with the project activities. The project area includes a diverse variety of tribal communities, transhumance (also designated as STs), the SCs and other farmers, vulnerable groups including women, widows, destitute, poor, landless, etc., on whom potentially significant social safeguard issues could be linked with respect to their lands and impacts on their livelihoods.

Table 4 Potential Deleterious Environmental Impacts

Component/ Sub-Component	Activities	Potential Environmental Concerns	Mitigations Measures/ Suggestions
Component 1: Area expansion and production enhancement			
1.2 Infrastructure development	(1) Water Source Facility (2) Micro Irrigation (RWHP, Spring, Groundwater) (3) Ropeway (4) Solar fence for wild animal attack (5) Custom Hiring Unit (agri. machinery etc.)	<ul style="list-style-type: none"> - Risks of mismanagement of surface and ground water flows - Over usage of ground water might decrease the surface flow and also might reduce/decline the water table in the respective area or respective season - Fruit and Vegetable farming may result in increase in usage of fertilisers and pesticides; Use of chemical fertilizers, insecticides and pesticides may also seep into ground water or surface water and contaminate it. - Purchase, storage and disposal of chemicals in the form of fire retardants may pose environmental concerns and contamination of the site - Ropeway development might damage the green cover - Digging top soils for construction of ropeway and solar fence might lead to soil erosion - Farm mechanisation may lead to intensive farming and cause soil erosion 	<ul style="list-style-type: none"> - Irrigation methods proposed include sprinklers and drip irrigation and this would help in judicious usage of water. - Increased resource efficiency i.e. reduction in loss of water and higher water productivity from use of efficient irrigation technologies - Trainings to the farmers on judicious water usage. - Regulation among FPO's to stop over usage of irrigation water - Effective ground-based monitoring of the irrigation water use regularly by FPO's members - Need to ensure judicious use of chemical fertilizers, insecticide/ pesticides - Ensure use of bio fertilizers and insecticides/ pesticides - Use of bio fertilizers would ensure restoration of soil fertility with improved soil health and structure - Prepare firm regulation and capacity building of FPO's to stop over usage of irrigation water. - Proper storage and disposal of chemicals as prescribed by vendor and safety aspects - This will be very minimal and special care shall be taken to avoid minimum loss to tree cover - Ensure construction will be avoided in monsoon. The excavated soil will be used/stabilized immediately after the excavation or debris should be sent to disposal site at the earliest - Appropriate soil management through erosion prevention and mechanical control measures need to be ensured. - Need to ensure soil management practices are adopted - Site specific Agronomic measures need to be ensured

Component/ Sub-Component	Activities	Potential Environmental Concerns	Mitigations Measures/ Suggestions
1.3 R&D support (pre-harvest)	(1) Hi-tech Nursery in public and private sector (2) Planting materials (Nursery) (3) Integrated COEs (4) Upgrading of food science training centre (5) Bio control lab for INM (6) Leaf/ Tissue analysis lab for IPM	<ul style="list-style-type: none"> - Nurseries may generate various forms of air pollution which can pose a health hazard or nuisance problem, e.g. dispersion of pesticide mist. - Nurseries generate various organic and inorganic wastes - Nutrient and pesticide run-off is primary concern because of the potential to contaminate groundwater and rivers. - There is a probability that usage of polythene would increase due to Nursery 	<ul style="list-style-type: none"> - Need to ensure judicious use of chemical fertilizers, insecticide/ pesticides - While most of the wastes are recycled there is room for improvement and all nurseries need to ensure compliance with Waste Regulations. - Ensure use of bio fertilizers and insecticides/ pesticides - Use of bio fertilizers would ensure restoration of soil fertility with improved soil health and structure - Need to ensure usage of biobags as a substitute of the plastic bags
		<ul style="list-style-type: none"> - Importing planting material may cause threat to local crops/species 	<ul style="list-style-type: none"> - Cultivation of improved local varieties to reduce threat on local gene pool that can be used as inter cropping or as crop rotation.
		<ul style="list-style-type: none"> - Construction works may lead to air and noise pollution - Construction works may lead to smoke and dust from construction sites - Water mixed with concrete, oil from construction equipment may contaminate nearby agriculture lands, water sources and channels, agricultural fields, etc. - Construction worker's labour camps may lead to deterioration of environment - Digging top soils for construction of facilities might lead to soil erosion 	<ul style="list-style-type: none"> - Construction equipment to be serviced regularly and installed with noise mufflers and resonators - Sprinkling of water in the construction sites and nearby areas - Ensure proper storage of and control on spillage of diesel, machine lubricants, and other oils - Judicious use of water and containment of water from construction site - Proper disposal of solid wastes from labour camps - Proper disposal of waste water from labour camps - Provision of fuel for cooking and heating to avoid cutting from forests - Ensure construction will be avoided in monsoon. The excavated soil will be used/stabilized immediately after the excavation or debris should be sent to disposal site at the earliest
		<ul style="list-style-type: none"> - There is a possibility that construction of the buildings will cause impacts, such as destruction of vegetated/tree cover 	<ul style="list-style-type: none"> - This will be very minimal but care will be taken to avoid vegetated land

Component/Sub-Component	Activities	Potential Environmental Concerns	Mitigations Measures/ Suggestions
1.4 Provision of farm equipment and materials	<p>(1) Equipment and materials for protected cultivation [<i>Poly house, Plastic mulching, Anti Hail net, Plastic tunnel for hilly area</i>]</p> <p>(2) Planting materials [<i>farmers-flower, vegetable, Peas, Tomato, Ginger, Garlic, Turmeric</i>]</p> <p>(3) Promotion of INM and IPM</p> <p>(4) Materials for livelihood and nutrition improvement [<i>Mushroom, Bee Keeping</i>]</p>	<ul style="list-style-type: none"> - Use of non-degradable plastic mulching may cause soil pollution and/or air pollution if the waste is burnt - Production of Fruit and Vegetable planting material may entail more use of fertilisers and pesticides; Use of chemical fertilizers, insecticides and pesticides may also seep into ground water - Degradation of soil health from overuse of agrochemicals - Purchase, storage and disposal of chemicals in the form of fire retardants may pose environmental concerns and contamination of the site 	<ul style="list-style-type: none"> - Ensure use of Biodegradable plastic for mulching/ poly house - Ensure judicious use of chemical fertilizers, insecticide/ pesticides - Ensure use of bio fertilizers and insecticides/ pesticides
Component 2: Supply chain development			
2.1 Infrastructure development	<p>(1) Post harvest and processing by FPOs [<i>Pack House with primary processing and packaging unit, Cold Storage Room, Refrigerated Transport Vehicle, Outlet of Horticulture Products, Basic Food Processing Unit</i>]</p> <p>(2) Public market [<i>Rural markets, Apni mandies, and Direct market</i>]</p> <p>(3) Private marketing and processing [<i>CA Storage for Apples, Cold Storage Room</i>]</p>	<ul style="list-style-type: none"> - Construction works may lead to air and noise pollution - Construction works may lead to smoke and dust from construction sites - Water mixed with concrete, oil from construction equipment may contaminate nearby agriculture lands, water sources and channels, agricultural fields, etc. - Construction worker's labour camps may lead to deterioration of environment - Digging top soils for construction of facilities might lead to soil erosion 	<ul style="list-style-type: none"> - Construction equipment to be serviced regularly and installed with noise mufflers and resonators - Sprinkling of water in the construction sites and nearby areas - Ensure proper storage of and control on spillage of diesel, machine lubricants, and other oils - Judicious use of water and containment of water from construction site - Proper disposal of solid wastes from labour camps - Proper disposal of waste water from labour camps - Provision of fuel for cooking and heating to avoid cutting from forests - Ensure construction will be avoided in monsoon. The excavated soil will be used/stabilized immediately after the excavation or debris should be sent to disposal site at the earliest

Component/ Sub-Component	Activities	Potential Environmental Concerns	Mitigations Measures/ Suggestions
		- Increased packaging waste being generated	- Ensure Proper disposal of solid wastes
		- For public markets and Private marketing and processing facilities the operation stage impacts due to the proposed facilities may be mainly due to process wash water, solid waste from operational areas and sanitary waste/sewage from toilets and wash areas	- The treatment plant for the wash water system will be installed/constructed through a turnkey contract with proper operation and maintenance and a guaranteed quality of the effluent meeting the required standards for food & vegetable processing industry - The treated wash water to be reused/recycled for toilet flushing, floor washing and watering of lawns within the facility premises. - The sanitary waste/sewage can be directly discharged into public sewer system (municipal) without any treatment
		- For Generally, fixed refrigeration equipment has lower leakage rates and Refrigerated vehicle systems have high levels of gradual leakage from mechanical seals, glands, valves and mechanical joints.	- Regular leakage checks will be conducted as per SOP to identify such leaks and minimise emissions.
		- There is a possibility that construction of the buildings will cause impacts, such as destruction of vegetated/tree cover	- This will be very minimal but care will be taken to avoid vegetated land

Source: Compiled by JICA Survey Team (2021)

Table 5 Potential Deleterious Social Impacts

Component/ Sub-Component	Activities	Potential Social Concerns	Mitigations Measures/ Suggestions
Component 1: Area expansion and production enhancement			
1.2 Infrastructure development	(1) Water Source Facility (2) Micro Irrigation (RWHP, Spring, Groundwater) (3) Custom Hiring Unit (agri. machinery etc.)	<ul style="list-style-type: none"> - Following activities on private lands may result in formal acquisition of land, loss of agricultural production, reduce income levels; <ul style="list-style-type: none"> ✓ Establishment of facilities ✓ Civil engineering structures ✓ Construction of new access roads/ paths - Drinking water availability may get affected by the proposed project as in Uttarakhand the streams are also sometimes the main sources of drinking and domestic water - Exclusion of vulnerable groups including landless from project activities and benefits - Disturbance and inconvenience from air and noise pollution, dust resulting from construction activities - Contaminated water from construction sites may pollute water sources, water channels, agricultural fields, plantations, etc., resulting in risk to health and reduction of incomes - Infrastructure development might result in social distress - Casual relationships between local community and construction workers resulting in spread of Sexually transmitted diseases, AIDS/ HIV, etc. - Unfair distribution of water causes the social disturbance in the area 	<ul style="list-style-type: none"> - Ensure that private or lands held by community by virtue of customary traditions are avoided which may result in formal land acquisition and loss of livelihoods - Ensure active participation of beneficiary and affected community members in the process of the identification of the locations - Avoid and/or mitigate social risks, if any, through the process of consultations and participation - The proposed minor irrigation include sprinklers and drip irrigation and thus would help in judicious use of water. - During community meetings the issue would be discussed and adequate measures need to be taken to avoid any adverse impact on their drinking water source - Identify specific activities for marginalized groups such as landless, poor households, female headed households, women, etc. - Specify minimum quota for selection of women, SCs, STs, and other vulnerable groups such as women, women headed households, landless, poor/ near poor, etc., as beneficiaries for livelihood development activities - All construction equipment to be regularly serviced, installation of noise mufflers and resonators, etc., to control air pollution, noise and vibrations from construction equipment - Regular sprinkling of water in the construction sites and nearby areas would be followed to control dust - Judicious use of water to control contaminated water from construction site from run-off into agricultural fields, water sources, etc. - Proper consultation meetings with local FPO's would be organised during site selection and pre construction phase - Ensure medical check-up for laborers before commencing work in the construction sites - Regular health check-ups thereafter - Regulation of irrigation water use among the FPO members to be prepared and FPO need to regularly monitor it.

Component/Sub-Component	Activities	Potential Social Concerns	Mitigations Measures/ Suggestions
1.3 R&D support (pre-harvest)	(1) Hi-tech Nursery in public and private sector (2) Planting materials (Nursery) (3) Integrated COEs (4) Upgrading of food science training centre (5) Leaf/ Tissue analysis lab for IPM	<ul style="list-style-type: none"> - Building/construction activities on private lands may result in formal acquisition of land 	<ul style="list-style-type: none"> - Ensure that private or lands held by community by virtue of customary traditions are avoided which may result in formal land acquisition and loss of livelihoods - Construction of any structure in individual or community land should be done only with the consent and the approval of the beneficiaries and Gram Panchayat - Construction of assets of common benefits should be strictly prohibited in the lands which belong to vulnerable group members. - Ensure active participation of beneficiary and affected community members in the process of the identification of the locations - Avoid and/or mitigate social risks, if any, through the process of consultations and participation
		<ul style="list-style-type: none"> - Disturbance and inconvenience from air and noise pollution and dust resulting from construction activities 	<ul style="list-style-type: none"> - All construction equipment to be regularly serviced, installation of noise mufflers and resonators, etc., to control air pollution, noise and vibrations from construction equipment
		<ul style="list-style-type: none"> - There is a possibility that the project will cause significant impacts, such as extensive alteration of existing land uses, changes in sources of livelihood 	<ul style="list-style-type: none"> - In some places some private land or common land may need to be secured. Care will be taken to use non-cultivable land and minimise the use of farmland. Marginal area from near the farm boundaries on either side of existing paths may need to be secured. Acquisition of land will be done with the full consent of the affected farmers and the concerned communities
1.4 Provision of farm equipment and materials	(1) Equipment and materials for protected cultivation [<i>Poly house, Plastic mulching, Anti Hail net, Plastic tunnel for hilly area</i>] (2) Planting materials [<i>farmers-flower, vegetable, Peas, Tomato, Ginger, Garlic, Turmeric</i>] (3) Promotion of INM and IPM (4) Materials for livelihood and nutrition improvement [<i>Mushroom, Bee Keeping</i>]	<ul style="list-style-type: none"> - Exclusion of vulnerable groups from project activities and benefits 	<ul style="list-style-type: none"> - Identify specific activities for marginalized groups such as landless, poor households, female headed households, women, etc. - Specify minimum quota for selection of women, SCs, STs, and other vulnerable groups such as women, women headed households, landless, poor/ near poor, etc., as beneficiaries for livelihood development activities
Component 2: Supply chain development			

Component/ Sub-Component	Activities	Potential Social Concerns	Mitigations Measures/ Suggestions
2.1 Infrastructure development	<p>(1) Post harvest and processing by FPOs [Pack House with primary processing and packaging unit, Cold Storage Room, Refrigerated Transport Vehicle, Outlet of Horticulture Products, Basic Food Processing Unit]</p> <p>(2) Public market [Rural markets, Apni mandies, and Direct market]</p> <p>(3) Private marketing and processing [CA Storage for Apples, Cold Storage Room]</p>	<ul style="list-style-type: none"> - Building/construction activities on private lands may result in formal acquisition of land - Disturbance and inconvenience from air and noise pollution and dust resulting from construction activities - There is a possibility that the project will cause significant impacts, such as extensive alteration of existing land uses, changes in sources of livelihood 	<ul style="list-style-type: none"> - Ensure that private or lands held by community by virtue of customary traditions are avoided which may result in formal land acquisition and loss of livelihoods - Construction of any structure in individual or community land should be done only with the consent and the approval of the beneficiaries and Gram Panchayat - Construction of assets of common benefits should be strictly prohibited in the lands which belong to vulnerable group members. - Ensure active participation of beneficiary and affected community members in the process of the identification of the locations - Avoid and/or mitigate social risks, if any, through the process of consultations and participation - All construction equipment to be regularly serviced, installation of noise mufflers and resonators, etc., to control air pollution, noise and vibrations from construction equipment - In some places some private land or common land may need to be secured. Care will be taken to use non-cultivable land and minimise the use of farmland. Marginal area from near the farm boundaries on either side of existing paths may need to be secured. Acquisition of land will be done with the full consent of the affected farmers and the concerned communities

Source: Compiled by JICA Survey Team (2021)

7 Environmental and Social Management Measures and Monitoring

ESAF has been prepared to ensure that potential adverse environmental and social impacts associated with the Project are either avoided or minimised in line with the JICA Guideline as well as relevant policies, laws and regulations of GOI and the state of Uttarakhand. ESAF targets at managing the potential unfavourable and negative impacts, with the help of simple procedures to expedite appropriate environmental and social management.

