

Part II: Attachments

Attachment II.2.3.1 Range-wise Permanent Forest Nursery Status in Proposed Project Divisions

Division	Range	No of Ranges in Division	No of Nurseries	Average No of Nursery per Range	Total area of Nurseries (ha)	Average Area Per Nursery (ha)	Seedling Production 2016-17	Seedling Production 2015-16	Average Production Per Year	Average Production Per Nursery
Bilaspur	Total	7	13	1.9	7	0.52	402,000		402,000	30,923
	Sadar		2	2.0	2	0.85	100,000		100,000	50,000
	Swargaht		1	1.0	1	1.00	40,000		40,000	40,000
	Jhandutta		2	2.0	1	0.50	66,000		66,000	33,000
	Kalol		3	3.0	0	0.13	87,000		87,000	29,000
	Ghumarwin		2	2.0	1	0.38	46,000		46,000	23,000
	Bharari		1	1.0	0	0.10	11,000		11,000	11,000
Shree Naina Devi Ji		2	2.0	2	0.88	52,000		52,000	26,000	
Mandi	Total	5	18	3.6	12	0.64	513,218	351,665	432,442	24,025
	Panarsa		3	3.0	2	0.67	187,370	104,520	145,945	48,648
	Kataula		5	5.0	5	0.90	139,880	136,955	138,418	27,684
	Kotli		3	3.0	1	0.33	50,878	36,818	43,848	14,616
	Drang		3	3.0	2	0.50	70,025	34,775	52,400	17,467
	Mandi		4	4.0	3	0.63	65,065	38,597	51,831	12,958
Nachan	Total	4	6	1.5	5	0.78	400,000	400,000	400,000	66,667
	Nachan		2	2.0	1	0.70	170,000	170,000	170,000	85,000
	Pandoh		2	2.0	2	0.75	30,000	30,000	30,000	15,000
	Thachi		-	0.0	-	#DIV/0!	-	-	-	#DIV/0!
Seraj		2	2.0	2	0.90	200,000	200,000	200,000	100,000	
Suket	Total	6	30	5.0	10	0.32	621,192	684,292	652,742	21,758
	Suket		4	4.0	1	0.33	84,817	93,157	88,987	22,247
	Jaidevi		7	7.0	3	0.44	134,495	145,528	140,012	20,002
	Kangoo		5	5.0	1	0.16	113,967	115,057	114,512	22,902
	Jhungi		8	8.0	3	0.34	198,872	229,020	213,946	26,743
	Baldwara		2	2.0	1	0.50	46,741	42,412	44,577	22,288
	Sarkaghat		4	4.0	1	0.19	42,300	59,118	50,709	12,677

Division	Range	No of Ranges in Division	No of Nurseries	Average No of Nursery per Range	Total area of Nurseries (ha)	Average Area Per Nursery (ha)	Seedling Production 2016-17	Seedling Production 2015-16	Average Production Per Year	Average Production Per Nursery
Karsog	Total	4	17	4.3	11	0.63	621,426	543,169	582,298	34,253
	Seri		5	5.0	2	0.47	123,839	178,952	151,396	30,279
	Karsog		4	4.0	2	0.55	135,214	51,425	93,320	23,330
	Pangna		4	4.0	5	1.25	217,873	162,792	190,333	47,583
	Magroo		4	4.0	1	0.30	144,500	150,000	147,250	36,813
Jogindernagar	Total	6	14	2.3	11	0.76	300,000		300,000	21,429
	Dharampur		2	2.0	2	0.75	40,000		40,000	20,000
	Joginder Nagar		2	2.0	2	1.00	80,000		80,000	40,000
	Kamlah		2	2.0	2	0.75	35,000		35,000	17,500
	Ladbhadol		2	2.0	1	0.60	45,000		45,000	22,500
	Tikken		3	3.0	3	0.83	50,000		50,000	16,667
	Urla		3	3.0	2	0.67	50,000		50,000	16,667
Kullu	Total	5	13	2.6	11	0.84	395,412	661,800	528,606	40,662
	Kullu		4	4.0	2	0.56	109,300	162,700	136,000	34,000
	Bhutti		4	4.0	3	0.86	212	29,000	14,606	3,652
	Patlikuhah		3	3.0	3	1.08	200,000	200,000	200,000	66,667
	Naggar		1	1.0	1	1.00	105,900	90,100	98,000	98,000
	Manali		1	1.0	1	1.00	180,000	180,000	180,000	180,000
Parvati	Total	4	9	2.3	10	1.08	900,000	900,000	900,000	100,000
	Bhuntar		2	2.0	3	1.38	300,000	300,000	300,000	150,000
	Hurla		2	2.0	2	0.75	200,000	200,000	200,000	100,000
	Jari		2	2.0	2	1.13	150,000	150,000	150,000	75,000
	Kasol		3	3.0	3	1.08	250,000	250,000	250,000	83,333
Banjar (Seraj)	Total	3	6	2.0	6	1.02	1,421,000	1,528,000	1,474,500	245,750
	Banjar		1	1.0	1	1.30	454,000	363,000	408,500	408,500
	Tirthan		2	2.0	2	0.87	349,000	692,000	520,500	260,250
	Sainj		3	3.0	3	1.03	618,000	473,000	545,500	181,833
Anni	Total	3	20	6.7	9	0.46	546,387	818,805	682,596	34,130
	Chowai		6	6.0	3	0.45	88,855	247,450	168,153	28,025
	Nither		6	6.0	3	0.53	283,160	351,914	317,537	52,923
	Arsu		8	8.0	3	0.41	174,372	219,441	196,907	24,613

Division	Range	No of Ranges in Division	No of Nurseries	Average No of Nursery per Range	Total area of Nurseries (ha)	Average Area Per Nursery (ha)	Seedling Production 2016-17	Seedling Production 2015-16	Average Production Per Year	Average Production Per Nursery
Kinnaur	Total	8	28	3.5	20	0.71	435,000		435,000	15,536
	Bhabhanagar		3	3.0	2	0.75	50,000		50,000	16,667
	Nichar		4	4.0	3	0.75	60,000		60,000	15,000
	Kilba		4	4.0	3	0.75	65,000		65,000	16,250
	Katgaon		1	1.0	1	1.00	30,000		30,000	30,000
	Kalpa		6	6.0	4	0.67	100,000		100,000	16,667
	Moorang		6	6.0	4	0.67	90,000		90,000	15,000
	Pooh		3	3.0	2	0.67	30,000		30,000	10,000
	Malling		1	1.0	1	1.00	10,000		10,000	10,000
Shimla	Total	9	9	1.0	9	0.97	506,518	538,946	522,732	58,081
	Koti		2	2.0	0	0.18	99,648	85,000	92,324	46,162
	Bhajji		2	2.0	4	1.85	110,429	116,547	113,488	56,744
	Dhami		2	2.0	2	0.80	83,975	110,400	97,188	48,594
	Mashobra		1	1.0	2	2.25	154,560	122,675	138,618	138,618
	T/Devi		2	2.0	1	0.40	57,906	104,324	81,115	40,558
Theog	Total	3	7	2.3	5	0.66	342,750	171,375	257,063	36,723
	Theog		4	4.0	3	0.79	266,820	133,030	199,925	49,981
	Balson		2	2.0	1	0.50	63,930	36,700	50,315	25,158
	Kotkhai		1	1.0	1	0.50	12,000	26,270	19,135	19,135
Rohru	Total	7	7	1.0	7	1.00	1,190,000	1,190,000	1,190,000	170,000
	Rohru		1	1.0	1	1.00	150,000	150,000	150,000	150,000
	Bashla		1	1.0	1	1.00	250,000	250,000	250,000	250,000
	Tikkar		1	1.0	1	1.00	100,000	100,000	100,000	100,000
	Jubbal		1	1.0	1	1.00	300,000	300,000	300,000	300,000
	Sawra		1	1.0	1	1.00	200,000	200,000	200,000	200,000
	Khashadhar		1	1.0	1	1.00	90,000	90,000	90,000	90,000
	Dodra Kawar		1	1.0	1	1.00	100,000	100,000	100,000	100,000
Chopal	Total	7	6	0.9	4	0.72	389,033	389,033	389,033	64,839
	Chopal		-	0.0						
	Bamta		1	1.0	0	0.20	52,285	52,285	52,285	52,285
	Tharoach		-	0.0						

Division	Range	No of Ranges in Division	No of Nurseries	Average No of Nursery per Range	Total area of Nurseries (ha)	Average Area Per Nursery (ha)	Seedling Production 2016-17	Seedling Production 2015-16	Average Production Per Year	Average Production Per Nursery
	Sarain		-	0.0						
	Nerwa		1	1.0	1	1.00	214,648	214,648	214,648	214,648
	Deiya		2	2.0	2	0.90	51,000	51,000	51,000	25,500
	Kanda		2	2.0	1	0.65	71,100	71,100	71,100	35,550
Kotgarh	Total	2	7	3.5	4	0.62	368,987	352,623	360,805	51,544
	Kotgarh		3	3.0	1	0.42	148,410	73,285	110,848	36,949
	Kumarsain		4	4.0	3	0.78	220,577	279,338	249,958	62,489
	Total	4	24	6.0	11	0.47	3,447,789	4,174,145	3,810,967	158,790
	Rampur		4	4.0	2	0.60	1,500,000	2,000,000	1,750,000	437,500

Note: NA: Not Available (at the time of preparation of the report)

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

Attachment II.2.3.2 Status of Timber Distribution (Findings from the Livelihood Survey)

Table 1 Number of Households Received Timber under Timber Distribution to Right Holders Rule of the Government in the Last 20 years

(Unit: Households)

District	Division	No of Respondents Interviewed	JFM			Non JFM			Total (b)		Total (%=b-1/a)	
			1 Yes	2 No	Total	1 Yes	2 No	Total	1 Yes	2 No	Total no of Responses	1 Yes
Bilaspur	Bilaspur	60		11	11		3	3	0	14	14	0.0
Chamba	Bharmour	20		1	1	1		1	1	1	2	5.0
	Chamba WL	20			0	2	2	4	2	2	4	10.0
	Pangi	20	3		3		1	1	3	1	4	15.0
Kinnaur	Kinnaur	40	1		1	1		1	2	0	2	5.0
	Sarahan WL	20			0	2		2	2	0	2	10.0
Kullu	Kullu	20			0	2		2	2	0	2	10.0
	Kullu WL	20			0	2	1	3	2	1	3	10.0
Lahaul & Spiti	Spiti(W/L)	20			0	1		1	1	0	1	5.0
Mandi	Karsog	20		1	1	1	2	3	1	3	4	5.0
	Mandi	20		4	4	1	3	4	1	7	8	5.0
Shimla	Kotgarh	20			0			0	0	0	0	0.0
	Rampur	21		1	1	2		2	2	1	3	9.5
	Theog	20	1	2	3	1	1	2	2	3	5	10.0
Total of Territorial		341	5	20	25	16	13	29	21	33	54	6.2
Kangra	Baijnath	3			0	1		1	1	0	1	33.3
Kullu	Kullu	11			0	1	2	3	1	2	3	9.1
Mandi	Mandi	3			0			0	0	0	0	0.0
Kangra	Palampur	1			0			0	0	0	0	0.0
Kullu	Parvati	10			0	2	3	5	2	3	5	20.0
Kinnaur	Kinnaur	21			0	3	2	5	3	2	5	14.3
Shimla	Theog	1			0			0	0	0	0	0.0
Solan	Nalagarh	5			0			0	0	0	0	0.0
Shimla	Kotgarh	2			0			0	0	0	0	0.0
Solan	Baddi	2			0			0	0	0	0	0.0
Total of Graziers/ Grassland Users		59	0	0	0	7	7	14	7	7	14	11.9
Grand Total		400	5	20	25	23	20	43	28	40	68	7.0

Source: Livelihood Survey, JICA Study Team (2017)

Table 2 Year-wise Number of Households Received Timber (Household Construction (Received in Slippers)/ JFM)