Although EIA study would not be required for the entire Project, however, the Project may need to be evaluated from the environmental and social risk perspective before implementation of subprojects/ project components. Overall, the proposed project activities do not have any substantial negative environmental impact as they include minor irrigation schemes and small building/infrastructure development etc. Moreover, the project area exclusion criterion also says that the sub-project areas will be outside eco-sensitive zones defined by the Forest Department. In general, the project is not considering any activity within ecologically sensitive zones from the boundary of the Wildlife sanctuary/National parks and will be further checked with Forest Department whether the sub-project areas are within "notified" eco-sensitive zones.

As already mentioned in Section 4.2 (Table-3), all sub-projects will be screened and Category-A sub-projects would be excluded. Sub-projects categorized as B or C will be implemented and the criteria for classification under Category B and C, as per JICA Guidelines, are elaborated below.

Category B:	Projects with their potential adverse impacts on the environment and society are less adverse than those of Category-A projects. Generally, if any adverse impacts are irreversible, they are generally very few and only site-specific and, in most cases, normal mitigation measures can be designed more readily.
Category C:	<p>Projects that are likely to have minimal or little adverse impacts on the environment and society [with no involuntary resettlement]. Generally, as per JICA's criteria following conditions to be met in order to be classified as Category-C project, that includes,</p> <ul style="list-style-type: none">- <i>Environmental and social negative impacts are minimal or nothing,</i>- <i>No land acquisition and involuntary resettlement, and</i>- <i>Project area does not correspond to "Illustrative list of sensitive areas" written in Appendix 3 of JICA Guidelines.</i>

The following sections further indicates the outline of important procedures/ requirements of ESAF. The different stages of the procedures/requirement of ESAF is depicted in figure 4 below:



Source: JICA Survey Team (2021)

Figure 4 Flow Diagram of important procedures of ESAF

7.1 Screening and Selection of Sub-Projects

Generally, the guidelines for selection of sub-project reinforce the key objectives of the Project. Specific sub-projects will be selected based on the preferences of the farmers/ needs and mandate of the project/ UKHDS/ DHFP, thus the guidelines should not be too prescriptive in terms of defining what a given farmers/DHFP can and cannot do. At the same time, exclusion criteria should be clearly shown to eliminate sub-projects that may cause potentially significant adverse environmental impacts, resulting in the requirement of EIA.

Considering that the Himalayan terrain of Uttarakhand are under constant threat of mass wasting and erosion caused by natural calamities, depletion of forest cover due to anthropogenic activities and forest fires, unscientific agronomic practices and hydrological imbalance, thus the objective is to not only reduce the negative impact but also to enhance positive impacts on both environment and social aspects.

Thus, categorisation (Category B or C) of sub-project as per the JICA Guideline as well as the finalisation of exclusion criteria will be completed by PMU prior to the commencement of the Project or at the early stage of the preparatory work. In accordance with the JICA Guidelines, tentative exclusion criteria have been developed and are summarised in the **Table 6**.

Table 6 Sub-project Exclusion Criteria

Component	Exclusion Criteria for Sub-project
1. Overall	<ul style="list-style-type: none"> - Sub-projects/Activities likely to have major adverse impacts on the environment - Sub-projects/Activities fall into “Category A” as per the JICA Guideline.
2. Natural Environment	<ul style="list-style-type: none"> - use of fertilizers and pesticides banned by WHO [Classes IA, IB and II] (<i>refer Attachment 10.6.1-2</i>). - activities conducted inside protected areas such as national parks/ wildlife sanctuaries - likely to cause damage to wildlife and their habitats - planting of non-native or invasive or exotic species of trees, shrubs or plants - felling of trees or forest - deteriorate physical environment

Component	Exclusion Criteria for Sub-project
	<ul style="list-style-type: none"> - totally eliminate indigenous races of food crop - activities that cause pollution o water sources
3.Social Environment	<ul style="list-style-type: none"> - activities that promote child labour - activities that could lead to the exploitation of women/ vulnerable groups - activities that give adverse impact on ST/SCs. - acquisition of private land and/or resettlement - cause damage to places of religious importance, historical monuments or cultural properties

Source: Compiled by JICA Survey Team (2021)

7.2 Environmental and Social Assessments

Although, the Project is not anticipated to bring-out deleterious environmental and social impacts, yet it is suggested to conduct Environmental Assessment (EA) and Social Assessment (SA) for specific sub-project classified as Category-B. EA and SA shall be conducted after the screening and selection procedures are completed. DIU under the guidance/direction of PMU as well as support/ supervise of DoE shall determine the necessity of the assessments, considering the types of potential adverse impacts of the sub-projects. The assessment results will be utilised for the preparation of EMP/EMoP. The following sections describe the key tasks for the assessments and indicative contents of the reports.

(1) Environmental Assessment

The main purpose of EA is to help understand the issues and risks associated with environmental aspects, and its resultant impacts on the target population. Regular monitoring of environmental parameters such as air and water quality, noise levels, degradation of forests, soil erosion, solid waste disposal, disposal of sewage, etc., will enable the Project to understand the temporal changes in environmental conditions. Such monitoring activities would enable the Project to devise short/ long-term, recommendations, strategies and mitigation measures to address the concerns and issues that affect environment.

EA plan will be prepared by the IA, assisted by ESCE hired by PMU providing reasonable details outlining the objectives, contents, methods and schedule for its implementation. **Table 7** specifies key tasks for EA.

Table 7 Key Tasks for Environmental Assessment

No.	Tasks	Descriptions
1	Describe Environmental Setting	It will address the existing environmental setting, in terms of physiography and geology, land-use patterns, dependence on agriculture, ambient air quality, noise levels, water quality, socio-economics, etc.
2	Legal and Regulatory Environmental Consideration	Provides an account of the existing legal and regulatory environment, compliance with multilateral funding agencies, such as World Bank, JICA, shortfalls, if any, etc.
3	Impacts Assessment and Mitigation Measures	It will describe all the activities/ sub-projects that have potential to impact the environment in a deleterious manner, assess and analyse in-depth various potential negative impacts related activities/ sub-projects, provide mitigation measures environmental risk and vulnerabilities.
4	Devise Strategies to Manage and Monitor Environmental Concerns and	Provide strategies to manage and monitor potential environmental concerns and parameters. It will also provide roles and responsibilities of various key positions, institutions, bodies that will manage and monitor the control and protection of environmental aspects, etc. It also examines the opportunities for community involvement

No.	Tasks	Descriptions
	Parameters	in project preparation and implementation, the existing and proposed framework for property rights/ access, and sustainable management and monitoring of environment.
5	Recommendations for Project Design and Implementation Arrangements	It reviews proposals for project design and provide guidance to the implementing agency on participatory alternatives and institutional strengthening measures appropriate to the environmental characteristics of the project area(s). This will provide a basis for integrating the environmental analysis of the core elements into proposals for implementation arrangements.

Source: Compiled by JICA Survey Team (2021)

For details of the indicative contents that the EA report shall include is given in Attachment 10.6.1-3.

(2) Social Assessment (SA)

The main purpose of the Social Assessment (SA) is to help understand basic social issues and risks, and to determine social impacts on the target population of the proposed sub-projects. Analysis of the collected socio-economic information enables the Project to prioritise critical issues and means to address them, in consultation with other stakeholders.

The assessment will (i) establish baseline socio-economic situation of the target farmers in the project area that will act as a reference for measuring project impacts in future, (ii) assess the access to and opportunities for getting benefits of basic social and economic services, (iii) stipulates a basis to identify appropriate interventions for community development and livelihoods under the Project, and (iv) determine short/ long-term, direct/ indirect, and positive/ negative impacts of the Project on the socio-cultural and economic status, including women, small scale and marginal farmers, female-headed households, landless, SCs/STs, etc.

SA shall be carried out with assistance/supervision by hired subject matter experts and the results would assist the executing agency in reaching-out to the vulnerable and the poor and thus ensures that the objectives of the Project are acceptable to the intended beneficiaries. **Table 8** specifies key tasks for SA.

Table 8 Tasks for Social Assessment

No.	Tasks	Descriptions
1	Elucidate Social Setting, Socio-cultural Practices, Institutional, Historical, and Political Contexts	Address the macro-policy context of the Project. Describe the social settings, explain the extent of socio-cultural fragmentation or homogeneity. Address wide-ranging queries on traditional and cultural norms for using resources and how it relates to inter-relationships between stakeholder groups.
2	Legal and Regulatory Social Consideration	Provide an account of the existing legal and regulatory milieu of the Project, especially with regards to ownership of and access to arrangements and its implications to different stakeholders, specifically the poor and vulnerable.
3	Application of Core Aspects of Social Development to the Project	Describe the potential outcomes of the proposed Project in terms of social opportunities, constraints, impacts, and risks, such as socio-cultural diversity, gender, institutions, rules, stakeholder's interests, social risk and vulnerability.
4	Devise Strategy to Achieve Social Development Outcomes	Examine the opportunities for community involvement in project preparation and implementation, the existing and proposed framework for property rights/ access to resources, and sustainable management alternatives to achieve the desired social development outcomes.
5	Recommendations for	Review proposals for project design and provide guidance to the implementing agency

No.	Tasks	Descriptions
	Project Design and Implementation Arrangements	on participatory alternatives and institutional strengthening measures appropriate to the socio-cultural characteristics of the project area(s). This will provide a basis for integrating the social analysis of the core elements into a proposal for implementation arrangements.
6	Development of a Monitoring Plan	The monitoring system needs to have local participation in the generation and refinement of indicators over the project cycle in order for the affected people to be involved in balancing their own interests in the management of their land and system.

Source: *Social Analysis Guidelines in Natural Resource Management (2005)*, World Bank

For details of the indicative contents that the SA report shall include is given in Attachment 10.6.1-3.

7.3 Preparation of Environmental Management Plan

Environmental Management Plan (EMP) shall consist and cover environmental mitigations and consideration measures which shall be taken-up during construction and operation phases, which shall examine description and assessment results of environmental, social, health and safety impacts. The EMP shall be prepared only for “Category B” sub-projects (refer Figure 4). Although quantifications of impacts as well as concerned mitigation measures of sub-projects are yet to be determined, indicative EMP is described in **Table 9** below. Any additional costs for the proposed mitigation measures shall be included in the construction cost.

Table 9 Indicative Environmental Management Plan

Potential Environmental Impact	Proposed Mitigation Measures	Responsibility
Pre-construction Phase		
Shifting of Utilities and Relocation of Cultural and Religious Properties	<ul style="list-style-type: none"> - There may be some utility services such as electric lines, telephone lines, cable line, pipe lines etc need to be brought to the notice of project Engineer and which may be shifted on consultation with the PMU before commencement of construction activity. These structures will be shifted in consultation with the concerned departments. - Religious structures though not under project, but in case any small structure appears to be shifted only after public consensus/SPMU approval. Relocation should be completed before construction work is taken up. 	Contractor/DIU
Archaeological structure/ article	<ul style="list-style-type: none"> - There is no archaeological structure affected, directly or indirectly, in the sub-project. However, such structures/ articles found nearby during construction stage shall be brought to the notice of project Engineer. 	Contractor /DIU
Ecological Parks/Sanctuaries etc	<ul style="list-style-type: none"> - There is no ecological sensitive area affected, directly or indirectly, in the sub-project. However, such zones found nearby during construction stage, shall be brought to the notice of project Engineer. 	Construction Contractor /DIU
Construction Phase		
Air Quality	<ul style="list-style-type: none"> - Adequate dust suppression measures such as regular water sprinkling on construction sites, haul & unpaved roads particularly near habitation must be undertaken to control fugitive dust. - Plantation activity may be undertaken at the construction sites - Workers may be provided with mask to prevent breathing problems - Trucks carrying soil, sand and stone may be duly covered to avoid spilling. - Low emission construction equipment, vehicles and generator sets may be used - Plants, machinery and equipment should be handled so as to minimize generation of dust. - All crushers used in construction should confirm to relative dust emission devises - All vehicles shall have pollution certificates - Air quality monitoring may be conducted at construction sites. 	Contractor

Potential Environmental Impact	Proposed Mitigation Measures	Responsibility
Water Quality	<ul style="list-style-type: none"> - Silt fencing may be provided near water bodies to avoid spillage of construction material. - Discharge of waste from construction / labour camp into water bodies may be strictly prohibited. - Construction methodologies with minimum or no impact on water quality may be adopted, disposal of construction wastes at designated sites and adequate drainage system may be provided. - Construction activity may be prohibited during monsoon - Ponds near to work site with the habitat of birds etc shall be protected. Poaching must be strictly banned 	Contractor
Soil Quality/ Sedimentation	<ul style="list-style-type: none"> - Asphalt emulsifier must be handled with caution and any leakage detected must be immediately rectified. - Construction work should not be done during rainy season to avoid erosion and spreading of loose material - Top soil removed during excavation work should be utilized stored separately in bunded area and should be utilized during plantation or refilling of excavated area. 	Contractor
Solid Waste	<ul style="list-style-type: none"> - Construction work must be carried in such a way that minimum or no solid waste is generated at construction site. - Extra earth material produced may be utilized for refilling of borrow areas. - Rainy season may be avoided to minimize spreading of loose materials. - Solid waste management may be framed for camp areas. Dustbins may be provided in the Camps. - Proper sanitation facilities must be provided in Camp by the Contractor. 	Contractor
Noise & Vibration	<ul style="list-style-type: none"> - Modern technologies producing low noise may be used during construction. - Construction equipment's and vehicles must be in good working condition, properly lubricated and maintained to keep noise within permissible limits. - Temporary noise barriers installed at settlements and nearby forest area, if required - Head phones, ear plugs to be provided to the workers at construction site. - Noise level monitoring must conducted during construction phase. - All vehicles, equipment and machinery used in construction should be fitted by exhaust silencers. - Equipments should be maintained regularly and soundproof gadgets should be used. - Provision of ear-plugs to heavy machinery operators 	Contractor
Land Subsidence	<ul style="list-style-type: none"> - Plantation must be carried out to control erosion 	Contractor
Bottom Sediment	<ul style="list-style-type: none"> - Silt fencing may be provided to avoid runoff into the river. - Construction activity should be taken in dry season to avoid spreading of construction material and minimize impact on water quality 	Contractor
Applicability of legislations and statutory requirements	<ul style="list-style-type: none"> - All the construction works shall be undertaken in accordance with all applicable legislations and Indian statutory requirements. 	Contractor
Removal of Trees/ Vegetation	<ul style="list-style-type: none"> - Permission for cutting of individual trees shall be taken from the Forest deptt. - Vegetation removed shall be properly disposed. 	Contractor
Soil	<ul style="list-style-type: none"> - Suitable protection measures consisting of bio-engineering techniques such as plantation of grasses and shrubs & check dams, may be provided to control erosion. - Borrow areas may be finalized in concern with ecological sensitivity of the area. - Agriculture land may not be used as borrow area. Priority may be given to degraded area for excavation of borrow material. - Rehabilitation of borrow area may be taken under the project. - Construction work may be avoided during rainy season to evade erosion and spreading of loose material. - Top soil removed from agricultural land may be stored separately in bunded areas and utilized during plantation or refilling of excavated area. 	Contractor
Water	<ul style="list-style-type: none"> - Availability of water - Water used for construction activity shall be predefined and if ground water is to be used shall follow ground water department norms. - Provision of temporary drainage arrangement due to construction activities must be made by Contractor with proper approval of project Engineer - Silt fencing may be used near water bodies to avoid runoff into the water bodies. - Proper cross drainage structure may be planned at the crossing of the canal in consultation with project Engineer/Irrigation Department - Proper drainage shall be planned in the area to avoid water logging 	Contractor

Potential Environmental Impact	Proposed Mitigation Measures	Responsibility
Construction / Labour Camp Management	<ul style="list-style-type: none"> - During the construction phase, the construction / labor camp will be located along the project area. - A proper Construction Camp has to be formulated to control degradation of the surrounding landscape due to the location of the proposed construction camp. The contractor must provide, construct and maintain necessary living condition and ancillary facilities. These must be included in contract documents provided to the contractor. - Sufficient supply of potable water must be provided at camps and working sites. - Adequate and clean washing and bathing facilities must be provided that also have sufficient drainage. - Adequate sanitary facilities may be provided within camp. The place must be cleaned daily and maintain strict sanitary conditions. Separate latrine must be provided for women. - Adequate supply of water must also be provided. - The contractor must ensure that there is proper drainage system to avoid creation of stagnant water bodies. - At every camp, first aid facilities with suitable transport must be provided to take injured or ill person to the nearest hospital. - Adequate supply of fuel in the form of kerosene or LPG may be provided to construction laborers, to avoid felling of trees for cooking and other household activities. No open fires may be allowed in camps. - The sites should be secured by fencing and proper lighting. - The Contractor may ensure that all construction equipment's and vehicle machinery may be stored at a separate place / yard. Fuel storage and refilling areas may be located 500 m away from the water bodies and from other cross drainage structures. - All the construction workers should be provided with proper training to handle potential occupation hazards and on safety and health which include the following:- <ul style="list-style-type: none"> ✓ Environmental awareness programme ✓ Medical surveillance ✓ Engineering controls, work practices and protective equipment ✓ Handling of raw and processed material ✓ Emergency response - Construction / labour camps may be located away from forest areas, settlements, cultural heritage and historical sites and water bodies and dry river beds. - It should be ensured by the Contractor that the camp area is cleared of the debris and other wastes after the completion of construction. - First aid box shall readily available at site and a trained person shall always available during construction time. - On completion of construction, the land should be restored back to its original form. 	Contractor
Public Health and Safety	<ul style="list-style-type: none"> - Full height fence, barriers, barricades etc. shall be erected around the site in order to prevent the surrounding area from excavated soil, rubbish etc. which may cause inconvenience to workers and endanger the public. Follow all technical specifications mentioned under Bid Document. - The contractor must supply safety goggles, helmets, earplugs and masks etc. to the workers and staff. - Adequate precaution must be taken to prevent danger from electrical equipment's. Necessary light and fencing must be provided to protect the public. - All machines and equipment's used for construction purposes must conform to relevant Indian Standards (IS) codes. These equipments must be free from patent defects, in good working condition, regularly inspected, and properly maintained as per IS provisions. - All laborers working on mixing of asphaltic material, cement, lime mortars, concrete etc should be provided with protective footwear and protective goggles. Workers involved in welding work should be provided with welder's protective eye shields. - No men below the age of 18 years or women of any age will be employed to work with paint products containing lead in any form. Face masks must be supplied to workers when they use any form of spray paint or work with surfaces that have been dry rubbed and scrapped with lead paint. - All reasonable measures must be taken to prevent any damage to the public from fire, floods, etc. - All necessary steps must be taken to prompt first aid treatment for injuries that may be sustained during the course of work. 	Contractor

Potential Environmental Impact	Proposed Mitigation Measures	Responsibility
	<ul style="list-style-type: none"> - The contractor must conform to all anti-malarial instructions, including filling up of borrow pits. - Work that affects the use of side roads and existing accesses must not be taken without providing adequate provision. - On completion of the works, all the temporary structures may be cleared away, all rubbish disposed, excreta and disposal pits or trenches filled in and effectively sealed off and the entire site left clean and tidy. - No parking of trucks, trolleys, cranes and trailers etc shall be allowed on road which may obstruct the traffic movement. 	
Emergency Preparedness Plan	<ul style="list-style-type: none"> - The contractor shall prepare as required under rule 36 of BOCWR an Emergency Response Plan for all work sites. This includes; - Fire and Explosion - Collapse of lifting appliances and transport equipment - Collapse of building sheds or structures etc. - Gas leakage or spillage of dangerous good or chemicals - Drowning of workers - Landslides getting workers buried, flood, earthquake, storm etc 	Contractor
Accident Reporting	<ul style="list-style-type: none"> - All accidents and dangerous occurrence shall be immediately informed verbally to the project engineer - Reports of all accidents (fatal/injury) and dangerous occurrence shall be sent within 24 hrs. 	Contractor
Operation Phase		
Air Quality	- AAQ monitoring at all sites is recommended under the guidance of SPCB	DHFP/Contractor
Water Quality	<ul style="list-style-type: none"> - Judicious use of chemical fertilizers, insecticide/ pesticides is managed - Use of bio fertilizers and insecticides/ pesticides is introduced - Under Farmers Support Program, the Project is promoting the following- i) promotion of organic farming, ii) promotion of optimum use of pesticides under Integrated Pest Management (IPM) and biological control of pest and diseases, iii) promotion of farming practices to reduce soil erosion, iv) promotion of optimum quantities of farm inputs such as seeds and fertilizers. - Water Quality monitoring at all irrigation sites is recommended under the guidance of SPCB 	DHFP/Contractor/ FPO's

Source: Compiled by JICA Survey Team (2021)

7.4 Preparation of Environmental Monitoring Plan

Environmental Monitoring Plan (EMoP) provides monitoring plan to administer and scrutinize the implementation of proposed environmental mitigation measures and considerations and to regularly monitor the quality of surrounding environments during construction, and operation phases. Same as EMP, EMoP shall be prepared only for “Category B” sub-projects.

EMoP ensures that environmental and social safeguards adopted measures are bringing the desired results. Therefore, indicators of environmental and social considerations are utilised to measure the quality environmental parameters and safeguard processes. **Table 10** presents indicative monitoring items, their indicators, means of verification, frequency and responsible parties for measuring safeguards measures that have been implemented. However, these aspects need to be finalised in relation to EMP, in case, EMP are prepared for some specific sub-projects.

It shall be the responsibility of the designated DIU officers to implement, monitor, and report safeguards, as an integral part of the project implementation, and for the purpose of site-level planning and implementation, the designated DIU officers ensure the required monitoring activities are conducted. The compliance of environmental and social safeguards during implementation of sub-project must be also closely observed by DIUs, and relevant local stakeholders such as FPOs, representatives of the FPCs, local NGOs, if any appointed, women's groups, youth groups, etc.

Periodic visits should also be carried out by the designated officers to confirm that mitigation measures for deleterious impacts are being carried out properly by the contractors.

Table 10 Indicative Environmental Monitoring Programme

Aspects	Parameters to be monitored	Locations	Method	Frequency	Responsibility
Pre-Construction Phase					
Shifting of utilities	Shifting of utilities	Subproject areas	Interview	Once in a month	DIU, Environment Safeguards Officer/ Contractor
Construction Phase					
Air pollution	Dust, smoke	Sub-project areas	Site visits, visual checks	Twice a week	DIU, Environment Safeguard Officer/ Contractor
Noise and Vibrations	Noise of equipment, complaints from local residents	Sub-project areas - Major sources of noise	Sound Level Meter	Once in three months	DIU, Environment Safeguard Officer/ Contractor
Ground water quality and Surface water quality * Whenever the Environmental Expert or other Monitoring Officers feel the necessity for carrying out tests during construction. Otherwise, site visits and visual checks only	pH, Electrical conductivity, Turbidity, TDS, TSS, Total Hardness, Alkalinity, Carbonate, BOD, COD, TN, TP, Fluorides, Chlorides, Sulphates, Sodium, Potassium, Calcium, Magnesium, Oil & Grease, Iron, Manganese, Copper, Zinc, Phenolic Compounds, Colour, Cadmium, Chromium, Cyanides, Lead, Total Coliform, Pesticides (to be specified)	Sub-project areas and nearest villages - 10 location	Collected sample to be analysed from DoA Laboratory Or Site visits, visual checks	Once in three months	DIU, Environment Safeguard Officer/ Contractor
Solid waste (Waste)	Volume and kind of construction wastes,	Sub-project areas	Site visits and visual checks	Once in three months	DIU, Environment Safeguard Officer/ Contractor
	Kitchen and other solid waste generated in labour camp	Sub-project areas	Site visits and visual checks	Once every month	DIU, Environment Safeguard Officer/ Contractor
Chemical or hazardous wastes	Oils, lubricants, cleaning agents, etc	Sub-project areas	Site visits and visual checks	Once in three months	DIU, Environment Safeguard Officer/ Contractor
Subsidence and sedimentation		Sub-project areas	Site visits and visual checks	Once in three months	DIU, Environment Safeguard Officer/ Contractor
Soil erosion	Visual inspection of rain water run-off	Sub-project areas	Site visits and visual checks	Twice in a Year	DIU, Environment Safeguard Officer/ Contractor
Disturbance to ecological resources and vegetative cover	Illegal tree felling, wildlife hunting, illegal extraction of forest resources	Sub-project areas	Site visits and visual checks	Twice in a Year	DIU, Environment Safeguard Officer/ Contractor
Interactions with local communities	Complaints and grievances, from local residents	Sub-project areas	Site visits and visual checks	Once in two months	DIU, Environment Safeguard Officer/ Contractor

Aspects	Parameters to be monitored	Locations	Method	Frequency	Responsibility
Land acquisition(loss of income or loss of access)	Economic condition of households, process of selection of project areas	Sub-project areas	Interviews	Twice in a Year	DIU, Social Officer/ Safeguard Contractor
Grievance mechanism	Grievance redress condition	Sub-project areas	Interviews	Twice in a Year	DIU, Social Officer/ Safeguard Contractor
Impact of livelihoods	Direct or indirect impacts of livelihoods	Sub-project areas	Interviews	Twice in a Year	DIU, Social Officer/ Safeguard Contractor
Health and Safety	Training and health check-ups for workers, fencing, warning signs, emergency evacuation	Sub-project areas	Site visits and visual checks	Twice in a Year	DIU, Social Officer/ Safeguard Contractor
Accidents and traffic management	Signage, regular maintenance	Sub-project areas	Site visits and visual checks, record of accidents and training	Twice in a Year	DIU, Social Officer/ Safeguard Contractor
Operation Phase					
Ground water quality	pH, Electrical conductivity, Turbidity, TDS, TSS, Total Hardness, Alkalinity, Carbonate, BOD, COD, TN, TP, Total Coliform, Pesticides (to be specified)	Sub-project areas and nearest villages - 10 location	Collected sample to be analysed from DoA Laboratory	Once in six months	DIU, Environment Officer/ Safeguard Contractor
Surface water quality					
Ground water level	Water level of existing well nearby	Sub-project areas	Measurement	Once in three months	Contractor
Impact of livelihoods	Direct or indirect impacts of livelihoods	Sub-project areas	Interviews	Twice in a Year	DIU, Social Officer/ Safeguards Contractor
Accidents	Direct or indirect impacts of livelihoods	Sub-project areas	Site visits and visual checks, record of accidents and training	Twice in a Year	DIU, Social Officer/ Safeguards Contractor
Grievance mechanism	Grievance redress condition	Subproject areas	Interviews	Twice in a Year	DIU, Social Officer/ Safeguards Contractor

Source: Compiled by JICA Survey Team (2021)

7.5 Implementation and Monitoring of Sub-projects

The institutional arrangement for the implementation and monitoring system for EMP and EMoP is basically same as the project component monitoring system, but again it should be noted that only the sub-projects which are identified as Category B as per JICA Guideline shall be the target of this monitoring. For details about the sample monitoring format at this level refer Attachment 10.6.2. DIU officer shall compile monitoring results and reviews regularly, thereafter report to PMU, which analyse the result and share to concerned departments in the state government as well

as annual report to JICA. A specialist under PMC, and subject matter experts (refer **Section 7.1**) shall support PMU/ DIUs for the monitoring related activities which are in line with JICA Guideline.

8 Institutional Arrangement and Capacity Development for ESAF

8.1 Institutional Arrangement

In the proposed Project, UKHDS, is responsible for overall planned intervention in the proposed Project, legal/policy development, ensuring adequate consultation and participation, inclusion of vulnerable people 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 11** highlights the institutional structure for ESAF with key environmental and social management roles and responsibilities.