District	Division	No of Respondents Interviewed	1996- 2001		2001-2010		2011-2015		2016		2017		Total	
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household
Unit			HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper
Bilaspur	Bilaspur	60												
	Bharmour	20												
	Chamba WL	20												
Chamba	Pangi	20												
	Kinnaur	40												
Kinnaur	Sarahan WL	20												
	Kullu	30												
Kullu	Kullu WL	10												
Lahaul & Spiti	Spiti(W/L)	20												
	Karsog	20												
Mandi	Mandi	20												
	Kotgarh	20												
	Rampur	21												
Shimla	Theog	20												
Total of Territorial			341											
Kangra	Bajjnath	3												
Kullu	Kullu	11												
Mandi	Mandi	3												
Kangra	Palampur	1												
Kullu	Parvati	10												
Kinnaur	Kinnaur	21												
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2												
Total of Graziers/ Grassland Users			59											
Grand Total			400											

* 1 Slipper = 0.025 cubic metre

Source: Livelihood Survey, JICA Study Team (2017)

Table 3 Year-wise Number of Households Received Timber (Household Construction (Received in Slippers)/ Non-JFM)

District	Division	No of Respondents Interviewed	1986		1990		1991 - 1997		1998		1999 - 2001		2002		2003 - 2006		2007		2008 - 2015		2016		2017		Total				
			No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Total Volume	No of HHs	Average Volume per Household	
Unit			HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	
Bilaspur	Bilaspur	60																										0	-
	Bharmour	20											1	12														1	12
	Chamba WL	20																										0	-
Chamba	Pangi	20																										0	-
	Kinnaur	40																										0	-
Kinnaur	Sarahan WL	20																			1	50						1	0
	Kullu	30																										0	-
Kullu	Kullu WL	10																							1	20	1	20	
Lahaul & Spiti	Spiti(W/L)	20																										0	-
	Karsog	20																										0	-
Mandi	Mandi	20																										0	-
	Kotgarh	20																										0	-
	Rampur	21																										0	-
Shimla	Theog	20																										0	-
Total of Territorial		341	0	0	0	0	0	0	0	0	0	0	1	12	0	0	0	0	0	0	1	50	1	20	3	11			
Kangra	Bajjnath	3																										0	-
Kullu	Kullu	11	1	10	1	30			1	12																	3	17	
Mandi	Mandi	3																										0	-
Kangra	Palampur	1																										0	-
Kullu	Parvati	10															1	30									1	30	
Kinnaur	Kinnaur	21																										0	-
Shimla	Theog	1																										0	-
Solan	Nalagarh	5																										0	-
Shimla	Kotgarh	2																										0	-
Solan	Baddi	2																										0	-
Total of Graziers/ Grassland Users		59	1	10	1	30	0	0	1	12	0	0	0	0	0	0	1	30	0	0	0	0	0	0	0	0	4	21	
Grand Total		400	1	10	1	30	0	0	1	12	0	0	1	12	0	0	1	30	0	0	1	50	1	20	7	16			

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 4. Year-wise Number of Households Received Timber (Household Construction (Received in trees)/ JFM)

District	Division	No of Respondents Interviewed	1996		1997-1999		2000		2001 - 2002		2003		2004 - 2017		Total		
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household	
Unit			HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	
Bilaspur	Bilaspur	60														0	-
	Bharmour	20														0	-
	Chamba WL	20														0	-
Chamba	Pangi	20														0	-
	Kinnaur	40					1	1								1	1
Kinnaur	Sarahan WL	20														0	-
	Kullu	30														0	-
Kullu	Kullu WL	10														0	-
Lahaul & Spiti	Spiti(W/L)	20														0	-
	Karsog	20														0	-
Mandi	Mandi	20														0	-
	Kotgarh	20														0	-
	Rampur	21														0	-
Shimla	Theog	20	1	1												1	1
Total of Territorial		341	1	1	0	0	1	1	0	0	0	0	0	0	0	2	1
Kangra	Bajnath	3														0	-
Kullu	Kullu	11														0	-
Mandi	Mandi	3														0	-
Kangra	Palampur	1														0	-
Kullu	Parvati	10														0	-
Kinnaur	Kinnaur	21														0	-
Shimla	Theog	1														0	-
Solan	Nalagarh	5														0	-
Shimla	Kotgarh	2														0	-
Solan	Baddi	2														0	-
Total of Graziers/ Grassland Users		59														0	-
Grand Total		400	1	1	0	0	1	1	0	0	0	0	0	0	0	2	1

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 5 Year-wise Number of Households Received Timber (Household Construction (Received in trees)/ Non-JFM)

District	Division	No of Respondents Interviewed	1996		1997		1999		2000		2001 - 2002		2003		20012-14		2015		2016		2017		Total				
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household	
Unit			HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper			
Bilaspur	Bilaspur	60																						0	-		
	Bharmour	20																							0	-	
	Chamba WL	20			1	1							1	1					2	2					4	1	
Chamba	Pangi	20																							0	-	
	Kinnaur	40					3		1	3															4	1	
Kinnaur	Sarahan WL	20																								0	-
	Kullu	30																								0	-
	Kullu WL	10																								0	-
Lahaul & Spiti	Spiti(W/L)	20																								0	-
	Karsog	20															2	2								2	1
Mandi	Mandi	20																								0	-
	Kotgarh	20																								0	-
	Rampur	21																								0	-
Shimla	Theog	20																								0	-
Total of Territorial		341			1	1	3		1	3			1	1			2	2	1	1					9	1	
Kangra	Bajnath	3																								0	-
Kullu	Kullu	11																								0	-
Mandi	Mandi	3																								0	-
Kangra	Palampur	1																								0	-
Kullu	Parvati	10																								0	-
Kinnaur	Kinnaur	21																								0	-
Shimla	Theog	1																								0	-
Solan	Nalagarh	5																								0	-
Shimla	Kotgarh	2																								0	-
Solan	Baddi	2																								0	-
Total of Graziers/ Grassland Users		59																								0	-
Grand Total		400			1	1							1	1												2	1

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 6 Year-wise Number of Households Received Timber (House Repair (in Slippers)/ JFM)

District	Division	No of Respondents Interviewed	1996		1997 - 2001		2002		2003-2004		2005		2006 - 2009		2010		2011 - 2014		2015		2016		2017		Total			
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household
Unit			HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper		
Bilaspur	Bilaspur	60																									0 -	
	Bharmour	20					1	1													1	1	1	1			3	1
	Chamba WL	20																									0 -	
Chamba	Pangi	20																			4	4					4	1
	Kinnaur	40												1	1				1	1							2	1
Kinnaur	Sarahan WL	20																									0 -	
	Kullu	30																									0 -	
Kullu	Kullu WL	10																									0 -	
Lahaul & Spiti	Spiti(W/L)	20																									0 -	
	Karsog	20																									0 -	
Mandi	Mandi	20																									0 -	
	Kotgarh	20																									0 -	
	Rampur	21																									0 -	
Shimla	Theog	20	1	1							1	1															2	1
Total of Territorial		341																									0 -	
Kangra	Bajinath	3																									0 -	
Kullu	Kullu	11																									0 -	
Mandi	Mandi	3																									0 -	
Kangra	Palampur	1																									0 -	
Kullu	Parvati	10																									0 -	
Kinnaur	Kinnaur	21																									0 -	
Shimla	Theog	1																									0 -	
Solan	Nalagarh	5																									0 -	
Shimla	Kotgarh	2																									0 -	
Solan	Baddi	2																									0 -	
Total of Graziers/ Grassland Users		59																									0 -	
Grand Total		400																									0 -	

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 7 Year-wise Number of Households Received Timber (House Repair (in Slippers)/ Non-JFM)

District	Division	No of Respondents Interviewed	1996		1997		1998-2001		2002		2003-2004		2005		2006 - 2015		2016		2017		Total				
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household	
Unit			HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	
Bilaspur	Bilaspur	60																					0	-	
	Bharmour	20																						0	-
	Chamba WL	20							1	1													1	1	
Chamba	Pangi	20															1	1					1	1	
	Kinnaur	40			1	1			1	1													2	1	
Kinnaur	Sarahan WL	20																					0	-	
	Kullu	30																					0	-	
Kullu	Kullu WL	10																			2	2	2	1	
Lahaul & Spiti	Spiti(W/L)	20											1	1									1	1	
	Karsog	20																					0	-	
Mandi	Mandi	20																					0	-	
	Kotgarh	20																					0	-	
	Rampur	21							1	1													1	1	
Shimla	Theog	20																					0	-	
Total of Territorial		341	0		1	1	0		3	2	0		1		0		1	1	2	2	8	1			
Kangra	Bajjnath	3																					0	-	
Kullu	Kullu	11																					0	-	
Mandi	Mandi	3																					0	-	
Kangra	Palampur	1																					0	-	
Kullu	Parvati	10																					0	-	
Kinnaur	Kinnaur	21																1	1				1	1	
Shimla	Theog	1																					0	-	
Solan	Nalagarh	5																					0	-	
Shimla	Kotgarh	2																					0	-	
Solan	Baddi	2																					0	-	
Total of Graziers/ Grassland Users		59																1	1				1	1	
Grand Total		400	0		1	1	0		3	2	0		1		0		2	2	2	2	9	1			

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 8 Timber Received for Cattle Shed Construction and Repair (Cattle shed construction (Received in Slippers)/ JFM)

District	Division	No of Respondents Interviewed	1996 - 2005		2006		2007 - 2010		2011 - 2017		Total	
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household
Unit			HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper
Bilaspur	Bilaspur	60									0	-
	Bharmour	20									0	-
	Chamba WL	20									0	-
Chamba	Pangi	20									0	-
	Kinnaur	40			1	1					1	1
Kinnaur	Sarahan WL	20									0	-
	Kullu	30									0	-
Kullu	Kullu WL	10									0	-
Lahaul & Spiti	Spiti(W/L)	20									0	-
	Karsog	20									0	-
Mandi	Mandi	20									0	-
	Kotgarh	20									0	-
	Rampur	21									0	-
Shimla	Theog	20									0	-
Total of Territorial		341			1	1					1	1
Kangra	Bajjnath	3									0	-
Kullu	Kullu	11									0	-
Mandi	Mandi	3									0	-
Kangra	Palampur	1									0	-
Kullu	Parvati	10									0	-
Kinnaur	Kinnaur	21									0	-
Shimla	Theog	1									0	-
Solan	Nalagarh	5									0	-
Shimla	Kotgarh	2									0	-
Solan	Baddi	2									0	-
Total of Graziers/ Grassland Users		59									0	-
Grand Total		400			1	1					1	1

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 9 Timber Received for Cattle Shed Construction and Repair (Cattle shed construction (Received in Slippers)/ Non-JFM)

District	Division	No of Respondents Interviewed	1996 - 2004		2005		2006 - 2013		2014		2015 - 2017		Total	
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household
Unit			HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper	HH	Slipper
Bilaspur	Bilaspur	60											0	-
	Bharmour	20											0	-
	Chamba WL	20											0	-
Chamba	Pangi	20											0	-
	Kinnaur	40											0	-
Kinnaur	Sarahan WL	20											0	-
	Kullu	30											0	-
Kullu	Kullu WL	10											0	-
Lahaul & Spiti	Spiti(W/L)	20											0	-
	Karsog	20											0	-
Mandi	Mandi	20						1	1				1	1
	Kotgarh	20											0	-
	Rampur	21											0	-
Shimla	Theog	20											0	-
Total of Territorial		341							1	1			1	1
Kangra	Baijnath	3											0	-
Kullu	Kullu	11											0	-
Mandi	Mandi	3											0	-
Kangra	Palampur	1											0	-
Kullu	Parvati	10											0	-
Kinnaur	Kinnaur	21			1	1							1	1
Shimla	Theog	1											0	-
Solan	Nalagarh	5											0	-
Shimla	Kotgarh	2											0	-
Solan	Baddi	2											0	-
Total of Graziers/ Grassland Users		59											0	-
Grand Total		400			1	1							1	1

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 10 Timber Received for Cattle Shed Construction and Repair (Cattle Shed Repair (Received in Slippers)/ JFM)

District	Division	No of Respondents Interviewed	1996 - 2005		2006 - 2017		Total	
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household
			HH	Slipper	HH	Slipper	HH	Slipper
Bilaspur	Bilaspur	60						
Chamba	Bharmour	20						
	Chamba WL	20						
	Pangi	20						
Kinnaur	Kinnaur	40						
	Sarahan WL	20						
Kullu	Kullu	30						
	Kullu WL	10						
Lahaul & Spiti	Spiti(W/L)	20						
Mandi	Karsog	20						
	Mandi	20						
Shimla	Kotgarh	20						
	Rampur	21						
	Theog	20						
Total of Territorial		341						
Kangra	Bajjnath	3						
Kullu	Kullu	11						
Mandi	Mandi	3						
Kangra	Palampur	1						
Kullu	Parvati	10						
Kinnaur	Kinnaur	21						
Shimla	Theog	1						
Solan	Nalagarh	5						
Shimla	Kotgarh	2						
Solan	Baddi	2						
Total of Graziers/ Grassland Users		59						
Grand Total		400						