Table 11 Institutional Structure for ESAF Implementation and Monitoring

Institution	Role in the Project	(Additional) Role and/or Responsibility in ESAF
Uttarakhand Horticulture Development Society (UKHDS)	<ul style="list-style-type: none"> - Decision-making body - Lay-down the broad policy framework for functioning of the 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 and DIU 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) at State Level	<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 DPD/DIU/Federation of Farmers Organisations (FPO, FPC, F-SHG, MPAC) and field level officers on information disclosure and 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

Institution	Role in the Project	(Additional) Role and/or Responsibility in ESAF
		information, hand-holding support in the field for all project activities
DPDs (Monitoring and Evaluation and Institution Development)	<ul style="list-style-type: none"> - Support and facilitate the PMU for project implementation at state level, and would extend all technical inputs and guidance to the DIU level as and when required and through regular review meetings, frequency of which to be determined during the preparatory phase of the Project 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at State level, including the screening and selection of subprojects and determination of the required procedures for specific subprojects following the guidance/instruction of PMU - Liaise with other line departments at the appropriate level for inter-sector convergence - Provide any specific support required for implementation and monitoring of the Project
District Implementation Unit (DIU)	<ul style="list-style-type: none"> - Function as the dedicated and extended wing of the PMU for project implementation at the District level and as a subordinate office of the autonomous society. - Facilitate project implementation at the district level, and would extend all technical inputs and guidance to the Federation of Farmers Organisations (FPO, FPC, FSHG, MPAC, etc.) 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at the district level - Conduct the screening and selection of subprojects and determine the required procedures for specific subprojects following the guidance/instruction of PMU - Liaise with other line departments at the appropriate level for inter-sectoral convergence - Provide any specific support required for implementation and monitoring of the Project - Coordinate with subject matter experts
Project Operation and Management officer at DIU	<ul style="list-style-type: none"> - Support and facilitate the DIU for project implementation at district level, and would extend all technical inputs and guidance to the field level organisations as and when required and through regular review meetings, frequency of which to be determined during the preparatory phase of the Project 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at District level, including the screening and selection of subprojects and determination of the required procedures for specific subprojects following the guidance/instruction of DMU - Liaise with other line departments at the appropriate level for inter-sector convergence - Provide any specific support required for implementation and monitoring of the Project
Field Level		
Federation of Farmers Organisations (FPO, FPC, FSHG, MPAC, etc.)	<ul style="list-style-type: none"> - Assist in selecting target beneficiaries - Clarify local needs and expectations on the Project 	<ul style="list-style-type: none"> - Conceive and raise awareness in the locality on environmental and social considerations. - Provision of support in micro planning activities at the subproject level. - Participating in environmental and social assessments - Support public consultation and due diligence checks.

Source: JICA Survey Team (2021)

The Project Management Unit (PMU) headed by the Project Director 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 officer 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. Project Operation and Management official (O&M) at DIUs shall be responsible for ensuring implementation and monitoring of ESAF at field level with a support of FPOs at district and field level respectively.

In order to strengthen organisation and institutionalise ESC within DHFP, it is proposed to have two subject matter experts within PMU who will be well supported by one specialist in Project Management Consultant (PMC) for the compliance of the environmental and social safeguards and 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. The details of the proposed positions are as follows.

- ✓ **Dy Project Director, Monitoring and Evaluation (M&E):** DPD M&E would be in charge of the Environmental Safeguards as a subject matter expert and shall/ could be engaged as contract basis with PMU from the initial Preparatory Phase of the Project. The expert would assist the PMU in the initiation of the safeguard related actions. Once the project implementation begins, DPD M&E will report to the Director under PMU who would be vested with additional charge to ensure the compliance of ESC. The expert will assist PMU in the matters concerning the overall M&E of the project as well as the following aspects related to environmental safeguards, such as:
 - a) To facilitate and coordinate with various implementation and line departments,
 - b) To update and finalise ESAF (if required),
 - c) To develop appropriate training materials on environmental and social safeguards, following the requirements in ESAF,
 - d) 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, and
 - e) 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.
 - f) To assist in monitoring the environmental aspects (if any) at regular interval
- ✓ **Dy. Project Director, Institution Development:** DPD, Institution Development will also be engaged as contract basis with PMU, and will assist DPD M&E 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. DPD, Instt. Development would also assist in smooth and effective implementation of public grievance and redressal mechanism under the project.
- ✓ **Environmental and Social Safeguard/ Environmental Economics Specialist (Project Management Consultants):** The specialist is planned to be deployed under the Project Management Consultant (PMC) to assist PMU on ESC issues of the Project. The specialist is expected to support PMU to review the project activities with a focus on the compliance on ESAF, provide guidance and technical advice to PMU/DIUs 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.

8.2 Capacity Development Programme

In order to ensure effective implementation of the proposed ESAF and associated safeguards procedures under the above proposed institutional arrangement, it would be mandatory to enhance

capacity of various agencies and stakeholders. In this regard, capacity development programmes, supported by the above proposed specialist/experts will not only help in establishing environmental and social management system, but would also ensure that environmental and social safeguards are effectively operationalised.

As a guiding principle an indicative capacity development programme has been formulated and depicted in **Table 12** as a reference to formulate a detailed capacity development training programmes related to ESC. The indicative training programmes given below should be revised further by the hired specialist/experts in consultation with the PMU.

Table 12 Indicative Capacity Development Programme for Environmental and Social Safeguards

Item	Descriptions
Training 1: Programme for Management/ Administrative Level	
Key Participants:	Designated officials of PMU
Training Programme:	Topic 1: General Orientation on ESAF for the Project <ul style="list-style-type: none"> ✓ Legal framework on environmental and social safeguard of India and JICA ✓ Basic introductory concept of safeguard ✓ Environmental and social impact assessment: overview & regulations ✓ Safeguard issues (vulnerable groups, SCs, STs, etc.) ✓ ESAF: steps and procedures with respect to the Project ✓ Free Prior and Informed Consent (FPIC) Topic 2: Monitoring and Evaluation for Environmental and Social Safeguard <ul style="list-style-type: none"> ✓ Concept of M&E ✓ M&E and reporting procedures ✓ Use of M&E results and feedback, including Grievance Redressal Mechanism (GRM)
Duration:	Two days training (once a year in the first four years at each district)
Training 2: Programme for Field/ Operational Level	
Key Participants	Designated officials and staff of DIU and field level officers and representatives of FPO's
Training Programme	Topic 1: General Orientation on ESAF for the Project <ul style="list-style-type: none"> ✓ Basic introductory concept of safeguard ✓ Safeguard issues (vulnerable groups, SCs, STs, etc.) ✓ Environmental and social impact assessment: overview ✓ ESAF: steps and procedures with respect to the Project ✓ Environmental protection, EIA and social safeguard regulations (specific) ✓ Process of community consultation and public participation ✓ FPIC ✓ Micro-planning ✓ PRA for data collection, analysis and report preparation Topic 2: Monitoring and Evaluation for Environmental and Social Safeguard <ul style="list-style-type: none"> ✓ Concept of M&E ✓ M&E and reporting procedures ✓ Use of M&E results and feedback, including GRM
Duration	Two days training (once a year in the first four years at each district)
Training 3: Farmers Facilitation and Environmental and Social Assessment for ESC	
Key Participants:	Designated field level officers and Representatives of FPOs
Training Programme:	<ul style="list-style-type: none"> ✓ ESAF: steps and procedures with respect to the Project ✓ Project activities planning (and micro planning) ✓ Role of related organizations ✓ Participatory ESA procedures ✓ Working with vulnerable groups ✓ Conflict resolution/ grievance procedures
Duration:	One session as part of other community related trainings (Once a year in the first four years/ location and timing shall be determined accordingly)
Training 4: Specific Training for Specific Techniques/Tasks to be Required	
Key Participants:	To be defined according to the main topics of the training programme
Training: :Programme:	<ul style="list-style-type: none"> ✓ Appropriate chemical use

	<ul style="list-style-type: none"> ✓ Soil conservation methods ✓ Environment health & safety standard for construction ✓ Occupational health & safety ✓ Mitigation planning and implementation
Duration:	To be defined according to the main topics of the training programme and key participants

Source: Compiled by JICA Survey Team (2021)

9 Public Consultation and Disclosure Mechanism

Public consultation and participation is one of the key regulatory tools employed to improve transparency, efficiency and effectiveness of regulation, regulatory alternatives and improved accountability arrangements. It is an apt process to provide information to farmers, project-affected persons and other stakeholders relevant to the proposed Project, so that they are (i) sufficiently educated about the project's objectives, activities, benefits and risks; (ii) have equal opportunities to participate in the Project; (iii) receive culturally appropriate benefits which are more suited to their interests, capabilities and priorities (*these shall be identified during the course prior to consultations*), and are shared equitably; (iv) are not adversely affected by the Project or its associated activities; adverse impacts shall be mitigated appropriately; and (v) can raise project related grievances and make sure required mechanisms are in place.

Consultation and Participation provides an opportunity and platform for people to express and share their views and concerns, contribute to design and implementation of the programme activities, discussions on sensitive social mitigation measures, while at the same time creating a sense of ownership for the Project. In this regard, FPIC is an important process to minimise any negative impacts. The summary of FPIC relevant activities is described in **Table 13**.

Table 13 Summary of FPIC Activities

Item	Descriptions
Objective	To establish broad farmer's support and willingness for implementation of the Project
Topic for Consultation:	<ul style="list-style-type: none"> - Disclosure of basic project related information including area, location, purpose/objectives, key activities, stakeholders involved, target beneficiaries. - Expected role and involvement of communities. - An overview of anticipated environmental and social risks. - Identified mitigation measures.
Participants:	<ul style="list-style-type: none"> - Relevant members of FPOs/ FPC/ SHG, etc. - Other important key persons (e.g. <i>Sarpanch</i>/ Head of the village)
Process:	<ul style="list-style-type: none"> a) Before on-set of sub-project implementation, immediately following formations of beneficiary groups, appropriate FPOs meetings and consultations that are culturally appropriate and in simple and understandable language b) Encourage farmer's participation in discussions, meetings and consultations, facilitate participation of women, elders and other vulnerable groups c) Field level officers will participate in general FPO meetings to discuss concerns, visit individuals who express doubt and/or criticism on any aspect of project implementation. d) Participants to be provided adequate time to assimilate information provided/ shared e) Opportunity to decide if they do not wish to participate. f) Presentation (use oral or visual methods to explain information to non-literate people) and discussion with stakeholders well represented by all sections including women, small and marginal farmers, SC/ST, poor and disadvantaged.
Material Required:	<ul style="list-style-type: none"> - Provision of simple/easy to read project brochures in local language. - Consultation and Participation Monitoring Sheets

Source: Compiled by JICA Survey Team (2021)

The public consultation mechanism shall reduce conflicts between the stakeholders. This is particularly focused on ensuring that vulnerable groups, including the poor, landless, STs/SCs, and

women, are properly consulted during site-level project planning and that they are given the opportunities and encouragement to participate in the Project. Moreover, public consultation processes can also enhance voluntary compliance for two reasons: (1) changes are announced in a timely manner and there is time to adjust to changes, (2) the sense of legitimacy and shared ownership that gives consultation motivate affected parties to comply.

10 Grievance Redress Mechanism

While there are the existing legal frameworks related to the Grievance Redress Mechanism (GRM) in the country², a Project-level GRM which shall be applied to all sub-projects is expected to be institutionalised, in which project-related grievances such as disputes over locations of infrastructure development, intended farmer's support, beneficiaries of value chain and marketing development, distribution of project benefits, contractor and his workers, project-related staff or consultants, etc. can be reported directly to the project.

In this regard, FPO officer, would be the first level of intervention. Thus, all concerns of the stakeholders shall be recorded in a project grievance logbook. Individuals can raise their grievances in name or anonymously, or through traditional institutions according to culture and context, as appropriate, which shall be recorded in written form. A grievance redress format/ template could be devised for this purpose, which would depend on the type and context of the grievance.

FPO officers should resolve all concerns or grievances raised by the communities, beneficiaries, etc. and in case an anonymous grievance has been put-up, it shall be addressed through public consultation through a village meeting, retorting generally to the raised point(s) and minutes of the meeting and outcomes shall be recorded. The grievance redress or compliance response is sent to the applicant in written, after resolving the grievance/ concerns.

However, in case the applicant (individual/ group) is not satisfied, she/he may approach to DIU for further redress, or in case of grievances that are more serious in nature, the FPO officers should forward such grievances to DIU. PMU officers shall be responsible to redress the grievance in consultation with the FPO officer, concerned applicants. All grievances should be addressed, redressed and resolved at this level.

In case of more serious grievances, then they should be dealt with through the project hierarchy as necessary and any complainant should be made aware of their legal rights according to the relevant legal documents. The GRM shall be announced through the consultation in stakeholder meetings.

² EIA Notification 2006 states that "Public Consultation and Public Hearing" which refers to "the process through which the concerns of local affected persons and others who have plausible stake in the environmental impacts of a project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. All Category 'A' and Category 'B1' projects or activities shall undertake Public Consultation...". Further, the RFCTLARRA-2013, involves consultations and redress of concerns of affected persons at various stages. Besides, Department of Administrative Reforms & Public Grievances under the Ministry of Personnel, Public Grievances & Pensions, GoI, has issued a Compilation of Guidelines for Redress of Public Grievances and also operates a web-based portal (<http://pgportal.gov.in/>).

11 Cost Estimation and Budget Allocation

ESAF is a tool to provide guidance on how the project activities should be carried out following the requirements of the JICA Guideline. And in many instances, the actions or measures mentioned in ESAF do not necessarily entail additional costs as they are often already identified in the project cost estimate. For example, baseline survey for identification and selection of target sub-project/ intervention areas are already proposed as project activities. Therefore, while there are activities related to ESAF implementation such as SA, Consultation, Information Dissemination, GRM, M&E, etc., these costs are embedded within the budgets of the corresponding project components. However, some additional provisions that are necessary for smooth implementation of ESAF and for which additional budgetary provisions are required, are described in the following sub-sections.

11.1 Personnel

As already proposed in the previous section, considering the current capacity of the implementation agencies, external specialist/experts in charge of environmental and social safeguard should be designated as indicated below. The cost of such personnel has been incorporated into the proposed budget.

- ✓ **Environmental and Social Safeguard / Environmental Economics Specialist (ESSS):**

It is proposed that 16 man-months need to be allocated, during Preparatory and Implementation phase, for the ESC specialist under PMC. The specialist would support the project in all aspects related to ESC and is expected to review the project activities with focus on the compliance of ESAF, and provide directions or advice to PMU and DIUs to ensure smooth and efficient implementation of environment and social safeguard measures, including reporting to JICA.

- ✓ **Nodal Officer-I / Monitoring and Evaluation cum Environmental safeguards Expert (ESE):** ESE shall/ could be responsible for environmental safeguards aspects under the project and responsible for implementation of ESC/ESAF from environmental safeguard aspects under the project.