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Table 11 Timber Received for Cattle Shed Construction and Repair (Cattle Shed Repair (Received in Slippers)/ Non-JFM)

District	Division	No of Respondents Interviewed	1996 - 2005		2006-2017		Total	
			No of Households	Total Volume	No of Households	Total Volume	No of Households	Average Volume per Household
Unit			HH	Slipper	HH	Slipper	HH	Slipper
Bilaspur	Bilaspur	60						
Chamba	Bharmour	20						
	Chamba WL	20						
	Pangi	20						
Kinnaur	Kinnaur	40						
	Sarahan WL	20						
Kullu	Kullu	30						
	Kullu WL	10						
Lahaul & Spiti	Spiti(W/L)	20						
Mandi	Karsog	20						
	Mandi	20						
Shimla	Kotgarh	20						
	Rampur	21						
	Theog	20						
Total of Territorial		341						
Kangra	Baijnath	3						
Kullu	Kullu	11						
Mandi	Mandi	3						
Kangra	Palampur	1						
Kullu	Parvati	10						
Kinnaur	Kinnaur	21						
Shimla	Theog	1						
Solan	Nalagarh	5						
Shimla	Kotgarh	2						
Solan	Baddi	2						
Total of Graziers/ Grassland Users		59						
Grand Total		400						

* 1 Slipper = 0.025 m³

Source: Livelihood Survey, JICA Study Team (2017)

Attachment II.2.4.1 Current Status of Protected Areas of Project Districts Proposed by HPFD

	Wildlife Division	Shimla			Sarahan				Spiti		
PA Status	Name of Protected Area	SWC Dhalli	SWC Chail	Tharoch	Dharanghati	Lippa Asrang	Rakchham Chhitkul	Rupi Bhaba	Chandertal	Kibber	Pin Valley NP
	Year of Notification	2013	2013	2013	2013	2013	2013	2013	2013	1999 & 2013	1987
	Notified Area (sq. Km)	10.2	16.0	46.4	171.5	31	304	503	38.6	2,267	675 (Core), 1,150 (Buffer)
	Boundary Settlement Process Completed?	yes	yes	yes	yes	yes	yes	yes	No, it is in process.	No, it is in process.	No, it is in process.
	Number of Divisions Covered	1	1	1	1	1	1	1	1	1	1
	Management Plan Prepared?	yes	yes	yes	yes	yes	yes	yes	Being Prepared & in Process	Being Prepared	Being Prepared & in Process
	Period of Management Plan	2022-23	2022-23	2013-14 to 2023-24	1991-2002 (Under preparations for next years)	1990 to 2001-02 (Under preparations for next years)	2011 to 2021-22	2010-2015	2017-2026	2017-2021	2017-2026
Demographic Details	No. of Villages within PA	0	0	0	0	0	0	0	0		4 (Summer settlements for Thango, Rajgaon, Gechang, kocho)
	No. of Villages within periphery of 3km from PA boundary	20	20	15	37	2	7	20	2 (Lossar & Chichong)	5	3 (Sagnam, Kaa, Mudh)
	No. of Villages proposed for relocation from PA	0	0	0	0	0	0	0	0		4 (Thango, Rajgaon, Gechang, kocho)
	No. of Villages/Families already relocated from PA	0	0	0	0	0	0	0	0	0	0
	No. of EDC within PA				0	0	0	0	0	0	0
	No. of functional EDCs as of August 2017				0	0	0	0	0	0	0
	No. of Biodiversity Conservation Committee within PA	0	0	0	0	0	0	0	0	0	0

Wildlife Division		Shimla			Sarahan				Spiti		
No. of JFMC/VFDS/other participatory forest management organizations within PA	0	0	0	0	0	0	0	0	0	0	0
No. of JFMC/VFDS/other participatory forest management organizations functional as of August 2017	0	0	0	0	0	0	0	0	0	0	0
No. of Functional JFMC/VFDS (FY2016-17)	0	0	0	0	0	0	0	0	0	0	0
Names of Ranges externally funded project are currently implemented	0	0	0	0	0	0	0	0	0	0	0
Annual Plan of Operations Details	Total Proposed Cost of APOs	2014-15			8,985,850	9,480,256	11,790,188	14,970,855			
		2015-16			11,012,000	7,772,940	13,279,960	25,784,710			
		2016-17			21,533,074	9,522,715	8,530,204	34,696,268			
	Total Sanctioned Amount	2014-15			6,674,100	8,719,300	11,315,300	14,797,600			
		2015-16			13,082,250	7,084,200	3,269,700	25,503,900			
		2016-17			21,314,200	7,873,600	6,149,900	16,489,400			
	Total Amount Received	2014-15			5,034,500	5,749,800	11,062,300	13,158,800			
		2015-16			13,007,600	7,084,200	3,738,700	24,608,900			
		2016-17			16,516,900	7,037,600	5,194,600	15,923,800			
	Amount Received from other Projects/Programs from Central Funds	2014-15			-	-	-	-	506,000	5,000,000	903,000
		2015-16			-	-	-	-	836,000	4,800,000	2,175,000
		2016-17			-	-	-	-	760,000	921,000	1,070,000
	Amount Received from other Projects/Programs from State Funds	2014-15			-	-	-	-	-	-	-
		2015-16			-	-	-	-		158,000 (State Share in CSS)	241,000 (State Share in CSS)
		2016-17			-	-	-	-		112,000 (State Share in CSS)	119,000 (State Share in CSS)
		2014-15			-	-	-	-		500,000 (Tribal Sub Plan)	300,000 (Tribal Sub Plan)
	2015-16			-	-	-	-		800,000 (Tribal Sub Plan)	300,000 (Tribal Sub Plan)	
	2016-17			-	-	-	-		1,350,000 (Tribal Sub Plan)	-	

	Wildlife Division		Shimla			Sarahan				Spiti		
											Plan)	
Amount Received from other Projects/Programs from Donors	2014-15					-	-	-	-			
	2015-16					-	-	-	-			
	2016-17					-	-	-	-			
Biodiversity/Wildlife Conservation Related Facilities Present in the PA/Division	Reception Area	No	No	No	No	No	No	No	No	No	No	No
	Interpretation Centre	No	No	No	No (Proposed to be constructed in Sarahan Pheasantry during 2017-18)	No (Proposed to be constructed in Sarahan Pheasantry during 2017-19)	No (Proposed to be constructed in Sarahan Pheasantry during 2017-18)	No (Proposed to be constructed in Sarahan Pheasantry during 2017-18)	No	1	No	No
	Wildlife Rescue Centre	No	No	No	No	No	No	No	No	No	No	No
	Veterinary Care Centre	No	No	No	Sarahan Pheasantry	Sarahan Pheasantry	Sarahan Pheasantry	Sarahan Pheasantry	No	No	No	No
	Tranquilization equipment	No	No	2 (22 Rifle)	Division	Division	Division	Division	Only one Tranquilize gun in Division Office	No	Only one Tranquilize gun in Division Office	No
	Wildlife Rescue Vehicle	No	No	No	No	No	No	No	No	No	No	No
	Forensic Lab	No	No	No	No	No	No	No	No	No	No	No
	Museum/Zoo	No	No	No	No	No	No	No	No	No	No	No
	Herbarium	No	No	No	No	No	No	No	No	No	No	No
	Camera Traps	4	4	4	28 (WLS), 24 (Division)	2 (WLS), 24 (Division)	7 (WLS), 24 (Division)	16 (WLS), 24 (Division)	Yes	Yes	Yes	Yes
	Audio-Visual Equipment	No	No	No	17 (WLS), 8 (Division)	8 (WLS), 8 (Division)	10 (WLS), 8 (Division)	12 (WLS), 8 (Division)	No	No	No	No
	GPS	2	2	1	9 (WLS), 13 (Division)	1 (WLS), 13 (Division)	5 (WLS), 13 (Division)	10 (WLS), 13 (Division)	Yes	Yes	Yes	Yes
	4WD Vehicle	0	0	0	1 (Division)	1 (Division)	1 (Division)	1 (Division)	1 (One Gypsy in Division)	1 (One Gypsy in Division)	1 (One Gypsy in Division)	1 (One Gypsy in Division)
	Motor bike	1	1	0	3 (Division) For Wildlife Ranges Sangla, Rupi and Dofda	3 (Division) For Wildlife Ranges Sangla, Rupi and Dofda	3 (Division) For Wildlife Ranges Sangla, Rupi and Dofda	3 (Division) For Wildlife Ranges Sangla, Rupi and Dofda	No	No	No	No
Bicycle	33	33	0	No	No	No	No	No	No	No	No	

	Wildlife Division		Shimla			Sarahan				Spiti		
	Horse / Donkey		0	0	0	No	No	No	No	No	No	No
Status of PA (Please describe)	Conservation Significance / Value											
	Human-Wildlife Conflict	Issues (Including concerned species)	0	0	0	Sporadic, Black bear, Snake	Sporadic, Black bear, Snake	Sporadic, Black bear, Snake	Sporadic, Black bear, Snake	Ibex damages agriculture crops of adjoining villages, crop raiding. Snow leopard sometimes prey on domestic animals	Blue sheep & ibex damage agriculture crops of adjoining villages, crop raiding. Snow leopard sometimes prey on domestic animals	Blue sheep & ibex damage agriculture crops of adjoining villages, crop raiding. Snow leopard sometimes prey on domestic animals
		Existing Mitigation Measures	0	0	0					Watch & Ward of agriculture fields, fencing & cattle sheds. Awareness among local people	Watch & Ward of agriculture fields, fencing & cattle sheds. Awareness among local people	Watch & Ward of agriculture fields, fencing & cattle sheds. Awareness among local people
	Endangered Fauna & Flora	Issues (Including concerned species)	0	0	0	Tragopan, Musk Deer, Serow	Tragopan, Musk Deer, Serow	Tragopan, Musk Deer, Serow	Tragopan, Musk Deer, Serow	Medicinal plants exploitation, pastures land competition between domestic animals & wildlife, prey spp of snow leopard. Spread of communicable diseases	Medicinal plants exploitation, pastures land competition between domestic animals & wildlife, prey spp of snow leopard. Spread of communicable diseases	Medicinal plants exploitation, pastures land competition between domestic animals & wildlife, prey spp of snow leopard. Spread of communicable diseases
		Existing Protection, Conservation Habitat Improvement Measures	0	0	0	Tragopan Conservation breeding Programme, Development of anti-poachers,	Tragopan Conservation breeding Programme, Development of anti-	Tragopan Conservation breeding Programme, Development of anti-	Tragopan Conservation breeding Programme, Development of anti-	Protection by staff, educating the local population. Pasture	Protection by staff, educating the local population. Pasture	Protection by staff, educating the local population. Pasture

Wildlife Division		Shimla			Sarahan				Spiti			
					Provision of watch –towers and law training for staff.	poachers, Provision of watch –towers and law training for staff.	poachers, Provision of watch –towers and law training for staff.	poachers, Provision of watch –towers and law training for staff.	improvement, moisture improvement, awareness & vaccination with the help of line department.	improvement, moisture improvement, awareness & vaccination with the help of line department.	improvement, moisture improvement, awareness & vaccination with the help of line department.	
	Habitation and Usage of PA by People (Status and Issues)	0	0	0	Debarred, accordingly to notification issued during 2013	Debarred, accordingly to notification issued during 2013	Debarred, accordingly to notification issued during 2013	Debarred, accordingly to notification issued during 2013	In fringe areas for pasture, medicinal plant collection. migratory graziers.	In fringe areas for pasture, medicinal plant collection. migratory graziers.	In fringe areas for pasture, medicinal plant collection. migratory graziers.	
	Eco-development work (Status and Issues)	0	0	0	Nil	Nil	Nil	Nil	Bunkers, tracking & traditional routes	Bunkers, tracking & traditional routes	Bunkers, tracking & traditional routes	
	Eco-tourism (Status and Issues)	0	0	0	Eco – tourism Society of circle level is under formation	Eco – tourism Society of circle level is under formation	Eco – tourism Society of circle level is under formation	Eco – tourism Society of circle level is under formation	Tracking routes to Baralachha & Leh.	Tracking routes to Pin Parwati & Mudh Bhawa, camping & tenting in summer months.	Tracking routes to Pin Parwati & Mudh Bhawa, camping & tenting in summer months.	
	Other Status and Issues related to PA Management	0	0	0	Eco – Sensitive Zones under formation	Eco – Sensitive Zones under formation	Eco – Sensitive Zones under formation	Eco – Sensitive Zones under formation				
	FRA Application submitted (by August 2017)	0	0	0	0	0	0	0	In process	In process	In process	
	FRA Rights Granted (by August 2017)	0	0	0	0	0	0	0	In process	In process	In process	
Wildlife Census (Number of animals Recorded)	Monal	2011			-	-	-	-				
		2012			-	-	-	-				
		2013				-	-	-	-			
		2014				-	-	-	-			
		2015				13	-	34	98			
	Tragopan	2011				-	-	-	-			
2012					-	-	-	-				