- ✓ **Nodal Officer-II / Institution Development cum Public Grievance & Redressal Mechanism/ Social Safeguards Expert (SSE):** SSE will be responsible for implementation of ESC from social safeguard aspects under the project and will also be responsible for establishing and functioning of public grievance and redressal mechanism.

1-2 members from respective administration level such as PMU, DIUs shall be nominated as responsible positions for environmental and social safeguard and these costs shall be covered by their own organization, i.e. DHFP.

11.2 Capacity Development Programme

The following capacity development trainings are proposed in the **Section 7** in this document and ESSS shall support PMU and DIUs to ensure such capacity building trainings are delivered at each

administrative level adequately.

- ✓ **Training 1: Program for Management/Administrative Level** (once a year in the first four years at each district, two days training/year/district, PMU officials need to attend only one training in one of the district)
- ✓ **Training 2: Program for Field/ Operational Level** (once a year in the first four years at each district, two days training/year/district)
- ✓ **Training 3: Farmer's Facilitation and ESA for Environmental Special Safeguard** (Once a year in the first four years/ the location/timing shall be determined accordingly)
- ✓ **Training 4: Specific Training for Specific Techniques/Tasks to be Required** (To be determined)

The above-mentioned trainings would be imparted as a lecture style and no special equipment is required so that the cost requirement would be small (i.e. mainly for personnel, material preparation, accommodation or allowance for participants, etc.) Also, at the sub-project level, these trainings shall be imparted as a part of other trainings considering that several trainings would be organized during the course of project implementation.

Attachment 10.6.1-1 Environmental and Social Management Checklist

No.	Questions (English)	Answer	Improvement Plan
1. Policy (Environmental and Social Policy)			
(1)	Does the executing agency have any formal environmental policy or procedures? If yes, please describe their outlines and provide appropriate documentation. If no, does the executing agency have any plan to set such policy or procedures?	The Executing Agency (EA), UKHDS 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 and others) and the state government of Uttarakhand.	The existing Indian and Uttarakhand state legal/policy framework is sufficient for eliminating and mitigating serious adverse environmental and social impacts. The Project may involve certain sub-components which may have minor environmental impacts (e.g. small-scale infrastructure development and constructions). Such activities would not require environmental clearance as per the legislations. ESAF has to be prepared and that would act as the one of the principal documents to define measures to avoid adverse environmental and social impacts.
(2)	Are there any types of subprojects in which the executing agency will not take part due to the environmental and social risks under the Project? (e.g., projects involving handling of hazardous wastes or removal of endangered plants or animals).	The Project and its activities and sub-components are not anticipated to have any environmental risks such as handling of hazardous wastes or endangered plants or animals. Moreover, areas within 5 km radius of ecologically sensitive areas and that required land acquisition have not been selected.	
2. Procedures (screening, category classification and review procedures)			
(3)	Does the financial intermediary / executing agency have any environmental procedures such as screening, categorization and environmental review? If yes, please describe what procedures will be taken, in detail under the Project.	The Indian legislation system provides clear guidelines and procedures for environmental safeguard. The EA is not directly responsible for implementation of environmental procedures such as screening, categorisation and environmental review as per prevalent laws and regulations as the nodal agency is DoE.	ESAF shall be the principal document, which will clarify the basis for detailed procedures for screening, categorisation and environmental review of the Project and its activities. Additional supplemental documents, as deemed necessary, need to be prepared during the preparatory stage of the Project.
(4)	Please describe how you ensure that subprojects are implemented in compliance with the national laws and regulations and applicable JICA's requirements,	Under the project the Executing Agency will implement the Project through its Departmental Structure in the field (District level and below). EA would be hiring contractors for infrastructure	ESMF shall be further reviewed in accordance with latest JICA requirements.

No.	Questions (English)	Answer	Improvement Plan
	during their planning, construction and operation stages.	development through competitive bidding. The EA would be utilising elaborate standard bidding document of GoUK along with the legally binding contract document between the EA and the Contractor. This would cover stringent terms and conditions for safeguards as per the law such as adoption of appropriate safety standards, use of quality materials, control of water, air and noise pollution, soil excavation, waste disposal, minimum wages, proper work place facilities etc. Any violation of the laid down conditions shall attract penalty for the Contractors. Stringent monitoring systems will be in place to ensure compliance to the laid down laws and rules.	
3.	Organization and Staff (institutional framework and staff allocation)		
(5)	Please provide us with the organization chart of the executing agency's Environmental and Social Management System (ESMS).	The organization chart is shown in Attachment 10.5.1.	Organisational structure for ESAF implementation in the Project will be clarified at the initial stage of the Project.
(6)	Who is responsible for environmental and social management within the financial intermediary/executing agency? (name/role and title)	Uttarakhand Horticulture Development Society is responsible to ensure implementation and monitoring and compliance or ESAF.	
(7)	Are there any staff with training for environmental and social considerations in the executing agency? If so, describe them.	There is no trained staff for environmental and social considerations in the EA. Thus, it is proposed to have 2 SMS (DPDs) for environment and social safeguards, who will take care of all training aspects on environmental and social considerations.	This will ensure institutionalization of rules and procedures for environmental and social considerations within the organization as well as would ensure post project continuity.
(8)	What experience, if any, does the executing agency have of hiring or dealing with environmental consultants?	No prior experience of hiring or dealing with environmental consultants but have had experience of hiring consultant for Horticulture sector.	

No.	Questions (English)	Answer	Improvement Plan
(9)	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?	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 provided.	
4. Monitoring and Reporting			
(10)	Does the executing agency prepare environmental and social monitoring reports for the subprojects?	The construction work related to infrastructure development would be implemented through contractors having detailed ToR with inherent mechanism for adherence to environmental and social considerations as per law and standard practice. Moreover, environmental and social monitoring of activities will also be conducted as part of the regular project monitoring.	
(11)	Please describe how the executing agency monitors the social and environmental performance under the project.	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.	
(12)	Is there an internal process to report on social and environmental issues to senior management?	There is no systematic monitoring and reporting process for environmental and social issues. However, 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.	
(13)	Do you prepare any social and environmental reports?	Environmental and social reports are not being prepared by the EA.	EA will prepare and submit monitoring reports to JICA on a regular basis. These reports shall contain designated sections on environmental and

No.	Questions (English)	Answer	Improvement Plan
	<ul style="list-style-type: none"> - For other multilateral agencies or other stakeholders - E&S reporting in the Annual Report 		social aspects. The Project will include independent evaluations which will also assess the Project's implementation of the ESAF and environmental and social issues related to the Project.
5. Experience (results of the environmental and social management)			
(14)	Has the executing agency signed any national or international agreements or declarations concerning environmental issues?	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.	
(15)	Has the executing agency ever received any criticism of its environmental record? If so, what was the criticism?	EA has not received any such criticism so far.	
(16)	Does the executing agency carry out environmental audits of its properties to analyze health and safety issues, waste disposal, etc.?	The EA itself is not responsible for environmental audit.	
(17)	Please state any difficulties and/or constraints related to the implementation of the ESMS.	The EA lacks expertise and experience in managing and monitoring environmental and social risks in a systematic way and it will be the principal challenge.	Through the implementation of the Project, establishing the proposed safeguards frameworks and measures assisted by relevant expert/specialist(s), and through specific trainings, EA will build its capacity and experience for managing and monitoring environmental and social risks
6. Need of Capacity Development and Improvement Plan			
Yes, the indicative capacity development programs are proposed in the ESAF.			

Attachment 10.6.1-2 Pesticides Banned for manufacture, import and use in India

1	Alachlor(Vide S.O. 3951(E), dated 08.08.2018)
2	Aldicarb (vide S.O. 682 (E) dated 17 th July2001)
3	Aldrin
4	Benzene Hexachloride
5	Benomyl (vide S.O 3951(E) dated 8 th August, 2018)
6	Calcium Cyanide
7	Carbaryl (vide S.O 3951(E) dated 8 th August, 2018)
8	Chlorbenzilate (vide S.O. 682 (E) dated 17 th July 2001)
9	Chlordane
10	Chlorofenvinphos
11	Copper Acetoarsenite
12	Diazinon (vide S.O 3951(E) dated 8 th August, 2018)
13	Dibromochloropropane (DBCP) (vide S.O. 569 (E) dated 25 th July1989)
14	Dichlorovos(Vide S.O. 3951(E), dated 08.08.2018)
15	Dieldrin (vide S.O. 682 (E) dated 17 th July 2001)
16	Endosulfon (vide ad-Interim order of the Supreme Court of India in the Writ Petition (Civil) No. 213 of 2011 dated 13 th May, 2011 and finally disposed of dated 10 th January, 2017)
17	Endrin
18	Ethyl Mercury Chloride
19	Ethyl Parathion
20	Ethylene Dibromide (EDB) (vide S.O. 682 (E) dated 17 th July 2001)
21	Fenarimol (vide S.O 3951(E) dated 8 th August, 2018)
22	Fenthion (vide S.O 3951(E) dated 8 th August, 2018)
23	Heptachlor
24	Lindane (Gamma-HCH)
25	Linuron (vide S.O 3951(E) dated 8 th August, 2018)
26	Maleic Hydrazide (vide S.O. 682 (E) dated 17 th July 2001)
27	Menazon
28	Methoxy Ethyl Mercury Chloride (vide S.O 3951(E) dated 8 th August, 2018)
29	Methyl Parathion (vide S.O 3951(E) dated 8 th August, 2018)
30	Metoxuron
31	Nitrofen
32	Paraquat Dimethyl Sulphate
33	Pentachloro Nitrobenzene (PCNB) (vide S.O. 569 (E) dated 25 th July 1989)
34	Pentachlorophenol
35	Phenyl Mercury Acetate
36	Phorate(Vide S.O. 3951(E), dated 08.08.2018)
37	Phosphamidon(Vide S.O. 3951(E), dated 08.08.2018)
38	Sodium Cyanide (banned for Insecticidal purpose only vide S.O 3951(E) dated 8 th August, 2018)*
39	Sodium Methane Arsonate
40	Tetradifon
41	Thiometon (vide S.O 3951(E) dated 8 th August, 2018)
42	Toxaphene(Camphechlor) (vide S.O. 569 (E) dated 25 th July 1989)
43	Triazophos(Vide S.O. 3951(E), dated 08.08.2018)
44	Tridemorph (vide S.O 3951(E) dated 8 th August, 2018)
45	Trichloro acetic acid (TCA) (vide S.O. 682 (E) dated 17 th July 2001)
46	Trichlorfon(Vide S.O. 3951(E), dated 08.08.2018)

Source: Directorate of Plant protection, Quarantine and Storage

Attachment 10.6.1-3 Indicative Contents of Environmental and Social Assessment Report

A - Indicative Contents of Environmental Assessment Report

No.	Chapter	Descriptions
1	Introduction	Define basic purposes for EA, its scope and a brief outline of report organisation.
2	Sub-Project Description	Provide an outline of the proposed sub-project, its rationale, objectives, area, key activities, the proposed implementation schedule, etc.
3	Approach and Methodology	Describe the study approach and methodology adopted for carrying-out the EA, including collation of quantitative data and information, describe tools for monitoring and management of environmental parameters
4	Environmental Baseline	Provide brief profiles of the target area, existing environmental conditions in these areas, that will serve as a reference for future comparison and monitoring
5	Sub-Project Impacts	Describe sub-projects, its objectives and activities of the sub-projects, explains potential positive and negative impacts as a result of establishment of the sub-projects.
6	Public Consultation and Information Disclosure	Describe the results of public consultations, meetings and other interaction events with the communities.
7	Conclusion and Recommendations	Provide overall conclusions and recommendations, describe precise measures to avoid, minimise and/or mitigate adverse impacts on the environment, communities and particularly vulnerable groups due to sub-project activities, environmental management mechanism and implementation arrangements and monitoring activities and implementation arrangements.

Source: Compiled by JICA Survey Team (2021)

B - Indicative Contents of Social Assessment Report

No.	Chapter	Descriptions
1	Introduction	Define basic purposes for Social Assessment, its scope and a brief outline of report organisation.
2	Sub-Project Description	Provide brief outline of proposed sub-project, its rationale, objectives, area, key activities, the proposed implementation schedule etc.
3	Approach and Methodology	Describe the study approach and methodology adopted for carrying-out the assessment, including quantitative and qualitative data and information collation
4	Socio-economic Baselines	Provide brief profiles of the study (target) area
5	Sub-Project Impacts	Describe sub-projects, its objectives and activities of the sub-projects, socio-economic and livelihoods assessment, explain potential positive and negative impacts of the sub-project.
6	Vulnerable Groups:	Identify and describe particularly vulnerable groups within the community and how Project may affect them.
7	Public Consultation and Information Disclosure	Describe the results of public consultations, meetings and other interaction events with farmers.
8	Conclusion and Recommendations	Provide overall conclusions and recommendations.
9	Mitigation Measures	Describe precise measures to avoid, minimise and/or compensate for sub-project activities with adverse impacts on communities.
10	Monitoring	Provide the developed monitoring plan including monitoring mechanism and monitoring implementation arrangements

Source: Compiled by JICA Survey Team (2021)

Attachment 10.6.2 Environmental Monitoring Forms

Form-A: Environmental Monitoring (To be used during Construction)

Name of the Sub-Project:
Sub-Project ID:
Period of reporting (Quarter/Month/Fortnight):
Name and signature of the Reporting Officer:
Date of reporting:

1. Monitoring of environmental issues (Field observation)

(This shall be used in the sites, where significant environmental issue is expected. If the Environment Expert/ Monitoring Officer feels the need for testing of samples for environmental pollution then a separate Form-A1, appended to this form, may be used for data recording)

Date and time of site inspection	Subproject/ Location	Issues	Mitigation measures undertaken	Remark
1.1	Air pollution			
1.2	Noise and Vibration			
1.3	Surface water			
1.4	Ground water			
1.5	Construction waste			

1.6	Kitchen and other wastes from labour camp			
1.7	Chemical or hazardous wastes			
1.8	Subsidence and sedimentation			
1.9	Soil erosion			
1.10	Disturbance to ecological resources and vegetative cover			

Form-A1: Environmental Monitoring
(To be used during Construction)

Name of the Sub-Project:
Sub-Project ID:
Period of reporting (Quarter/Month/Fortnight):
Name and signature of the Reporting Officer:
Date of reporting:

2. Monitoring of environmental issue

(Whenever the Environmental Expert or other Monitoring Officers feel the necessity for carrying out tests for environmental pollution during construction, this form may be used)

(1) Surface water Quality

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Lake/Reservoir/Pond/Tank/Canal/Stream/River)										Average	Limit (E class water)	Remark
		1	2	3	4	5	6	7	8	9	10			
pH														
EC														
Turbidity														
TDS														
TSS														
Hardness														
Alkalinity														
Carbonate														
BOD														
TN														
TP														
Fluorides														
Chlorides														
Sulphates														
Sodium														
Potassium														
Calcium														
Magnesium														
Oil&Grease														
Iron														
Manganese														
Copper														
Zinc														
Phenolic C														
Color														

Cadmium														
Chromium														
Cyanides														
Lead														
T Coliform														
Pesticides														

Note: Standards set by Central Pollution Control Board as well as BIS-IS:10500, 2012 may be referred.