Wildlife Division		Shimla			Sarahan				Spiti		
	2013				-	-	-	-			
	2014				-	-	-	-			
	2015				6	-	-	6			
Koklas	2011	0			-	-	-	-			
	2012	27 pair			-	-	-	-			
	2013	37 pair			-	-	-	-			
	2014	24 pair			-	-	-	-			
	2015	42			18	-	24	56			
Kalij	2011				-	-	-	-			
	2012				-	-	-	-			
	2013				-	-	-	-			
	2014				-	-	-	-			
	2015				117	-	48	85			
Chakor	2011				-	-	-	-			
	2012				-	-	-	-			
	2013				-	-	-	-			
	2014				-	-	-	-			
	2015				9	15	2	10			
Black bear	2011				-	-	-	-			
	2012				-	-	-	-			
	2013				-	-	-	-			
	2014				-	-	-	-			
	2015				1	2	4	6			
Ghoral	2011				-	-	-	-			
	2012				-	-	-	-			
	2013				-	-	-	-			
	2014				-	-	-	-			
	2015				7	-	3	12			
Ibex	2011				-	-	-	-			68
	2012				-	-	-	-			79
	2013				-	-	-	-	27		122
	2014				-	-	-	-	24	73	79
	2015				-	13	48	-		85	102
Snowcock	2011				-	-	-	-			
	2012				-	-	-	-			
	2013				-	-	-	-			
	2014				-	-	-	-			
	2015				-	-	18	-			
Leopard	2011				-	-	-	-			

Wildlife Division		Shimla			Sarahaan				Spiti		
	2012				-	-	-	-			
	2013				-	-	-	-			
	2014				-	-	-	-			
	2015				-	6	12	4			
Brown bear	2011				-	-	-	-			
	2012				-	-	-	-			
	2013				-	-	-	-			2
	2014				-	-	-	-			
	2015				-	1	1	-			
Monkey	2011		0	0							
	2012	453	1590	168							
	2013	0	0	0							
	2014	0	0	0							
	2015	0	0	0							
Red fox	2011										109
	2012										133
	2013								18		88
	2014								12	21	133
	2015									9	68
Golden eagle	2011										10
	2012										6
	2013								6		14
	2014								6	6	6
	2015									11	11
Snow leopard	2011										
	2012										Indirect evidences camera trap images
	2013										Indirect evidences camera trap images
	2014										Indirect evidences camera trap images
	2015										Indirect evidences camera trap images

	Wildlife Division		Shimla			Sarahan				Spiti				
										images	images			
	Marmot	2011												
		2012												
		2013									10			
		2014									10	-		
		2015										15		
	Pika	2011												
		2012												
		2013												
		2014									21			
		2015									11	23		
	Blue sheep	2011												
		2012												
		2013												
		2014											105	
		2015											107	
Ruddy Shelduck	2011													
	2012													
	2013													
	2014									12				
	2015													
Stilt	2011													
	2012													
	2013													
	2014													
	2015									10				
Tourists/Visitor	Indian	2014-15	2687	0	0	-	-	-	-		will be provided later	Data not available		
		2015-16	4015	0	0	-	-	-	-					
		2016-17	3025	0	0	-	-	-	-					
	Foreigner	2014-15	19	0	0	-	-	-	-		will be provided later			
		2015-16	64	0	0	-	-	-	-					
	2016-17	55	0	0	-	-	-	-						
Nature Camps	Number of Nature Camps Organized	2014-15	0	0	0	2	-	-	-	3	3	3	3	
		2015-16	0	0	0	5	1	1	3	3	3	3	3	
		2016-17	0	0	0	2	1	3	4	3	3	3	3	
	Total Number of Participants	2014-15	0	0	0	132	-	-	-					
		2015-16	0	0	0	610	267	267	207					

	Wildlife Division		Shimla			Sarahaan				Spiti		
		2016-17	0	0	0	215	250	425	470			
Eco-clubs	Number of Eco-clubs exist	Number				-	-	-	-	Senior Secondary School Lossar	Senior Secondary School Kibber	Senior Secondary School Sagnam
		Nature of Participation				-	-	-	-	Wild Life Week & other awareness programme		Wild Life Week & other awareness programme
	Number of NGOs Working on issues related with Biodiversity/Environment in and around Sanctuary	Number	0	0	0	-	-	-	-	One GP of Lossar	Kibber GP	Two Gps Kungri & Sagnam
		Nature of Participation	0	0	0	-	-	-	-	Wild Life Week & other awareness programme		Wild Life Week & other awareness programme
WL Crimes (number of Registered Cases)	Timber poaching	2014-15	0	0	0	5						
		2015-16	0	0	0	3						
		2016-17	0	0	0	2						
	Wildlife Poaching/hunting	2014-15	0	0	0	-						
		2015-16	0	0	0	-						
		2016-17	0	0	0	-						
	Illegal Encroachments	2014-15	0	0	0	-						
		2015-16	0	0	0	-						
		2016-17	0	0	0	-						
	Illegal Mining of minerals and sand	2014-15	0	0	0	-						
		2015-16	0	0	0	4						
		2016-17	0	0	0	-						
Other (Specify)	2014-15	0			-	-	-	-				
	2015-16	0			-	-	-	-				
	2016-17	0			-	-	-	-				
Other Programs/Project (List Convergence from	Name of Program	0	0	0	-	-	-	-		CSS		CSS
	Department	0	0	0	-	-	-	-		Animal Husbandry		Animal Husbandry
	Type of Convergence Done	0	0	0	-	-	-	-		Vaccination of Domestic Cattles		Vaccination of Domestic Cattles
	Remarks	0	0	0	-	-	-	-				
	Name of Program	0	0	0	-	-	-	-		CSS		CSS

	Wildlife Division	Shimla			Sarahan				Spiti		
	Department	0	0	0	-	-	-	-	Horticulture		Horticulture
	Type of Convergence Done	0	0	0	-	-	-	-	Distribution of Fruit Seedlings		Distribution of Fruit Seedlings
	Remarks	0	0	0	-	-	-	-			
	Name of Program	0	0	0	-	-	-	-	CSS		CSS
	Department	0	0	0	-	-	-	-	Agriculture		Agriculture
	Type of Convergence Done	0	0	0	-	-	-	-	Distribution of Seeds		Distribution of Seeds
	Remarks	0	0	0	-	-	-	-			

Source: JICA Study Team (2017) Questionnaire Survey Findings

Attachment II.2.4.2 The New List of the Threatened Plant and Animal Species of HP

Table 1 The List of the Threatened Plant Species of the State

No.	Scientific Name	Common Name	Family
1	<i>Aconitum deinorrhizum</i> Stapf	Mohra	Ranunculaceae
2	<i>Aconitum heterophyllum</i> Wall	Atis	Ranunculaceae
3	<i>Arnebia benthamii</i> (Wall. Ex G.Don) I. M. Johnst.	Ratanjot	Boraginaceae
4	<i>Atropa acuminata</i> Royle ex. Lindl.	Jharka	Solanaceae
5	<i>Berberis aristata</i> DC.	Kashamal	Berberidaceae
6	<i>Betula alnoides</i> Buch.-Ham. Ex D.Don	Himalayan birch	Betulaceae
7	<i>Dactylorhiza hatagirea</i> D. Don	Salam panja	Orchidaceae
8	<i>Eremostachys superba</i> Royle ex Benth	Gajar Mula	Lmiaceae
9	<i>Fritillaria roylei</i> Hook.	Kakoli/Jangli lasen	Liliaceae
10	<i>Gentiana kurroo</i> Royle	Kutki	Gentianaceae
11	<i>Habenaria edgeworthii</i> Hook. F. ex Collett	Jeevak	Orchidaceae
12	<i>Jasminum parkeri</i> Dunn	Dwarf Jasmine	Oleaceae
13	<i>Lilium polyphyllum</i> D. Don	Ksheer kakoli	Liliaceae
14	<i>Malaxis muscifera</i> (Lindl.) Kuntze	Ridhi	Orchidaceae
15	<i>Nardostachys grandiflora</i> DC	Jatamansi	Boraginaceae
16	<i>Paris polyphylla</i> Sm.	Dudhia bach	Liliaceae
17	<i>Sinopodophyllum hexandrum</i> (Royle) T. S. Ying	Bankakri	Berberidaceae
18	<i>Skimmia laureola</i> (DC.) Siebold & Zucc. ex Walp.	Ner dhoop	Rutaceae
19	<i>Staphylea emodi</i> Wall. ex Brandis	Himalayan bladdernut/ Nag Danu	Staphyleaceae
20	<i>Swertia chirayita</i> (Roxb. ex Fleming) Karsten	Chiretta/Chirayata	Gentianaceae
21	<i>Taxus wallichiana</i> Zucc (Synonym) <i>Taxus contorta</i> Griff.	Rakhal/Birmi	Taxaceae
22	<i>Trillium govanianum</i> Wall. ex D. Don	Himalayan trillium/ Nag chhatri	Melanthiaceae

Table 2 The List of the Threatened Animal Species of the State

No.	Scientific Name	Common Name	Family
1	<i>Aquila nipalensis</i> Hodgson	Steppe eagle	Accipitridae
2	<i>Canis lupus chanco</i> Gray	Tibetan wolf	Canidae
3	<i>Capricornis thar</i> Hodgson	Himalayan serow	Bovidae
4	<i>Catreus wallichii</i> Hardwicke	Cheer pheasant	Phasianidae
5	<i>Gypaetus barbatus</i> Linnaeus	Bearded vulture	Accipitridae
6	<i>Gyps bengalensis</i> Gmelin	White-rumped vulture	Accipitridae
7	<i>Gyps tenuirostris</i> Gray	Slender billed vulture	Accipitridae
8	<i>Hemitragus jemlahicus</i> C. H. Smith	Himalayan tahr	Bovidae
9	<i>Moschus chrysogaster</i> Hodgson	Himalayan musk deer	Moschidae
10	<i>Parnassius charltonius</i> Gray	Regal apollo	Papilionidae
11	<i>Parnassius stoliczkanus</i> Felder & Felder	Ladakh banded apollo	Papilionidae
12	<i>Pucrasia macrolopha</i> Lesson	Koklass pheasant	Phasianidae
13	<i>Sarcogyps calvus</i> Scopoli	Red-headed vulture	Accipitridae
14	<i>Tragopan melanocephalus</i> Gray	Western tragopan/ jujurana	Phasianidae
15	<i>Tor putitora</i> Hamilton	Golden Mahseer	Cyprinidae
16	<i>Uncia uncia</i> Schreber	Snow leopard	Felidae

Attachment II.2.4.3 Status of Human Wildlife Conflict (Findings from the Livelihood Survey)

Table 1 Family Members Affected by Wildlife

District	Division	No of Respondents Interviewed	JFM					Non JFM					Total				
			1 Male Adult	2 Female Adult	3 Mald Child	4 Female Child	Total	1 Male Adult	2 Female Adult	3 Mald Child	4 Female Child	Total	1 Male Adult	2 Female Adult	3 Mald Child	4 Female Child	Total
Bilaspur	Bilaspur	60					0					0	0	0	0	0	
	Bharmour	20					0					0	0	0	0		
	Chamba WL	20					0					0	0	0	0		
Chamba	Pangi	20					0					0	0	0	0		
	Kinnaur	40				1	1					0	0	0	0	1	
Kinnaur	Sarahan WL	20					0					0	0	0	0		
	Kullu	20					0					0	0	0	0		
Kullu	Kullu WL	20					0					0	0	0	0		
Lahaul & Spiti	Spiti(W/L)	20					0					0	0	0	0		
	Karsog	20		2			2					0	0	2	0	2	
Mandi	Mandi	20					0					0	0	0	0	0	
	Kotgarh	20					0					0	0	0	0	0	
	Rampur	21					0					0	0	0	0	0	
Shimla	Theog	20					0					0	0	0	0	0	
Total of Territorial		341	0	2	0	1	3	0	0	0	0	0	0	2	0	3	
Kangra	Bajjnath	3					0					0	0	0	0	0	
Kullu	Kullu	11					0					0	0	0	0	0	
Mandi	Mandi	3					0		1			1	0	1	0	1	
Kangra	Palampur	1					0					0	0	0	0	0	
Kullu	Parvati	10					0					0	0	0	0	0	
Kinnaur	Kinnaur	21					0					0	0	0	0	0	
Shimla	Theog	1					0					0	0	0	0	0	
Solan	Nalagarh	5					0					0	0	0	0	0	
Shimla	Kotgarh	2					0					0	0	0	0	0	
Solan	Baddi	2					0					0	0	0	0	0	
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	1	0	0	1	0	1	0	1	
Grand Total		400	0	2	0	1	3	0	1	0	0	1	0	3	0	4	

Source: Livelihood Survey, JICA Study Team (2017)

Table 2 Incidences of Damages Caused by Wildlife (Crop Damage)

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total				% to the Total of Counts			
			1 Monkey	2 Wildboar	3 Sambal	Total	1 Monkey	2 Wildboar	3 Sambal	Total	1 Monkey	2 Wildboar	3 Sambal	Total	1 Monkey	2 Wildboar	3 Sambal	Total
Bilaspur	Bilaspur	60	14	28	8	50	16	19	16	51	30	47	24	101	29.7	46.5	23.8	100.0
	Bharmour	20	10			10	9			9	19	0	0	19	100.0	0.0	0.0	100.0
	Chamba WL	20				0	14			14	14	0	0	14	100.0	0.0	0.0	100.0
Chamba	Pangi	20	10			10	10			10	20	0	0	20	100.0	0.0	0.0	100.0
	Kinnaur	40	15			15	20			20	35	0	0	35	100.0	0.0	0.0	100.0
Kinnaur	Sarahan WL	20				0	19		1	20	19	0	1	20	95.0	0.0	5.0	100.0
	Kullu	20	10			10	2			2	12	0	0	12	100.0	0.0	0.0	100.0
Kullu	Kullu WL	20				0	18			18	18	0	0	18	100.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti (W/L)	20				0				0	0	0	0	0	-	-	-	0.0
	Karsog	20	8			8	10	5		15	18	5	0	23	78.3	21.7	0.0	100.0
Mandi	Mandi	20	6	6		12	6	4		10	12	0	0	22	54.5	45.5	0.0	100.0
	Kotgarh	20	8			8	8			8	16	0	0	16	100.0	0.0	0.0	100.0
	Rampur	21	10			10	10			10	20	0	0	20	100.0	0.0	0.0	100.0
Shimla	Theog	20	7			7	9			9	16	0	0	16	100.0	0.0	0.0	100.0
Total of Territorial		341	98	34	8	140	151	28	17	196	249	62	25	336	74.1	18.5	7.4	100.0
Kangra	Bajjnath	3				0				0	0	0	0	0	-	-	-	0.0
Kullu	Kullu	11				0	3			3	0	0	0	3	100.0	0.0	0.0	100.0
Mandi	Mandi	3				0	2	1	1	4	2	1	1	4	50.0	25.0	25.0	100.0
Kangra	Palampur	1				0	1			1	1	0	0	1	100.0	0.0	0.0	100.0
Kullu	Parvati	10				0	5	1		6	5	1	0	6	83.3	16.7	0.0	100.0
Kinnaur	Kinnaur	21				0	12		1	13	12	0	1	13	92.3	0.0	7.7	100.0
Shimla	Theog	1				0				0	0	0	0	0	-	-	-	0.0
Solan	Nalagarh	5				0				0	0	0	0	0	-	-	-	0.0
Shimla	Kotgarh	2				0				0	0	0	0	0	-	-	-	0.0
Solan	Baddi	2				0				0	0	0	0	0	-	-	-	0.0
Total of Graziers/ Grassland Users		59	0	0	0	0	23	2	2	27	23	2	2	27	85.2	7.4	7.4	100.0
Grand Total		400	98	34	8	140	174	30	19	223	272	64	27	363	74.9	17.6	7.4	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Table 3 Other Wildlife Causing Crop Damage (1)

District	Division	No of Respondents Interviewed	JFM									Non JFM									
			Bear	Fox	Langur	Sparrow	Leopard	Parrot	Porcupine	Rabbit	Total	Bear	Fox	Langur	Sparrow	Leopard	Parrot	Porcupine	Rabbit	Total	
Bilaspur	Bilaspur	60									0										0
	Bharmour	20	9		1					6	16										0
	Chamba WL	20									0	13		7							20
Chamba	Pangi	20	7	1	1						9										0
	Kinnaur	40	11			2	2			1	16										0
Kinnaur	Sarahan WL	20									0	1	3	1	2	1			1		9
	Kullu	20	9				4	1	1	1	16										0
Kullu	Kullu WL	20									0	3	4						1		8
Lahaul & Spiti	Spiti(W/L)	20									0			1						1	2
	Karsog	20									1										0
Mandi	Mandi	20									0										0
	Kotgarh	20	2							2	5										0
	Rampur	21	9	1						1	11										0
Shimla	Theog	20		1					1	2	6										0
Total of Territorial		341	47	3	2	6	3	4	12	7	84	17	7	8	3	1	0	2	1	39	
Kangra	Bajinath	3									0										0
Kullu	Kullu	11									0										0
Mandi	Mandi	3									0										0
Kangra	Palampur	1									0										0
Kullu	Parvati	10									0										0
Kinnaur	Kinnaur	21									0	3									3
Shimla	Theog	1									0										0
Solan	Nalagarh	5									0										0
Shimla	Kotgarh	2									0										0
Solan	Baddi	2									0										0
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Grand Total		400	47	3	2	6	3	4	12	7	84	20	7	8	3	1	0	2	1	42	

Source: Livelihood Survey, JICA Study Team (2017)

Table 4. Other Wildlife Causing Crop Damage (2)

District	Division	No of Respondents Interviewed	Total										% To the Total of Counts										
			Bear	Fox	Langur	Sparrow	Leopard	Parrot	Porcupine	Rabbit	Total	Bear	Fox	Langur	Sparrow	Leopard	Parrot	Porcupine	Rabbit	Total			
Bilaspur	Bilaspur	60	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	0
Chamba	Bharmour	20	9	0	1	0	0	0	0	6	0	16	56.3	0.0	6.3	0.0	0.0	0.0	0.0	37.5	0.0	100.0	0
	Chamba WL	20	13	0	7	0	0	0	0	0	20	65.0	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0
	Pangi	20	7	1	1	0	0	0	0	0	9	77.8	11.1	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0
Kinnaur	Kinnaur	40	11	0	0	2	2	0	1	0	16	68.8	0.0	0.0	12.5	12.5	0.0	6.3	0.0	6.3	0.0	100.0	0
	Sarahan WL	20	1	3	1	2	1	0	1	0	9	11.1	33.3	11.1	22.2	11.1	0.0	11.1	0.0	11.1	0.0	100.0	0
Kullu	Kullu	20	9	0	0	4	1	1	1	0	16	56.3	0.0	0.0	25.0	6.3	6.3	6.3	6.3	0.0	100.0	0	0
	Kullu WL	20	3	4	0	0	0	0	1	0	8	37.5	50.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	100.0	0
Lahaul & Spiti	Spiti(W/L)	20	0	0	0	1	0	0	0	1	2	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	0.0	100.0	0
Mandi	Karsog	20	0	0	0	0	0	0	0	1	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0
	Mandi	20	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0.0	0
	Kotgarh	20	2	0	0	0	0	2	1	0	5	40.0	0.0	0.0	0.0	0.0	40.0	20.0	0.0	0.0	100.0	0	0
Shimla	Rampur	21	9	1	0	0	0	0	1	0	11	81.8	9.1	0.0	0.0	0.0	0.0	9.1	0.0	0.0	0.0	100.0	0
	Theog	20	0	1	0	0	0	1	2	6	10	0.0	10.0	0.0	0.0	0.0	10.0	20.0	60.0	0.0	100.0	0	
Total of Territorial		341	64	10	10	9	4	4	14	8	123	52.0	8.1	8.1	7.3	3.3	3.3	11.4	6.5	100.0	0	0	
Kangra	Bajnath	3	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Kullu	Kullu	11	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Mandi	Mandi	3	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Kullu	Parvati	10	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Kinnaur	Kinnaur	21	3	0	0	0	0	0	0	0	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Solan	Nalagarh	5	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0	0
Total of Graziers/ Grassland Users		59	3	0	0	0	0	0	0	0	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Grand Total		400	67	10	10	9	4	4	14	8	126	53.2	7.9	7.9	7.1	3.2	3.2	11.1	6.3	100.0	0	0	

Source: Livelihood Survey, JICA Study Team (2017)

Table 5 Damage to House and Other Properties by Major Wildlife

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total				% to the Total of Counts			
			1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
			Monkey	Wildboar	Sambal		Monkey	Wildboar	Sambal		Monkey	Wildboar	Sambal		Monkey	Wildboar	Sambal	
Bilaspur	Bilaspur	60				0				0				0				0
	Bharmour	20				0				0				0				0
	Chamba WL	20				0				0				0				0
Chamba	Pangi	20				0				0				0				0
	Kinnaur	40				0				0				0				0
Kinnaur	Sarahan WL	20				0				0				0				0
	Kullu	20				0				0				0				0
Kullu	Kullu WL	20				0				0				0				0
Lahaul & Spiti	Spiti(W/L)	20				0				0				0				0
	Karsog	20				0				0				0				0
Mandi	Mandi	20				0				0				0				0
	Kotgarh	20				0				0				0				0
	Rampur	21				0				0				0				0
Shimla	Theog	20				0				0				0				0
Total of Territorial		341	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kangra	Bajjnath	3				0				0				0				0
Kullu	Kullu	11				0				0				0				0
Mandi	Mandi	3				0				0				0				0
Kangra	Palampur	1				0				0				0				0
Kullu	Parvati	10				0				0				0				0
Kinnaur	Kinnaur	21				0				0				0				0
Shimla	Theog	1				0				0				0				0
Solan	Nalagarh	5				0				0				0				0
Shimla	Kotgarh	2				0				0				0				0
Solan	Baddi	2				0				0				0				0
Total of Graziers/ Grassland Users		59	0	0	0	0	0	1	0	1	0	1	0	1	0.0	100.0	0.0	100.0
Grand Total		400	0	0	0	0	0	1	0	1	0	1	0	1	0.0	100.0	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Table 6 Other Wildlife Causing Property Damage

District	Division	No of Respondents Interviewed	JFM			Non JFM			Total			% to the Total of Counts		
			Parrot	Rat	Total	Parrot	Rat	Total	Parrot	Rat	Total	Parrot	Rat	Total
Bilaspur	Bilaspur	60			0			0	0	0	0	-	-	0.0
	Bharmour	20			0			0	0	0	0	-	-	0.0
	Chamba WL	20			0			0	0	0	0	-	-	0.0
Chamba	Pangi	20			0			0	0	0	0	-	-	0.0
	Kinnaur	40			0			0	0	0	0	-	-	0.0
Kinnaur	Sarahan WL	20			0			0	0	0	0	-	-	0.0
	Kullu	20			0			0	0	0	0	-	-	0.0
Kullu	Kullu WL	20			0			0	0	0	0	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20			0			0	0	0	0	-	-	0.0
	Karsog	20			0			0	0	0	0	-	-	0.0
Mandi	Mandi	20			0			0	0	0	0	-	-	0.0
	Kotgarh	20			0	1		1	1	0	1	100.0	0.0	100.0
	Rampur	21			0	3	3	3	0	3	3	0.0	100.0	100.0
Shimla	Theog	20			0			0	0	0	0	-	-	0.0
Total of Territorial		341	0	0	0	1	3	4	1	3	4	25.0	75.0	100.0
Kangra	Bajjnath	3			0			0	0	0	0	-	-	0.0
Kullu	Kullu	11			0			0	0	0	0	-	-	0.0
Mandi	Mandi	3			0			0	0	0	0	-	-	0.0
Kangra	Palampur	1			0			0	0	0	0	-	-	0.0
Kullu	Parvati	10			0			0	0	0	0	-	-	0.0
Kinnaur	Kinnaur	21			0			0	0	0	0	-	-	0.0
Shimla	Theog	1			0			0	0	0	0	-	-	0.0
Solan	Nalagarh	5			0			0	0	0	0	-	-	0.0
Shimla	Kotgarh	2			0			0	0	0	0	-	-	0.0
Solan	Baddi	2			0			0	0	0	0	-	-	0.0
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	0	0	0	-	-	0.0
Grand Total		400	0	0	0	1	3	4	1	3	4	25.0	75.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Table 7 Injury to Human Being by Wildlife