(2) Groundwater Quality

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Well/ Tube well/ Dug-wells/Handpump)										Average	Limit (E class water)	Remark
		1	2	3	4	5	6	7	8	9	10			
pH														
EC														
Turbidity														
TDS														
TSS														
Hardness														
Alkalinity														
Carbonate														
BOD														
TN														
TP														
Fluorides														
Chlorides														
Sulphates														
Sodium														
Potassium														
Calcium														
Magnesium														
Oil&Grease														
Iron														
Manganese														
Copper														
Zinc														
Phenolic C														
Color														
Cadmium														
Chromium														
Cyanides														
Lead														
T Coliform														
Pesticides														

Note: Standards set by Central Pollution Control Board as well as BIS-IS:2296, 1992 may be referred.

(3) Air Quality

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Site)										Average	Limit (NAAQS)	Remark
		1	2	3	4	5	6	7	8	9	10			
PM10														
PM2.5														
NO2														
SO2														
CO														
O3														
NH3														
Pb														
Ni														
As														
Benzo(a)pyrene														
Benzens														

Note: National Ambient Air Quality Standards (NAAQS) set by Central Pollution Control Board, may be referred.

(4) Noise and Vibration

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Site)										Average	Limit (NANS)	Remark
		1	2	3	4	5	6	7	8	9	10			
dB														

Note: National Ambient Noise Standards (NANS) set by Central Pollution Control Board, may be referred.

Form-B: Social Monitoring
(To be used during Construction)

Name of the Sub-Project: Sub-Project ID: Period of reporting (Quarter/Month/Fortnight): Name and signature of the Reporting Officer: Date of reporting:
--

1. Monitoring of social issue

Date and time of site inspection	Subproject/ Location	Issues	Mitigation measures undertaken	Remark
1.1	Interactions with local communities			
1.2	Resettlement (loss of income or loss of access)			
1.3	Impact of livelihoods			
1.4	Health and safety			
1.5	Accidents and traffic management			
1.6	Labour management			

Form-C: Environmental and Social Monitoring
(To be used during Operations and Maintenance)

Name of the Sub-Project:
Sub-Project ID:
Period of reporting (Quarter/Month/Fortnight):
Name and signature of the Reporting Officer:
Date of reporting:

1. Monitoring of environmental issue

(1) Surface Quality

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Lake/Reservoir/Pond/Tank/Canal/Stream/River)										Average	Limit (E class water)	Remark
		1	2	3	4	5	6	7	8	9	10			
pH														
EC														
Turbidity														
TDS														
TSS														
Hardness														
Alkalinity														
Carbonate														
BOD														
TN														
TP														
T Coliform														
Pesticides														

Note: Standards set by Central Pollution Control Board as well as BIS-IS:10500, 2012 may be referred.

(2) Groundwater Quality

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Well/ Tube well/ Dug-wells/Handpump)										Average	Limit (E class water)	Remark
		1	2	3	4	5	6	7	8	9	10			
pH														
EC														
Turbidity														
TDS														

TSS														
Hardness														
Alkalinity														
Carbonate														
BOD														
TN														
TP														
T Coliform														
Pesticides														

Note: Standards set by Central Pollution Control Board as well as BIS-IS:2296, 1992 may be referred.

2. Monitoring of social issue

Date and time of site inspection	Subproject/ Location	Issues	Mitigation measures undertaken	Remark
1.1	Impact of livelihoods			
1.2	Accidents (including Man-Animal conflict)			

Attachment 10.7.1 Environmental Checklist

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) N (b) N (c) N (d) N	(a) (i) As per the EIA notification of 14th Sep 2006 of Ministry of Environment and Forest, Environmental Clearance (EC) is required only for River Valley/ Irrigation Projects with > 2000 ha CCA. All the proposed sub-projects are minor-irrigation projects with < 2000 ha CCA (ii) Building/ Construction project with Builtup area >20,000 sqm require EC but proposed sub-projects are <20,000 sqm and therefore Environment Impact Assessment report is not required. (b) Not applicable (c) Not applicable (d) Other environmental permits are also not required for the proposed Project.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) N (b) N	(a) Specific stakeholder consultation meetings/workshops are yet to be planned. However, a series of meetings were held with various stakeholders in relation to project formulation. Comments of local stakeholders will be integrated into the design of sub-projects and activities prior to their implementation, following the social assessment and consultation processes. Consultation and information disclosure procedures to be implemented before and during preparatory phase, prior to subproject (component) implementation. EIA is not required for the proposed project according to Indian Law. However, based on necessity, public consultation related to project shall be considered. (b) While preparation of DPRs the EA consulted with different stakeholders including the local residents and their comments and suggestions shall be included in the DPR. The Survey Team has consulted a wide range of stakeholders and their suggestions and comments have been incorporated in the Preparatory survey report.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) N	(a) The project location and components have not been fully determined yet. However social and environmental considerations are to be factored into project design (through exclusion/selection criteria for project activities). For the proposed project sites alternative locations have been examined considering environmental and social considerations.
2 Pollution Control	(1) Water Quality	(a) Are considerations given to water pollution of the surrounding water bodies, such as rivers and groundwater by effluents or leachates from agricultural lands? Are adequate use/disposal standards for fertilizers, agrochemicals, and livestock wastes established? Is a framework established to increase awareness of the standards among farmers? (b) Is a monitoring framework established for water pollution of rivers and groundwater?	(a) Y (b) Y	(a) There is possibility of water pollution in the surrounding water due to inappropriate usage of fertilizers /pesticides for certain project activities. Although Govt. of Uttarakhand is focussed on increasing land under organic farming, however some limited usage of fertilizers/ pesticides for certain crop cultivation activities is anticipated. However, no significant serious impacts to water quality by the Project are predicted. (b) The Central Pollution Control Board and Uttarakhand State Pollution Control Board, Central Water Commission, Public Health Engineering Departments are carrying out regular testing of water quality in selected places. There is a monitoring framework established to regularly monitor the water and soil quality - especially water used by farmers for their toxicity and contamination level and take appropriate measures to improve the quality of water and soil, and address the environmental concerns.
	(2) Wastes	(a) Are wastes properly treated and disposed of in accordance with the country's regulations?	(a) Y	(a) It is anticipated that there will be no significant waste generation associated with the project activities since there will be virtually no manufacturing. However, if any impact may be predicted by further studies, as required, necessary measures will be carried out according to national regulations.
	(3) Soil Contamination	(a) Is there a possibility that impacts in irrigated lands, such as salinization of soils will result? (b) Are adequate measures taken to prevent soil contamination of irrigated lands by agrochemicals, heavy metals and other hazardous substances? (c) Are any agrochemicals management plans prepared? Are any usages or any implementation structures organized for proper use of the plans?	(a) Y (b) Y (c) Y	(a) Salinization is not a problem in Uttarakhand since enough rainfall in Kharif season has been recorded to avoid accumulation of salts in the soil. There is however a possibility as vegetable farming will entail the use of more fertilizers and agro chemicals. (b) Training of farmers are being conducted periodically by DOA for appropriate application of chemical fertilizers and pesticides. Moreover, Govt of Uttarakhand has recently passed the Organic Agriculture Act, 2019, and declared 10 of its blocks fully organic and is to be supported under agricultural support program. (c) There are no plans specifically for promotion of agrochemicals. However, the Project will prepare cropping plan for Farmer's organisations, which will include package of practices for cultivation of different crops. Standard use of agrochemicals, use of organic manures, INM, IPM etc. will be included in the cropping plan. The DIUs and FPO shall monitor the implementation of these plans. The Safeguard Expert at PMC will monitor the environment related activities as per EMP and EMoP.
	(4) Subsidence	(a) In the case of extraction of a large volume of groundwater, is there a possibility that the extraction of groundwater will cause subsidence?	(a) N	(a) Landslides is one problem due to heavy rains. No issues related to overextraction of ground water. The project proposes drip and sprinkler irrigation system may not be necessarily from groundwater source, however there is a possibility that extraction of large volume may cause subsidence. This however will be minimal. Besides, Tubewells will be undertaken only after they have been deemed feasible by the Ground Water Organisation of the IPH Department of the concerned area.
	(5) Odor	(a) Are there any odor sources? Is there a possibility that odor problems will occur to the inhabitants?	(a) N	(a) There shall not be any problems relating to odor. The Project does not involve any activity, which would create any odor problem.
3 Natural Environment	(1) Protected Areas	(a) Is the project site or discharge area located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N	(a) The EA confirmed that no activities will be carried out inside the Protected Areas (National Parks and Wildlife Sanctuaries). The Project activities include installation of minor drip/sprinkler irrigation systems. The Government of Uttarakhand has already demarcated Eco Sensitive Zones/ Areas around each National Park and Wildlife Sanctuary. If any repair work will be carried out in any eco sensitive zone then necessary permission will be obtained from the Forest Department.
	(2) Ecosystem	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site or discharge area encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) Is there a possibility that the project will result in the loss of breeding and feeding grounds for valuable wildlife? If they are lost, are there substitutes for the grounds near the original locations? (d) Is there a possibility that overgrazing will cause ecological degradation, such as impacts on wildlife habitats and desertification? (e) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?	(a) N (b) N (c) N (d) N (e) N	(a) The Project sites shall not be located within the primeval forest and ecologically valuable habitats. (b) The Project does not involve activities which are going to have huge discharge of wastes and effluents. (c) Although EA confirmed that no site would be located in eco-sensitive zone but if any site is located within an eco-sensitive zone, the EA will discuss with the Forest Department for necessary precautionary measures and approvals and accordingly carry out the repair and maintenance work. (d) The Project is not predicted to cause significant negative impact to the wildlife habitats and desertification. (e) The Project activities include construction activities to improve existing irrigation systems, but the scale is small. No significant ecological impacts are anticipated. The Project shall establish Project Monitoring System, which would include monitoring of environmental and social aspects. Environment Management Plan (EMP) shall be prepared for the sub-projects, which are going to create significant environmental impacts. Environmental Monitoring Plan (EMoP) shall also be prepared for these sub-projects.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(1) Resettlement	<p>(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?</p> <p>(b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement?</p> <p>(c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?</p> <p>(d) Is the compensations going to be paid prior to the resettlement?</p> <p>(e) Is the compensation policies prepared in document?</p> <p>(f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples?</p> <p>(g) Are agreements with the affected people obtained prior to resettlement?</p> <p>(h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?</p> <p>(i) Are any plans developed to monitor the impacts of resettlement?</p> <p>(j) Is the grievance redress mechanism established?</p>	<p>a) N</p> <p>b) NA</p> <p>c) NA</p> <p>d) NA</p> <p>e) NA</p> <p>f) NA</p> <p>g) NA</p> <p>h) NA</p> <p>i) NA</p> <p>j) NA</p>	The Project shall not have any activity, which involves involuntary resettlement or relocation of villages/ habitations.
	(2) Living and Livelihood	<p>(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?</p> <p>(b) Is proper allotment made for rights to agricultural land use? Is there a possibility that the allotment will result in inequitable distribution or usurpation of land and available resources?</p> <p>(c) Are proper allotments, such as water rights allotment in the project area made? Is there a possibility that the allotments will result in inequitable distribution or usurpation of water rights and available resources?</p> <p>(d) Is there a possibility that the amount of water used (surface water, groundwater) by the project will adversely the downstream fisheries and water uses?</p> <p>(e) Is there a possibility that water-borne or water-related diseases (e.g., schistosomiasis, malaria, filariasis) will be introduced? Is adequate consideration given to public health education, if necessary?</p>	<p>a) N</p> <p>b) NA</p> <p>c) Y</p> <p>d) N</p> <p>e) N</p>	<p>(a) The availability of micro level irrigation will not only enhance agriculture production but also judicious water management through drip and sprinkler irrigation. However in each site it must be confirmed that drinking water needs are not affected by the proposed project as in Uttarakhand the streams also sometimes the main sources of drinking water in the lean seasons. Wherever there are IPM schemes downstream/upstream of the source of the proposed project, clearance is being sought from the IPM. Also during community meetings the issue is being discussed and adequate measures are being taken to avoid any adverse impact on their drinking water source.</p> <p>(b) There is no land allotment or land rights to the Project beneficiaries for agriculture purpose. The Project shall target the farmers, who are already having land. Other infrastructure such as processing units would be developed on farmer's own land/community land and other infrastructure such as Nursery and market etc. on Government land.</p> <p>(c) In the project micro irrigation would be taken up in the form of sprinklers and drip irrigation for efficient usage of water. The project proposes building of strong institutional mechanisms for operation and maintenance that will also ensure the equitable distribution of water through farmer's organisation.</p> <p>(d) There are no commercial fisheries downstream. It is expected that the efficient micro water irrigation proposed would not be having any severe impact on downstream flow. Moreover, most of the target beneficiaries would be the downstream users themselves in the sites and integrated into the project thus will not be adversely affected by the project.</p> <p>(e) The chances of waterborne diseases will be very less for minor irrigation such as drip irrigation/sprinklers etc. But the EA (PMU and DIUs) will closely monitor the incidences of water-borne diseases and respond to them, if need be.</p>
4 Social Environment	(3) Heritage	<p>(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?</p>	<p>a)N</p>	<p>(a) None of the project sites area located in areas that is of archaeological, historical, cultural, heritage or religious significance. It is not foreseen that such areas would be part of the project and if there is it would be avoided. Necessary precautions will be taken, while the construction activity is going on nearer to any heritage place.</p>
	(4) Landscape	<p>(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?</p>	<p>a) N</p>	<p>(a) Under the project no major construction activity is proposed at a mega scale. The proposed building infrastructure are small scale development and appropriate laid down rules would be followed for construction activity. For sprinklers and drip irrigation mostly only pipelines would be laid down and in many sites the existing irrigation facilities will be rehabilitated/upgraded. Accordingly significant negative impacts are not predicted with proper management at construction stage. Hence the project will not affect the landscape adversely.</p>
	(5) Ethnic Minorities and Indigenous Peoples	<p>(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples?</p> <p>(b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?</p>	<p>a) Y</p> <p>b) Y</p>	<p>(a) The Project will take up only small scale construction structures. There will not be any adverse change in culture as well as in the existing water use rights. The existing water users will get improved agriculture benefits.</p> <p>(b) If ethnic minorities/ tribal people are already there, they will continue to get the benefits from the agriculture system.</p>
	(6) Working Conditions	<p>(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project?</p> <p>(b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?</p> <p>(c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.?</p> <p>(d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?</p>	<p>a)Y</p> <p>b)Y</p> <p>c)Y</p> <p>d)Y</p>	<p>(a) The Project Proponent is a State Government Department (Horticulture Department) and it has to abide by all laws and rules of land associated with the working conditions.</p> <p>(b) As required, proper instruction and guidance on safety consideration will be given to workers and other individuals involved in the Projects.</p> <p>(c) Construction activities will be done by construction contractors engaged by the EA. They will be bound by the provisions of the standard contract executed between the EA and Contractors. The EA has to follow elaborate procurement guidelines and contracts as per GoUK. The provisions of safety and security, fair working conditions, fair wage/ minimum wages, basic work place facilities are included in the contract as part of safeguards. The EA confirmed that all these terms and conditions will be closely monitored during the project.</p> <p>(d) These aspects will be looked into during the construction phase as mentioned in (b).</p> <p>(e) The Construction Contractor will be responsible for providing safety and security. The EA will closely monitor the work of the Contractors.</p>

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
5 Others	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? (b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	(a)Y (b)Y (c)Y	(a) The Construction Contractor is bound to take adequate measures to reduce the impact on the environment as per the conditions of the contract. The EA will add further compliances required to safeguard the environment as well as social concerns in the legally binding contract. (b) Mitigation measures against different environmental problems that could arise are already identified and included in the standard bidding/contract document. (c) Mitigation measures against different social problems that could arise are already identified and included in the standard bidding/contract document.
	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a)Y (b)Y (c)Y (d)N	(a) Monitoring should be executed, based on a monitoring system to be developed for the Project which includes the monitoring of environmental and social safeguards measures (b) and (c) The items, methods, and frequencies of the monitoring system are covered in ESAF (d) The monitoring requirements will be entirely for the purposes of the Project and additional reporting to regulatory agencies will not be required because the project activities will not require environmental clearance.
6 Note	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Forestry checklist should also be checked. (b) For the projects including construction of large-scale weirs, reservoirs, and dams, where necessary, pertinent items described in the Hydropower, Dams and Reservoirs checklist should also be checked.	(a)NA (b)Y	(a) The Project doesn't include forestry activities. Although some access road may pass forests, but no significant impacts are predicted for the Project. (b) The Project will establish minor irrigation system such as sprinklers / drip irrigation for judicious use of water resource, setting up nurseries, construction of small building infrastructure etc. and No new construction of dams and reservoirs are proposed.
	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a)NA	(a)NA (global issues may affect agriculture activities under the project, but the project doesn't cause negative impact to transboundary or global issues.)

Source: JICA Survey Team (based on JICA Environmental Checklist 16 Agriculture, Irrigation and Livestock Projects)

- Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made.
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
- Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which the project is located.

Attachment for Chapter 11

Attachment 11.8.1 Example of Japanese Branding

Crops	Features of the Cluster	Leading Cooperatives
Apple	Hirosaki City municipality (Chamber of Commerce) is promoting their apple sharing 21% of Japanese apple production, as “Japan Premium Apple” by means of value-added approach of “active traceability” for showing their apple to the customers and “clean agri” for achieving zero emission (https://feelnippon.jcci.or.jp/projects/detail.php?id=5174)	Hirosaki City, Chamber of Commerce, Aomori pref.
Apple	Japan Agriculture Cooperative (JA) Soma at Aomori pref. promotes the apple based on their cultivation methods such as taste, outlook color, etc., with bland name of “Hiuna Apple” based on high density dwarf type plantation (https://www.ja-souma.or.jp/eshop/).	Japan Agriculture Cooperatives (JA) Soma, Aomori pref.
Apple, Grape, White Peach, Pear, Sand Pear, etc.	JA Matsumoto Highland at Nagano pref. in highland at 600 – 1000 m above sea level, is promoting the various kinds of fruits based on their location of highland and newly developed genuine varieties (https://www.ja-m.iijan.or.jp/food_agri/crops/fruite/). Japanese apple productions by prefectures are: 1) No1 of Aomori pref. with production of approx. 60% of Japanese apple, 2) Nagano pref. is succeeding to Aomori with almost 20% of the production, 3) Prefectures of Tohoku Region are succeeding the two prefectures at northern and/or highland area. Those Japanese apple production area are at cold area. The apple harvesting period is from Sept to Dec, that were longer than before from the end of Oct to Dec based on the development of the early ripen varieties. Apple harvested during early season during Aug – Sept has advantages at market. Japan is mainly producing varieties of white peach and production of yellow peach that is common in India is limited. The productions of both peaches are objected to sale in fresh market and limited for processing i.e., puree, canned peach, etc.	JA Matsumoto Highland, Nagano pref.
Pear	The committee composed of JA groups, markets, shipping group, municipality, producers, etc. promoted their pear: registered geographical indication (GI) bland name combined prefecture and variety names as “Yamagata La-France” for strengthen the bland name of pear. The bland name is maintained by cultivation control such as fruit thinning, pruning, etc., or date of harvesting. (http://agrin.jp/ufile/7/53/26750/image1_file0120071916180512104.pdf).	Yamagata pref. La. France Promotion committee
Pear	JA Yamagata Okitama is one of members of the committee above and promoting their product of pear by means of presentation about cultivation methods such as pruning, fertilizing, and record of chemical apply. Also, the cooperative promotes their pear by name of variety of “La France”. http://www.okitama-yt-ja.or.jp/okitama/people/lafrance/index.html	JA Yamagata Okitama, Yamagata pref.
Pea	JA Kishu registered the trademark of the pea variety as “Kishu Usui”, with the characters of larger size, slightly sweetness, soft and flaky taste - original variety name is Usui Endo. Wakayama pref. is leading pea production area among Japanese prefectures and the production is sharing almost 50% of Japanese total. Kagoshima pref. is at second places with 18 % of production. Among the Wakayama pref., the coastal area is major producing areas of pea and shipping period is starting from November up to May. Kagoshima pref. is also shipping same period. Other than the period, means Japanese summer to autumn, pea producing areas are scattering to all other Japan. The Wakayama pea cluster is presented in the HP of the cooperative (https://www.ja-gp-wakayama.or.jp/sale/#sub06)	JA Kishu, Wakayama pref.
Tomato	JA Biratori (http://www.nishipa.or.jp/nishipapr/) is promoting “Nishipa no Koibito” means “Lover of Nishipa” - registered trademark of Biratori Tomato. The tomato is No 1 production of fresh and processed tomato in Hokkaido pref. at north end of Japan. Name of “Nishipa” comes from Ainu people language, means master, rich or gentlemen and tale of Nishipa who	JA Biratori

Crops	Features of the Cluster	Leading Cooperatives
	<p>loved tomato and eating tomato every day for maintaining health that well matured in red color tomato.</p> <p>Japanese tomato is mainly produced for selling at fresh market – indeterminate type and pink color varieties those varieties are good for fresh, in the polyhouse with or without heating. Japanese annual production of the fresh tomato is at around 700,000 mt. Meanwhile the processing tomato production is at around 100,000 mt, in Nagano and Hokkaido Pref. of rather cold area, based on the government standard for Lycopene content – crimson color.</p>	
Onion	<p>JA Kitamirai at Hokkaido pref., north end of Japan is one of Japanese leading onion clusters that has been developed based on the unique cropping type and genuine varieties adapted to the climate – temperature and critical day length (https://www.jakitamirai.or.jp/nousantop/onion/#firstSection).</p> <p>Japan produces mainly yellow color onion, against to red onion of Indian Onion, and the varieties of Japanese yellow color onion are varying depend on the area of Japan or climate and cropping types.</p>	JA Kitamirai, Hokkaido pref.
Potato	<p>JA Kitamirai is also one of leading potato production clusters in Japan. Potato of JA Kitamirai is featured by strict and reliable joint grading by the trained examiner of cooperative enabling competitive group sales. The grading is practicing for extracting sample, inspection, residues of agrichemicals (Introduction of Potato of JA Kitamirai: https://www.jakitamirai.or.jp/nousantop/potato/).</p> <p>Hokkaido pref. is producing more than 70% of Japanese potato and the potato production is featured the cropping type of sowing in April – May and harvesting in Aug – Oct. Other than the fresh potato, stored potato is sold as stored and matured potato based on market price. Kyushu region produces almost 10% of Japanese potato and featured mainly sowing in October – December for harvesting in February – April for selling in fresh.</p>	JA Kitamirai
Garlic	<p>Takko Ninniku (garlic in Japanese) is registered brand name of JA Hachinohe at Aomori Pref. since 2006. The brand is developed based on the taste and reliability maintained based on the strict control of nutrition (composting and fertilizing), pest and disease control with record keeping for the cultivation (https://takko-kanko.com/).</p>	JA Hachinohe, Aomori pref.
Mango	<p>JA Okinawa developed mango cluster and is producing Alwin, Keitt Mango, or other mangoes. Almost all mango trees are dwarfed and growing in polyhouse. Each mango fruit is bagged on the tree or suspended in the polyhouse in principle. The retail prices of the fresh mango per piece are US\$10.00 to US\$20.00 for 300 - 400g each in average (http://www.ja-okinawa.or.jp/agriculture/detail.php?id=21). There are quite differences between Indian and Japanese mango.</p>	JA Okinawa

Source: Compiled by JICA Survey Team

Attachment 11.10.1 Gender Strategy and Action Plan

GENDER MAINSTREAMING AND ACTION PLAN IN “UTTARAKHAND INTEGRATED HORTICULTURE DEVELOPMENT PROJECT” (UKIHDP)

AND

GENDER ACTION PLAN (GAP) OF “UKIHDP” (Proposed by JICA Survey Team)

Gender Mainstreaming Strategy for UKIHDP -

Background-

Gender equality is a key dimension in sustainable economic development and empowering rural women to improve their livelihoods and strengthen the society. However, rural women have limited access to land, credit, information and technologies, and they face difficulties in terms of mobility, political participation and leadership. It is expected that any development project should benefit all sections of the society in an equal manner however on ground it doesn't seem so, women participation is an essential component of the developmental processes.

As per the project document of Uttarakhand Integrated Horticulture Development Project (UKIHDP), it is mentioned on gender that “the flow of benefits” directly to women would be ensured by having at least 50% of female membership in all levels of institutions and initiatives. The project would also ensure that women participate in all level of institutions involved in project management and implementation. The project would promote advances horticulture based livelihood activities that specifically empower women –by enhanced access to food and other resources as an equal status farmer, and easing the manual work involved in horticulture production”.

As a part of (UKIHDP/ JICA) guidelines and policies of State and central Government, gender inequality has to be addressed in a systematic manner in every step and activities of the project. Therefore gender mainstreaming strategy is an integral part on gender and developing a Gender Action Plan (GAP) is the best way to ensure gender equity in the project with crosscutting approach along with actionable points and indicators.

Through this gender policy, project will be trying to achieve following strategic objectives:

1. Promotion of gender inclusive and climate adoption activities by involving the most vulnerable communities and to uplift the socio-economic status of the farming community.
2. Enable women and men to have equal voice and influence in rural institutions and organizations by enriched behavioural and skill inputs.
3. Achieve a more equitable balance in workloads and in the sharing of economic and social benefits between women and men.

Gender Strategy of (UKIHDP) Uttarakhand Integrated Horticulture Development Project-

Keeping in view UKIHDP’s focus on addressing gender inequalities, the project document broadly mentions that the project envisages increasing income and generating employment opportunities among women and small holding farmers in sustainable horticulture production, processing and marketing. The gender strategy of UKIHDP addresses gender inequalities and discrimination in terms of access to land, water, education, training, markets, financial services and easing out manual work involved in crop production and other livelihood activities. Since women contribution is higher in horticulture and agriculture sector, the project demands for more women participation, women leadership, development, women empowerment and women friendly activities and practices to be promoted to reduce gender gap in the society. The strategy is prepared on the lines of UKIHDP strategic objectives on gender equality with special focus to economic empowerment, equitable distribution of workload and equal voice in decision making.

The strategy is also covering other aspects of gender gap in the society and how various gender issues will be addressed at all levels in context of institutional building, capacity building and IEC activities, farm & off-farm activities, social and economic empowerment of women through horticulture sector. The strategy will ensure that women are in lead role and have active participation in decision making in farmers FPOs /FIGs, and technological interventions in the farming sector.

Key strategic interventions to ensure gender equality in the UKIHDP -

Women membership in primary institutions : Field visits and interactions with women revealed the fact that women who are associated with the Self-help groups/ Producer groups and wherever the SHGs movement is good, the awareness of women, communication level and participation in various social and business activities is high. While the project will promote all the women in the project area to associate with one or the other groups.

The project will strengthen the existing women based SHGs and producer groups so that women leadership is enhanced. Under the project, equal and meaningful participation of both men and women is ensured at all levels. Participation of women in the group is ensured by having a policy of covering at least 50 % women in the commodities formed under the project.

Participation of women in Training and Skills development: Training women members and leaders results in strengthening social capital as well as ensuring that development interventions are more relevant . Equal participation in capacity building programs/skill training programmes is ensured in the project by clearly articulating minimum 50% participation level of women in producer groups and also in the skill training programmes being taken up in the project. Wherever gaps will be observed in terms of participation, the project team will address it strategically after analyzing the reasons for low participation. Project has special objective to introduce the subject of Horticulture at primary, middle and secondary levels in the schools of Uttarakhand so that interest among girls and boys can be inculcated towards technicality of the horticulture from the beginning.

Enabling women and men to have equal voice and influence in rural institutions : Women and men often have different roles in the economy and in society, and consequently their priorities, needs and interests may differ. Women's voices need to be heard for policies to be appropriate and therefore strong women's representation is necessary. Impediment to women's participation – both as members and as leaders – in rural producer organisations, cooperatives and community organisations need to be removed. Similarly, women's groups and rural producer organisations need to be supported to allow networking for experience-sharing and advocacy. Women's contributions to decision-making at household and community levels need to be valued.

Promoting Women's Autonomy and Empowerment: In Uttarakhand most of the agricultural tasks are performed by rural women. Project will encourage women to select diversified and advanced options that have less drudgery and high production. Women are also encouraged to participate in non-farm activities through project interventions to get direct cash benefits. They will be encouraged towards access to money by providing multiple livelihood options along with access to banks by opening bank account. Development reports have increasingly acknowledged that there is a need for women to participate in proportionate numbers in the management of land and trading opportunities in the local markets. In the context of growing feminisation of agricultural work and the informal sector, women need appropriate skills and unmediated control of land and related production inputs in order to successfully manage their lives and increase agricultural productivity.