District	Division	No of Respondents Interviewed	JFM					Non JFM					Total					% to the Total of Counts					
			1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	
			Monkey	Wildboar	Sambal	Porcupine		Monkey	Wildboar	Sambal	Porcupine		Monkey	Wildboar	Sambal	Porcupine		Monkey	Wildboar	Sambal	Porcupine		
Bilaspur	Bilaspur	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Bharmour	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Chamba WL	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Chamba	Pangi	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Kinnaur	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kinnaur	Sarahan WL	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Kullu	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kullu	Kullu WL	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lahaul & Spiti	Spiti(W/L)	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Karsog	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mandi	Mandi	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Kotgarh	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rampur	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Shimla	Theog	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of Territorial		341	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0.0	0.0	0.0	100.0
Kangra	Bajjnath	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Kullu	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mandi	Mandi	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kinnaur	Kinnaur	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total		400	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0.0	0.0	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Table 8 Loss of Livestock by Major Wildlife

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total of Counts				% to the Total of Counts			
			1 Monkey	2 Wildboar	3 Sambal	Total	1 Monkey	2 Wildboar	3 Sambal	Total	1 Monkey	2 Wildboar	3 Sambal	Total	1 Monkey	2 Wildboar	3 Sambal	Total
Bilaspur	Bilaspur	60				0				0				0	-	-	-	0.0
	Bharmour	20				0				0				0	-	-	-	0.0
	Chamba WL	20				0				0				0	-	-	-	0.0
Chamba	Pangi	20				0				0				0	-	-	-	0.0
	Kinnaur	40				0				0				0	-	-	-	0.0
	Sarahan WL	20				0				0				0	-	-	-	0.0
	Kullu	20				0				0				0	-	-	-	0.0
	Kullu WL	20				0				0				0	-	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20				0				0				0	-	-	-	0.0
	Karsog	20				0				0				0	-	-	-	0.0
Mandi	Mandi	20				0				0				0	-	-	-	0.0
	Kotgarh	20				0				0				0	-	-	-	0.0
	Rampur	21				0				0				0	-	-	-	0.0
Shimla	Theog	20				0				0				0	-	-	-	0.0
Total of Territorial		341	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0.0
Kangra	Bajjnath	3				0				0				0	-	-	-	0.0
Kullu	Kullu	11				0				0				0	-	-	-	0.0
Mandi	Mandi	3				0	1	1		2	1	1	0	2	50.0	50.0	0.0	100.0
Kangra	Palampur	1				0				0				0	-	-	-	0.0
Kullu	Parvati	10				0				0				0	-	-	-	0.0
Kinnaur	Kinnaur	21				0	1			1	1	0	0	1	100.0	0.0	0.0	100.0
Shimla	Theog	1				0				0				0	-	-	-	0.0
Solan	Nalagarh	5				0	1			1	1	0	0	1	100.0	0.0	0.0	100.0
Shimla	Kotgarh	2				0				0				0	-	-	-	0.0
Solan	Baddi	2				0				0				0	-	-	-	0.0
Total of Graziers/ Grassland Users		59	0	0	0	0	3	1	0	4	3	1	0	4	75.0	25.0	0.0	100.0
Grand Total		400	0	0	0	0	3	1	0	4	3	1	0	4	75.0	25.0	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Table 9 Loss of Livestock by Other Types of Wildlife (1)

District	Division	No of Respondents Interviewed	JFM								Non JFM										
			1	2	3	4	5	6	7	8	Total	1	2	3	4	5	6	7	8	Total	
			Bear	Leopard	Tiger	Cow	Donkey	Mule	Sheep	Stray Cow		Bear	Leopard	Tiger	Cow	Donkey	Mule	Sheep	Stray Cow		
Bilaspur	Bilaspur	60								1	1		1								1
	Bharmour	20			1						1										0
	Chamba WL	20									0	2	1								3
Chamba	Pangi	20									0							1			1
	Kinnaur	40									0										0
	Sarahan WL	20									0		1		1						2
	Kullu	20		1							1										0
	Kullu WL	20									0										0
Lahaul & Spiti	Spiti(W/L)	20									0										0
	Karsog	20									0										0
Mandi	Mandi	20									0										0
	Kotgarh	20			1						1										0
	Rampur	21									0			1			1				2
Shimla	Theog	20		1							1										0
Total of Territorial		341	0	2	2	0	0	0	0	1	5	2	3	1	1	0	1	1	0	9	
	Kangra	3									0										0
	Kullu	11									0										0
	Mandi	3									0										0
	Kangra	1									0										0
	Kullu	10									0										0
	Kinnaur	21									0	2			1	2	1				6
	Shimla	1									0										0
	Solan	5									0			1							1
	Shimla	2									0										0
	Solan	2									0										0
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	0	0	0	0	2	1	1	2	1	0	0	7	
Grand Total		400	0	2	2	0	0	0	0	1	5	2	5	2	2	2	2	1	0	16	

Source: Livelihood Survey, JICA Study Team (2017)

Table 10 Loss of Livestock by Other Types of Wildlife (2)

District	Division	No of Respondents Interviewed	Total of Counts								Total	
			1 Bear	2 Leopard	3 Tiger	4 Cow	5 Donkey	6 Mule	7 Sheep	8 Stray Cow		
Bilaspur	Bilaspur	60	0	1	0	0	0	0	0	0	1	2
Chamba	Bharmour	20	0	0	1	0	0	0	0	0	0	1
	Chamba WL	20	2	1	0	0	0	0	0	0	0	3
	Pangi	20	0	0	0	0	0	0	0	1	0	1
Kinnaur	Kinnaur	40	0	0	0	0	0	0	0	0	0	0
	Sarahan WL	20	0	1	0	1	0	0	0	0	0	2
Kullu	Kullu	20	0	1	0	0	0	0	0	0	0	1
	Kullu WL	20	0	0	0	0	0	0	0	0	0	0
Lahaul & Spiti	Spiti(W/L)	20	0	0	0	0	0	0	0	0	0	0
Mandi	Karsog	20	0	0	0	0	0	0	0	0	0	0
	Mandi	20	0	0	0	0	0	0	0	0	0	0
Shimla	Kotgarh	20	0	0	1	0	0	0	0	0	0	1
	Rampur	21	0	0	1	0	0	1	0	0	0	2
	Theog	20	0	1	0	0	0	0	0	0	0	1
Total of Territorial		341	2	5	3	1	0	1	1	1	1	14
Kangra	Bajjnath	3	0	0	0	0	0	0	0	0	0	0
Kullu	Kullu	11	0	0	0	0	0	0	0	0	0	0
Mandi	Mandi	3	0	0	0	0	0	0	0	0	0	0
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10	0	0	0	0	0	0	0	0	0	0
Kinnaur	Kinnaur	21	0	2	0	1	2	1	0	0	0	6
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5	0	0	1	0	0	0	0	0	0	1
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	0
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0
Total of Graziers/ Grassland Users		59	0	2	1	1	2	1	0	0	0	7
Grand Total		400	2	7	4	2	2	2	1	1	1	21

Source: Livelihood Survey, JICA Study Team (2017)

Table 11 Compensation Paid (Damage to House and Property)

District	Division	No of Respondents Interviewed	JFM		Non JFM		Total	
			1	2	3	4	No of Household	Average amount of compensation
			No of Household Paid	Amount Received	No of Household Paid	Amount Received		
Bilaspur	Bilaspur	60						
Chamba	Bharmour	20						
	Chamba WL	20						
	Pangi	20						
Kinnaur	Kinnaur	40						
	Sarahan WL	20						
Kullu	Kullu	20						
	Kullu WL	20						
Lahaul & Spiti	Spiti(W/L)	20						
Mandi	Karsog	20						
	Mandi	20						
Shimla	Kotgarh	20						
	Rampur	21						
	Theog	20						
Total of Territorial		341	0	0	0	0	0	0
Kangra	Bajjnath	3						
Kullu	Kullu	11						
Mandi	Mandi	3						
Kangra	Palampur	1						
Kullu	Parvati	10						
Kinnaur	Kinnaur	21						
Shimla	Theog	1						
Solan	Nalagarh	5						
Shimla	Kotgarh	2						
Solan	Baddi	2						
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0
Grand Total		400	0	0	0	0	0	0

Source: Livelihood Survey, JICA Study Team (2017)

Table 12 Compensation Paid (Injury to Human Being)

District	Division	No of Respondents Interviewed	JFM		Non JFM		Total	
			1	2	3	4	No of Household	Average amount of compensation
			No of Household Paid	Amount Received	No of Household Paid	Amount Received		
Bilaspur	Bilaspur	60						
Chamba	Bharmour	20						
	Chamba WL	20						
	Pangi	20						
Kinnaur	Kinnaur	40						
	Sarahan WL	20						
Kullu	Kullu	20						
	Kullu WL	20						
Lahaul & Spiti	Spiti(W/L)	20						
Mandi	Karsog	20						
	Mandi	20						
Shimla	Kotgarh	20						
	Rampur	21						
	Theog	20						
Total of Territorial		341	0	0	0	0	0	0
Kangra	Bajjnath	3						
Kullu	Kullu	11						
Mandi	Mandi	3						
Kangra	Palampur	1						
Kullu	Parvati	10						
Kinnaur	Kinnaur	21						
Shimla	Theog	1						
Solan	Nalagarh	5						
Shimla	Kotgarh	2						
Solan	Baddi	2						
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0
Grand Total		400	0	0	0	0	0	0

Source: Livelihood Survey, JICA Study Team (2017)

Table 13 Compensation Paid (Loss of Livestock)

District	Division	No of Respondents Interviewed	JFM		Non JFM		Total	
			1	2	3	4	No of Household	Average amount of compensation
			No of Household Paid	Amount Received	No of Household Paid	Amount Received		
Bilaspur	Bilaspur	60						
Chamba	Bharmour	20						
	Chamba WL	20						
	Pangi	20						
Kinnaur	Kinnaur	40						
	Sarahan WL	20						
Kullu	Kullu	20						
	Kullu WL	20						
Lahaul & Spiti	Spiti(W/L)	20						
Mandi	Karsog	20						
	Mandi	20						
Shimla	Kotgarh	20						
	Rampur	21						
	Theog	20						
Total of Territorial		341	0	0	0	0	0	0
Kangra	Bajjnath	3						
Kullu	Kullu	11						
Mandi	Mandi	3						
Kangra	Palampur	1						
Kullu	Parvati	10						
Kinnaur	Kinnaur	21			1	16,000	1	16,000
Shimla	Theog	1						
Solan	Nalagarh	5						
Shimla	Kotgarh	2						
Solan	Baddi	2						
Total of Graziers/ Grassland Users		59	0	0	1	16,000	1	16,000
Grand Total		400	0	0	1	16,000	1	16,000

Source: Livelihood Survey, JICA Study Team (2017)

Table 14 Number of Household Aware of Measures Taken by HPFD to Mitigate Human Wildlife Conflict