To ensure "Financial Freedom and Literacy women farmers encourages to open individual accounts in bank before forming producer groups as farmer. This one step would enhance their financial capabilities and collectively increase women autonomy in their family and the society as whole.

Access and ownership of land and other productive resources: A recent FAO report informs that closing the gender gap in agriculture with women's access to ownership of land and productive assets,

could increase yields in the women run farms by 20-30 %. This “could raise total agricultural output in developing countries by 2.5 – 4%, which could in turn reduce the number of hungry people in the world by 12 – 17%” (FAO, 2011: 5).

Women lack equal authority regarding decisions on land use. It is often argued that women who have land documents in their name are likely to be in a stronger bargaining position than women who do not formally own land. Women face many disadvantages, even if they belong to a household that has land documents. Those without land in their name, however, are less likely to be involved in the decision making process. Realizing the importance of land ownership by women, the 12th Five-Year Plan says: “Where new land is being distributed or regularized, individual titles in women’s name only, rather than joint titles with husbands could be considered. In cases where joint pattas were issued in the past to occupants of government land, “such pattas would be made partitioned to wives if they so desire, can have half the share of land in their single names” (para 23.25).

In India, land is governed by state law, rather than national law. Several states in the country have implemented programmes that suggest secure land rights of women, with full control and ownership. A growing number of econometrically robust studies show that land and asset ownership by women has significantly better outcomes for their agency as well as for child survival, education and health, than those owned only by men.

The project initiatives in terms of capacity building and policy advocacy will facilitate the ownership of the land and other resources for the women. These issues will be taken up in an organized and systematic manner that makes women empowered collectively about their entitlements.

Reducing Women’s Drudgery : Excessive workload, long working hours and multiple task responsibilities in family have resulted in limited time for women to look after their own health and welfare. At present, women’s participation in community affairs and decision making is low because to their excessive workload in family. Labour-saving technologies such as agricultural tools/ equipment and machines will be suggested and introduced as women friendly technologies in agriculture and agri-allied activities. Similarly availability of irrigation, drinking water, fodder development schemes will also be promoted through convergence to reduce women’s workloads as well as save their time to take up leading roles in farmers institutions.

Migration and women workload: The increased out-migration of men from rural farming households to urban areas has led to changes in gender roles, with women taking on an additional range of tasks. Men’s out-migration has also meant that many rural women are becoming increasingly involved in subsistence and commercial production. It has been observed while discussing with women stakeholders in villages along the Tons valley (Uttarkashi) men are more engaged in labour work or in cattle grazing and women do agriculture activities besides the household works. Custom service centre for providing small machines and implements is also proposed in the project via convergence with agri universities and KVKs for providing farm implements and giving small tractors and machines on custom service basis will reduce the manual work of the women as well as increased autonomy in handling farm based man dominated activities

Promotion and development of Ergonomic tools and machines: Gender friendly ergonomically designed and women users customised technology like smooth operating tractors, power tillers, fruit plucking machines, sprayers should be introduced in horticulture and agriculture and women farmers will be encouraged and trained to use these. The project will make all efforts to develop and design and promotion of new drudgery reduction technologies (ergonomically designed tools and equipment) through convergences and by providing various supports under the project to launch it in project area.

Involvement in Community Affairs/Decision Making: Efforts will be made to ensure women participation in economic and financial decision making in all tiers, by involving women on the key positions in the farmers institutions and implementing and technical agencies. Project team will encourage women farmers to take lead role in business promotion, market access and profit-loss calculations of the cooperatives to make them self-reliant. for this project organised special trainings on the management, financial and market analysis to women leaders in the project area.

Empowerment to enable rural women to have equal opportunity to participate in, economic activities in the project: To engage in productive activities effectively and efficiently both women and men require access to and control over assets – inputs, technologies and finance; more secure land tenure rights within both statutory and customary systems; and stronger links to profitable markets. They also need access to economic services – such as extension, training and business development – and the opportunity to participate in decent work. All these aspects are covered well, both men and women are given equal opportunities. The participation of men and women needs to be captured and assessed in every sector and activity. Through well defined byelaws of producer groups and FPOs formed under the project, it is ensured that the participation of women is encouraged and there is no discrimination in the distribution of benefit in terms of dividends, bonus and incentives. The project would also focus on special activities for women empowerment, including women-dominant livelihood and value chain activities post harvesting and processing based products, organic vegetable growing, high tech and ergonomic etc.), The awareness and communication campaigns under the project will also have a specific gender focus. The project includes gender specific indicators With the high literacy in the Project.

Ensure Enhance level of income of women farmers: The project will benefit about 30,000 women farmers and producers in Uttarakhand with significant enhanced income by technology demonstration by the project. This will ensure in project by Increase production and productivity and availability of horticulture crops like various types of mushroom, bee-keeping, sericulture, tea, medicinal & aromatic plants with women ownership. Post harvesting, Processing units are well established in improving productivity, employment generation and improving economic conditions of the women farmers. Women farmers will also be encouraged to lead Front Line Demonstration (FLD) on their field and training in post-harvest management. Rules, procedures, and guidelines will be employed to promote and enable equitable access to project and assess. the benefits to women farmers.

Capacity building of the Project Team on Gender- Project UKIHDP targeting equal participation in the entire value chain of horticulture, so it's imperative that implementing/technical agencies must have almost equal representation women staff and trainings on gender and social analysis would prove useful to Technical Agencies , including researchers, communities, and policy-makers. Gender balanced training is an important strategy to promote gender equality in skills and knowledge sharing.

Committee to solve sexual Harassment cases

“Internal Committee” as compliance of “Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013 will be formed in UKIHDP at Project Management Unit level. It will deal with all the matters of Divisions, Technical /Implementing agencies and Community based institutions, if referred.

Overall, the project will be adopting multiple methods to address the issue of gender inequalities and discrimination from household level to groups and to larger community level.

Key Strategies and Action Points

In short following strategic interventions will be carried out by UKIHDP in the project areas during the complete project duration to narrowing down the Gender Gap and create gender balance environment in all the interventions of project , which will be measured on quarterly or biannual basis –

1. **Minimum percentage of Women in PGs/VPGs:** Formation of 50% women specific Producer Group/Vulnerable Producer Groups in the project area or ensure at least 50% women representation in mixed groups.
2. **Participation in Management Committee:** In the mixed federations/livelihood collectives at least 50% women will constitute the board of directors, where at least 2 women shall hold key-positions (President, Vice-president and Treasurer).
3. **Women Staff in Technical Agencies and UKIHDP:** Efforts will be made to ensure at least 50% of women staff engaged in Technical/ Implementing Agencies and 40% of women staff engaged in various project units of UKIHDP. To the extent feasible, UKIHDP implementing and planning teams will have local women Mobilisers (kisaan Mitra/Sakhi) who would be involved in social mobilisation to encourage greater participation of women farmers from the grass root level to apex.
4. **Women Participation in various meetings and other initiatives:** Efforts will be made to ensure at least 50% women participation in all community and project level meetings, conferences, workshops, exposure visits and so on, (Except those units where the number of women is less than 50%), Exclusive women groups/farmers technical and other required trainings will also organized if realized that they can learn better in exclusive learning atmosphere
5. **Women coverage in training Programmes:** In the vocational trainings planned under the project, focus is on coverage of women in the technical trainings wherein emphasis will be given on selecting some of the trades and services for technical training that are suitable for women in context of their placement and compulsory with one women trainer, subsidy for women farmer will be enhanced by 20 % to motivate woman farmers to come forward and join the technical trainings.
6. **Participation of women members in Financial Literacy programmes:** Project will ensure financial literacy for all the women members of PG/VPGs and LCs in a phased manner.
7. **Participation of women in Leadership programmes:** UKIHDP will ensure that the capacities of all the office bearers of PGs/VPGs and Board of Director of Livelihood Commodities are developed through various capacity building initiatives including leadership and governance training, cross visits etc.
8. **Participation of women in decision making processes:** Women will be encouraged to participate in common decision making process at the level of collectives through creating atmosphere to involve women leaders providing favourable atmosphere to keep her voice and decision without bias and influence.
9. **Drudgery reduction programs and initiatives:** Project will sensitise the community to adopt Drudgery reduction practices and tools and provide these tools on subsidy rates, so that women farmers can easily procure it and use to ease out their household and farming task and save time to manage other responsibilities. **As result at least 40 % women beneficiaries should adopt these practices/techniques and tools and should report reduced at least 30% of her workload .**
10. **Promotion of Agri allied Units for women groups and cooperatives** - Providing business opportunities to the existing women groups will be beneficial for the women and the project. Almost every village is having “Mahila Mangal Dal” (Women social and cultural groups)/ NABARD and IFAD institutions. These groups will be trained and strengthened to take up business activities at local and cluster level.
11. **Internal Committees for ensuring redressal of sexual harassment cases:** An “Internal Committee” will be formed in UGVS at Project Management Unit level which will deal with all the **sexual**

harassment related matters of Divisions, TAs and Community based institutions for the redressal of Sexual Harassment of Women at Workplace.

12. **Research Component** - The project will have component of research to identify the issues related to gender so that capacity building and policy interventions can be planned. Under the project, the provision of funding for more students to undertake graduate research fieldwork on gender issues in Horticulture would enhance support for making agricultural and horticulture research and knowledge products more gender inclusive
13. **Extension Services** - Project will stress on building good **Extension Services** to assist women farmer understand the technical terms associated with Horticulture in a language they are comfortable with. Awareness and extension communication campaigns under the project will also have a specific gender focus.
14. **Policy advocacy for Gender equity** - To enhance capacity building for women farmers the project will carry out policy advocacy for smooth transfer of land in the name of the women farmer under the Governments GO which allows transfer of land in the name of any member of the family at the cost of Rs 1000 stamp. This amount could be further reduced to assist women famers associated with the project .
15. **Enhance level of income of women farmers** - The project's target is at least 25 % women farmers will report the enhanced income by 40 -50 % by the end of the project.
16. **Creating Equal Opportunity for women-** Promotion of women in each level including Marketing players, transporters (women drivers and truck owners), staff of trainings, and supervisors and extension workers. Finally, to ensure equal opportunity for employment, UKIHDP will encourage qualified women applicants for positions, including grass root level community organiser under the project as per UKIHDP rules and regulations.

The project recognizes that the best way to raise awareness of the gender issue, and to support incorporation of a gender perspective in planning is to develop and implement a gender mainstreaming strategy listing the steps to be taken in program planning and management. Project will use gender-sensitive indicators and collect sex-disaggregated data and this will be systemically recorded, reported and integrated into adaptive management responses.

GENDER ACTION PLAN OF “UKIH DP” WITH TIME LINE INDICATORS FOR MONITORING AND EVALUATION

Activity	Indicators	Assessment	Timeline	Responsible Unit
Formation of Producer Groups/Vulnerable Producer Groups (PGs/VPGs) with women members	At least 50% women included in the PGs/VPGs formed under the project	_____ women are included in PG/VPGs, out of the total members of PG/VPGs	By Mid term	Technical Agency (TA) under guidance of Divisional Project Management Unit (DPMU)
Participation of Men & Women in Producer Groups/Vulnerable Producer Groups (PGs/VPGs) and commodities	At least 50% women participate in the meetings of PGs/VPGs and also in Livelihood Collectives	_____ women participated in the group meetings out of the total members participated _____ women participated in the meetings of Livelihood collectives out of the total members participated	By Mid Term	Technical Agency (TA) under guidance of Divisional Project Management Unit (DPMU)
Participation in Management Committee	At least 50% women constitute the board of directors in the mixed Federations/livelihood Collectives At least 2 women shall hold key-positions (President, Vice-president and Treasurer)	_____ women included in the BODs of each mixed Federation/livelihood Collective _____ women hold the key position (President, Vice-president and Treasurer) of each BOD of federations/LCs	By Mid Term	Technical Agency (TA) under guidance of Divisional Project Management Unit (DPMU)
Women Staff in Technical Agencies and UKIHDP	At least 50% of women staff engaged in TAs 30% of women staff engaged in various project units of UGVs	_____ women staff served in TAs during the project period _____ women staff served in DMU & PMU during the project period	Overall analysis at the End Term	Technical Agency (TA) under guidance of Divisional Project Management Unit (DPMU) and Project Management Unit (PMU)
Women Participation in various meetings and other initiatives	At least 50% women participated in all community and project level meetings, conferences, workshops, exposure visits (Except those units where the number of women is less than 50%)	Overall% active women participation in various activities. Overall% women got benefitted through various initiatives taken under the project	By Mid Term & By End Term	Technical Agency (TA) under guidance of Divisional Project Management Unit (DPMU) and Project Management Unit (PMU)
Women coverage in technical and skill training Programmes	At least 60% women out of the total students of vocational Trainings students joined various VT courses. At least 60% women selected for providing vocational Trainings got placement At least 60 % trades and services selected for VT courses are relevant for women	.....% women joined and % successfully completed VTs Women friendly trades delivered in VTP women/girls successfully received placement out of the total women/girls got job / Self-employed	By Mid Term and By End Term	Vocational Training Agencies/Institutes under close coordination with DPMUs & PMU
Participation of women members in Financial Literacy programmes	Financial literacy to 100% women members of PG/VPGs and LCs in a phased manner.	.....women members literate in financial management All members are able to manage their group/federation accounts	By End Term	Technical Agency (TA) under guidance of Divisional Project Management Unit (DPMU)
Participation of women in Leadership programmes	Capacities of 100% office bearers of PGs/VPGs and Board of Director of Livelihood Collectives will be developed	..... capacity building programmes organized on leadership and governance covered ____ (%) of BODs of the Livelihood Collectives	By End Term	Technical Agency (TA), Divisional Project Management Unit (DPMU) and Project Management Unit (PMU)
Participation of women in decision making processes	At least 50% women members actively participate in common decision making process at the level of collectives as well as at the household level.	..... (---%) women taken active role in common decision making process(---%) women are able to influence household decisions related to common family affairs	By End Term	Technical Agency (TA), (DPMU) and Project Management Unit (PMU)
Drudgery reduction plan focused toward women drudgery	At least 20% women beneficiaries should adopt drudgery reduction practices/techniques and tools	..... tools, techniques and practices promoted to reduce women drudgery in the project area% women have adopted these techniques, tools and practices	By End Term	Technical Agency (TA), Divisional Project Management Unit (DPMU) and Project Management Unit (PMU)
Committee to solve sexual Harassment cases	“Internal Committee” as compliance of “Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013 placed in UGVs at Project Management Unit level. % of Sexual Harassment cases redressed	A committee is formed 100% cases of Sexual Harassment redressed	By Mid Term and By End Term	Divisional Project Management Unit (DPMU) and Project Management Unit (PMU)