District	Division	No of Respondents Interviewed (a)	JFM			Non JFM			Total			% of Yes =(Total-Yes)/ a
			1 Yes	2 No	Total	1 Yes	2 No	Total	1 Yes	2 No	Total	
Bilaspur	Bilaspur	60		22	22		7	7	0	29	29	0.0
Chamba	Bharmour	20	1	7	8		5	5	1	12	13	5.0
	Chamba WL	20			0		14	14	0	14	14	0.0
	Pangi	20		4	4		5	5	0	9	9	0.0
Kinnaur	Kinnaur	40		12	12		12	12	0	24	24	0.0
	Sarahan WL	20			0	2	10	12	2	10	12	10.0
Kullu	Kullu	20		6	6		7	7	0	13	13	0.0
	Kullu WL	20			0		11	11	0	11	11	0.0
Lahaul & Spiti	Spiti(W/L)	20			0		8	8	0	8	8	0.0
Mandi	Karsog	20		8	8		5	5	0	13	13	0.0
	Mandi	20		6	6		8	8	0	14	14	0.0
Shimla	Kotgarh	20	3	3	6		6	6	3	9	12	15.0
	Rampur	21		8	8	1	7	8	1	15	16	4.8
	Theog	20		7	7		6	6	0	13	13	0.0
Total of Territorial		341	4	83	87	3	111	114	7	194	201	2.1
Kangra	Baijnath	3			0		1	1	0	1	1	0.0
Kullu	Kullu	11			0	1	7	8	1	7	8	9.1
Mandi	Mandi	3			0		2	2	0	2	2	0.0
Kangra	Palampur	1			0		1	1	0	1	1	0.0
Kullu	Parvati	10			0		10	10	0	10	10	0.0
Kinnaur	Kinnaur	21			0		6	6	0	6	6	0.0
Shimla	Theog	1			0			0	0	0	0	0.0
Solan	Nalagarh	5			0			0	0	0	0	0.0
Shimla	Kotgarh	2			0			0	0	0	0	0.0
Solan	Baddi	2			0			0	0	0	0	0.0
Total of Graziers/ Grassland Users		59	0	0	0	1	27	28	1	27	28	1.7
Grand Total		400	4	83	87	4	138	142	8	221	229	2.0

Source: Livelihood Survey, JICA Study Team (2017)

Table 15 Type of Measures Taken by HPFD to Mitigate Human Wildlife Conflict

District	Division	No of Respondents Interviewed	JFM					Non JFM					Total				
			1	2	3	4		1	2	3	4		1	2	3	4	5
			Solar fencing	Trenches	Concrete fencing	Other Unspecified measures	Total	Solar fencing	Trenches	Concrete fencing	Other Unspecified measures	Total	Solar fencing	Trenches	Concrete fencing	Other Unspecified measures	Total
Bilaspur	Bilaspur	60					0					0	0	0	0	0	0
	Bharmour	20					0				2	2	0	0	0	2	2
	Chamba WL	20					0				1	1	0	0	0	1	1
Chamba	Pangi	20					0					0	0	0	0	0	0
	Kinnaur	40					0				1	1	0	0	0	1	1
	Sarahan WL	20					0				2	2	0	0	0	2	2
	Kullu	20					0					0	0	0	0	0	0
	Kullu WL	20					0					0	0	0	0	0	0
Lahaul & Spiti	Spiti(W/L)	20					0					0	0	0	0	0	0
	Karsog	20					0				1	1	0	0	0	1	1
Mandi	Mandi	20					0					0	0	0	0	0	0
	Kotgarh	20				3	3					0	0	0	0	3	3
	Rampur	21					0					0	0	0	0	0	0
Shimla	Theog	20					0		1			1	0	1	0	0	1
Total of Territorial		341	0	0	0	3	3	0	1	0	7	8	0	1	0	10	11
Kangra	Bajinath	3					0					0	0	0	0	0	0
Kullu	Kullu	11					0				1	1	0	0	0	1	1
Mandi	Mandi	3					0					0	0	0	0	0	0
Kangra	Palampur	1					0					0	0	0	0	0	0
Kullu	Parvati	10					0		1		1	2	0	1	0	1	2
Kinnaur	Kinnaur	21					0					0	0	0	0	0	0
Shimla	Theog	1					0					0	0	0	0	0	0
Solan	Nalagarh	5					0					0	0	0	0	0	0
Shimla	Kotgarh	2					0					0	0	0	0	0	0
Solan	Baddi	2					0					0	0	0	0	0	0
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	1	0	2	3	0	1	0	2	3
Grand Total		400	0	0	0	3	3	0	2	0	9	11	0	2	0	12	14

Source: Livelihood Survey, JICA Study Team (2017)

Attachment II.2.7.1 (1) Livelihood Survey

1. Introduction

Two types of the survey were planned and conducted by the study team during the field survey. One was the rapid field survey using the participatory tools and the other was the household survey using questionnaire as livelihood survey. The data tables generated from the household survey are given as attachment.

2. Survey Methods for Livelihood Survey

The survey ranges were identified from different bio geo regions and river catchment. Socio economic indicators and vulnerability Index from the HP Environment Master Plan were also taken into consideration. The list of the ranges identified by the study team is given in the table below.

Ranges Identified for the Livelihood Survey

Division	Range	BioGeo Region	River Catchment
Bilaspur	Ghumarwin	Shivalik	Satluj Catchment
	Sarghat	Shivalik	Satluj Catchment
Bharmour	Swai	North Western Himalaya	Chenab Catchment
Pangi	Purthi	North Western Himalaya	Chenab Catchment
Kullu	Kullu	North Western Himalaya	Beas Catchment
Lahaul	Keyllong Tehsil	Trans Himalaya	Chenab Catchment
Karsog	Karsog	North Western Himalaya	Satluj Catchment
Mandi	Kataula	North Western Himalaya	Beas Catchment
Kinnaur	Kalpa	North Western Himalaya	Satluj Catchment
	Kalpa	Western Himalaya	Satluj Catchment
Kotgarh	Kotgarh	Western Himalaya	Yamuna Catchment
Rampur	Sarahan	North Western Himalaya	Satluj Catchment
Theog	Theog	Western Himalaya	Yamuna Catchment
Chamba WL	Bharmour	North Western Himalaya	Chenab Catchment
Kullu WI	Inderlika National Park	North Western Himalaya	Beas Catchment
Sarahan WL	Rupi	North Western Himalaya	Satluj Catchment
Spiti WL	Kaza Wildlife	Trans Himalaya	Satluj Catchment

Source: JICA Study Team (2017)

A set of questionnaire was designed by the study team and finalised after the field testing. The systematic random sampling method was adopted. Field data collection and preliminary data processing was sub-contracted. The study team has provided enumerators' training and field follow up. The completed questionnaires were collected from the sub-contract for further data processing and cross verification.

The study team also carried out the household survey with the graziers/ grassland users. The informants were identified from alpine and sub-alpine pastures/ grasslands after consulting HPFD.

3. Survey Households

1) Territorial and Wildlife Divisions

4 wildlife divisions and 11 forest divisions including 17 ranges were selected from different bio geo region and river catchment. Amongst the ranges in the territorial divisions, villages having JFMCs and not having JFMCs were selected from survey. From each village, 10 households were to be identified from the voters' register or from the members' register of the JFMC/ any other community based forest management institutions if there is any. In the wildlife divisions, as the community based institutions were not recognised in the identified ranges, two villages surveyed were selected where accessible and falling within the bio geo-region. The survey areas were at times difficult to reach due to the weather and road condition and consumed longer time to collect the field data and thus, caused the subsequent delay in the data processing and analysis.

The total number of 341 households from the territorial and wildlife divisions were interviewed and all the questionnaires were used for analysis. The number of households interviewed segregated by gender of the head of household is given in the table below. Out of the total number of households, 56 households were female headed households. In most cases, the female head of household is likely to live with their adult male offspring(s) who would function as *de-facto* head of household.

The Number of Male Headed Households (MHH) and Female Headed Households (FHH) in the Surveyed Divisions – Territorial and Wildlife Divisions

District	Division	JFM			Non JFM			Total			
		MHH	FHH	Total	MHH	FHH	Total	MHH	FHH	Total	% of FHH to Division Total
Bilaspur	Bilaspur	33	7	40	18	2	20	51	9	60	15.0
Chamba	Bharmour	11		11	8	1	9	19	1	20	5.0
	Chamba WL			0	15	5	20	15	5	20	25.0
	Pangi	6	4	10	7	3	10	13	7	20	35.0
Kinnaur	Kinnaur	17	2	19	20	1	21	37	3	40	7.5
	Sarahan WL			0	19	1	20	19	1	20	5.0
Kullu	Kullu	10		10	7	3	10	17	3	20	15.0
	Kullu WL			0	17	3	20	17	3	20	15.0
Lahaul & Spiti	Spiti(W/L)			0	17	3	20	17	3	20	15.0
Mandi	Karsog	10		10	10		10	20	0	20	0.0
	Mandi	10		10	7	3	10	17	3	20	15.0
Shimla	Kotgarh	8	2	10	8	2	10	16	4	20	20.0
	Rampur	7	3	10	8	3	11	15	6	21	28.6
	Theog	7	4	11	5	4	9	12	8	20	40.0
Total of Territorial/ WL divisions		119	22	141	166	34	200	285	56	341	16.4

Source: JICA Study Team (2017)

2) Graziers/ Grassland Users

The study team has identified in consultation with HPFD to identify the areas in the alpine and sub-alpine pastures. In total, 59 graziers or grassland users were interviewed using the same questionnaire used in the livelihood survey. The graziers communities were mostly Gaddis and Gujjars and male members would migrate during the summer seasons and the rest of the families are settled in

the respective divisions. The graziers/ grassland users were interviewed at Thrass and Malana villages in Parvati Division, Lippa village in Kinnaur division and Hatu camping site in Lahaul division. The number of respondents interviewed are given in the table below.

Number of Respondents for Livelihood Survey – Grazers & Grassland Users

District	Division	JFM			Non JFM			Total			
		MHH	FHH	Total	MHH	FHH	Total	MHH	FHH	Total	% of FHH to Division Total
Kangra	Bajjnath			0	3		3	3	0	3	0.0
Kullu	Kullu			0	11		11	11	0	11	0.0
Mandi	Mandi			0	3		3	3	0	3	0.0
Kangra	Palampur			0	1		1	1	0	1	0.0
Kullu	Parvati			0	10		10	10	0	10	0.0
Kinnaur	Kinnaur			0	20	1	21	20	1	21	4.8
Shimla	Theog			0	1		1	1	0	1	0.0
Solan	Nalagarh			0	5		5	5	0	5	0.0
Shimla	Kotgarh			0	2		2	2	0	2	0.0
Solan	Baddi			0	2		2	2	0	2	0.0
Total of Graziers/ Grassland Users		0	0	0	58	1	59	58	1	59	1.7

Source: JICA Study Team (2017)

4. Remarks

- ◆ The data was separated between the territorial/ wildlife divisions and graziers/ grassland users. The data of each group was compared between JFM and Non JFM. Where relevant, the comparison by gender of the household members or head of households were made. Descriptive statistical analysis was carried out.
- ◆ Due to the time constraints, scrutinisation of data was done to the limited extent.
- ◆ To gain further insights into the village conditions, rapid field survey was carried out in the selected villages using participatory data collection tools. The findings are incorporated into the main text.
- ◆ Local units like slippers, bighas, and biswas were used in the survey. The conversion rate is given below the data table.

5. Data Tables

In this part of the attachment, socio economic data and timber requirement are given in **Attachment II.2.7.1 (2)** and the list of data tables are indicated hereunder. Also, status of timber distribution, and human wildlife conflict related data tables collected from the livelihood survey are given in **Attachment II.2.3.2** and **Attachment II.2.4.3** respectively.

➤ List of Data Tables

Item		Item	
1	Households Interviewed during Livelihood Survey	7.5	No of Goat
2	Socio-economic Background	7.6	No of Sheep
2.1	Economic Status by Ration Card (1), (2)	7.7	No of Ox
2.2	MGNREGA Job Card Holders	7.8	No of Horse
2.3	Social Groups (1), (2)	7.9	Sources of Feed (Cow)
2.4	Religion (1) - (3)	7.10	Sources of Feed (Buffalo)
3	Demography	7.11	Sources of Feed (Goat)
3.1	Population (1)	7.12	Sources of Feed (Sheep)
3.2	Education (Age above 6) (1) - (7)	7.13	Sources of Feed (Ox)
3.3	Languages (above 6 years old) (1), (2)	7.14	Weekly Expenditure on Purchased Feed (1) - (3)
3.4	Migration	8	Grazing
3.5	Primary Occupation	8.1	Average Duration of Grazing between April 2016 - March 2017 (1), (2)
3.6	Economic Activities Other than Primary Occupation	9	Household Energy
4	Wages	9.1	Types of Household Energies Used (Multiple Response)
4.1	Number of Persons Engaged in Different Types of Work (Male) (1), (2)	9.2	Average Consumption of Fuel
4.2	Place of Work (Male)	9.3	Source of Fuelwood (1), (2)
4.3	Average Number of Days Worked (Male) (1), (2)	9.4	Fuel Consumption at Household during Winter
4.4	Average Wages by Work Type (Male) (1), (2)	10	Income & Expenditure (April 2016 - March 2017)
4.5	Average Total Wages Earned (Male) (1), (2)	10.1	Sources of Income (1) - (8)
4.6	Number of Persons Engaged in Different Types of Work (Female) (1), (2)	10.2	Average Household Income by Sources (1) - (7)
4.7	Place of Work (Female)	10.3	Average of Total Household/ Per Capita Income
4.8	Average Number of Days Worked (Female) (1), (2)	10.4	Itemised Average Expenditure (1), (2)
4.9	Average Wages by Type of Work (Female) (1), (2)	10.5	Average Total Household/ Per Capita Expenditure
4.10	Average Total Wages Earned (Female) (1), (2)	11	Preferences of Tree Species
5	Housing Condition	11.1	No of Households Planting Tree Species around Homestead and Agriculture Land including Ridges
5.1	Type of Housing	11.2	Purposes of Planting Various Species
5.2	Materials Used for Houses	12	Requirement of Timber
5.3	Household Amenities	12.1	Number of Families Used Timber and Small Timber between April 2016 and March 2017
5.4	Household Assets	12.2	Volume of Timber Used between April 2016 and March 2017
6	Landholding	12.3	Small Timber (i.e. Poles of different sizes, fencing materials, branches) Used between April 2016 and March 2017
6.1	Cultivable Own Land (Irrigated) (1), (2)	13	Agriculture
6.2	Cultivable Own Land (Unirrigated) (1), (2)	13.1	No of Households Growing Crops (1), (2)
6.3	Orchard (Irrigated) (1), (2)	13.2	Production (1) - (6)
6.4	Orchard (Unirrigated) (1), (2)	13.3	Where to Sell the Produces (for Crops)
6.5	Own Forest and Grasslands (1), (2)	14	Orchard/ Home Garden
6.6	FRA	14.1	No of Households Growing Fruit Trees (1), (2)
6.7	Irrigation	14.2	Production (1), (2)
6.8	Homestead (1), (2)	14.3	Where to Sell the Produces (for Fruits)
7	Livestock	14.4	Access to Market Related Information
7.1	No of Cow	14.5	Who Collects Market related Information?
7.2	No of Buffalo	15	NTPP
7.3	No of Young	15.1	No of Households Collecting Various NTFPs (JFM)
7.4	No of Poultry		

Item		Item	
15.1	No of Households Collecting Various NTFPs (Non JFM)	16.14	Who Received Training on Micro Finance?
	No of Households Collecting Various NTFPs (Total)	17	Food Shortage
	No of Households Collecting Various NTFPs (% to the Total No of Respondents)	17.1	No of Households Experienced Food Shortage (April 2016-March 2017)
15.2	Sources of NTFPs	17.2	Average Number of Days Experienced Food Shortage
15.3	No of Days for Collection and No of Persons Engaged	17.3	Coping Strategy in the Case of Food Shortage (1), (2)
15.4	Volume of NTFPs Collected (1), (2)	18	Health
15.5	No of Households Engaged in NTFP Processing (JFM)	18.1	No of Households Experienced Food Shortage (April 2016-March 2017)
	No of Households Engaged in NTFP Processing (Non JFM)	18.2	Distance to the nearest Health Centre/ Medical Facilities
	No of Households Engaged in NTFP Processing (Total)	18.3	Means to Reach the Health Centre/ Medical Facilities
15.6	Type of Processing for Main NTFPs (1), (2)	18.4	Who Will Accompany the Female Family Members to the Health Centre/ Medical Facilities
15.7	No of Persons Engaged in Processing (1) - (3)	18.5	Reasons for Not Visiting Health Centre/ Medical Facilities
15.8	Place of Sale	19	Sanitation
15.9	Problems in NTFP Harvesting	19.1	Availability of Bathing Space at Home
15.10	Problems in NTFP Processing	19.2	Do All Members of Your Family Use the Bathing Space at Home?
15.11	Problems in NTFP Selling	19.3	Where Do Your Family Members Go to Bathe?
15.12	Access to NTFP Market Information	19.4	Availability of Toilet at Home
15.13	Who Collects Market Information	19.5	Do All Members of Your Family Use Toilet at Home?
16	Savings and Debt	19.6	Reasons for Not Using Toilet
16.1	No of Persons Who Have Bank Account (18 years and above)	19.7	Where Do Your Family Members for Toilet?
16.2	Reasons for Not Having Bank Account	20	Access to Various Offices and Schools
16.3	(Non-Bank Account Holders) Purposes to Have Bank Account (If Possible)	20.1	Average Distance to Various Offices, Schools, Health Related Facilities (1), (2)
16.4	Preferred Type of Bank Account	20.2	Mode of Transportation for Government Offices etc.
16.5	Savings, Loan and Other Bank Transactions (JFM)	21	Participation in Community Organisations/ Village Governance
16.6	Savings, Loan and Other Bank Transactions (Non-JFM, Total)	21.1	How Long Have you Been a Member of Different Types of Village Organisations/ Groups?
16.7	Reasons for Not Using Bank Accounts So Frequently (1)	21.2	Who Has the Membership?
16.8	Reasons for Not Using Bank Accounts So Frequently (2)	21.3	Who Goes to the Meeting?
16.9	Average Distance to Bank and No of Persons Took Loan	21.4	Advantages of Being a Member
16.10	No of Persons Tool Loan from Various Financial Institutions and Average Amount	21.5	Frequency of Attending Meetings
16.11	Who Took Loan	22	Benefits Received from Various Schemes
16.12	Purposes of Taking Loan		
16.13	Preferred Banking Services		

Source: JICA Study Team (2017)

Attachment II.2.7.1 (2) Data Tables

1. Households Interviewed during Livelihood Survey

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

Source: Livelihood Survey, JICA Study Team (2017)

2. Socio Economic Background
2.1 Economic Status by Ration Card (1)

District	Division	No of Respondents Interviewed	JFM												Non JFM				Total									
			MHH				FHH				MHH				FHH				JFM				Non JFM					
			APL	BPL	Antyodaya	No Card	APL	BPL	Antyodaya	No Card	APL	BPL	Antyodaya	No Card	APL	BPL	Antyodaya	No Card	APL (a)	BPL (b)	Antyodaya (c)	No Card (d)	APL (e)	BPL (f)	Antyodaya (g)	No Card (h)		
Bilaspur	Bilaspur	60	17	12	4				4	3			12	5	1						21	15	4	0	12	6	1	0
	Bharmour	20	6	4	1								5	3							6	4	1	0	6	3	0	0
	Chamba WL	20											10	4	1						0	0	0	0	11	8	1	0
Chamba	Pangi	20	2	4						4			3	3							2	8	0	0	3	6	0	0
	Kinnaur	40	12	4	1				1	1			14	6							13	5	1	0	15	6	0	0
	Sarahan WL	20											11	4	2						1	0	0	0	11	5	2	1
	Kullu	20	5	5									5	2							5	5	0	0	7	3	0	0
	Kullu WL	20											14	2	1						0	0	0	0	16	2	1	0
Lahaul & Spiti	Spiti (W/L)	20											10	4	3						0	0	0	0	12	5	3	0
	Karsog	20	6	2									8	2							6	2	0	1	8	2	0	0
Mandi	Mandi	20	3	6	1								4	2	1						3	6	1	0	6	3	1	0
	Kotgarh	20	4	4					1	1			6		2						5	5	0	0	8	0	2	0
	Rampur	21	3	3	1				1	2			4	3	1						4	5	1	0	5	4	2	0
Shimla	Theog	20	5	1	1				3	1			4								8	2	1	0	4	1	2	2
Total of Territorial		341	63	45	9	1	10	12	0	0	110	40	12	1	14	14	3	2	73	57	9	1	124	54	15	3		
Kangra	Bainath	3											3								0	0	0	0	3	0	0	0
Kullu	Kullu	11											8	2							0	0	0	0	8	2	0	1
Mandi	Mandi	3											3								0	0	0	0	3	0	0	0
Kangra	Palampur	1											1								0	0	0	0	1	0	0	0
Kullu	Parvati	10											3	2							0	0	0	0	3	2	0	4
Kinnaur	Kinnaur	21											8	9							0	0	0	0	9	9	0	0
Shimla	Theog	1											1								0	0	0	0	0	1	0	0
Solan	Nalagarh	5											1	3							0	0	0	0	1	3	0	0
Shimla	Kotgarh	2											1								0	0	0	0	0	1	0	0
Solan	Baddi	2											1	1							0	0	0	0	1	1	0	0
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	0	0	25	22	0	5	1	0	0	0	0	0	0	0	0	26	22	0	5	
Grand Total		400	63	45	9	1	10	12	0	0	135	62	12	6	15	14	3	2	73	57	9	1	150	76	15	8		

Source: Livelihood Survey, JICA Study Team (2017)

2.1 Economic Status by Ration Card (2)

District	Division	No of Respondents Interviewed	Division Total				% to Division Total													
			APL	BPL	Antyodaya	No Card (l)	Total (m)	APL			BPL			Antyodaya			No Card			Total
								JFM	Non JFM	Total	JFM	Non JFM	Total	JFM	Non JFM	Total	JFM	Non JFM	Total	
Bilaspur	Bilaspur	60	33	21	5	0	59	63.6	36.4	100.0	71.4	28.6	100.0	55.9	35.6	8.5	0.0	100.0		
	Bharmour	20	12	7	1	0	20	50.0	50.0	100.0	57.1	42.9	100.0	60.0	35.0	5.0	0.0	100.0		
	Chamba WL	20	11	8	1	0	20	0.0	100.0	100.0	0.0	100.0	100.0	55.0	40.0	5.0	0.0	100.0		
Chamba	Pangi	20	5	14	0	0	19	40.0	60.0	100.0	57.1	42.9	100.0	26.3	73.7	0.0	0.0	100.0		
	Kinnaur	40	28	11	1	0	40	46.4	53.6	100.0	45.5	54.5	100.0	70.0	27.5	2.5	0.0	100.0		
	Sarahan WL	20	11	5	2	1	19	0.0	100.0	100.0	0.0	100.0	100.0	57.9	26.3	10.5	5.3	100.0		
	Kullu	20	12	8	0	0	20	41.7	58.3	100.0	62.5	37.5	100.0	60.0	40.0	0.0	0.0	100.0		
Kullu	Kullu WL	20	16	2	1	0	19	0.0	100.0	100.0	0.0	100.0	100.0	84.2	10.5	5.3	0.0	100.0		
Lahaul & Spiti	Spiti (W/L)	20	12	5	3	0	20	0.0	100.0	100.0	0.0	100.0	100.0	60.0	25.0	15.0	0.0	100.0		
	Karsog	20	14	4	0	1	19	42.9	57.1	100.0	50.0	50.0	100.0	73.7	21.1	0.0	5.3	100.0		
Mandi	Mandi	20	9	9	2	0	20	33.3	66.7	100.0	66.7	33.3	100.0	45.0	45.0	10.0	0.0	100.0		
	Kotgarh	20	13	5	2	0	20	38.5	61.5	100.0	100.0	0.0	100.0	65.0	25.0	10.0	0.0	100.0		
	Rampur	21	9	9	3	0	21	44.4	55.6	100.0	55.6	44.4	100.0	42.9	42.9	14.3	0.0	100.0		
Shimla	Theog	20	12	3	3	2	20	66.7	33.3	100.0	66.7	33.3	100.0	60.0	15.0	15.0	10.0	100.0		
Total of Territorial		341	197	111	24	4	336	37.1	62.9	100.0	51.4	48.6	100.0	58.6	33.0	7.1	1.2	100.0		
Kangra	Bainath	3	3	0	0	0	3	0.0	100.0	100.0	-	-	0.0	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu	11	8	2	0	1	11	0.0	100.0	100.0	0.0	100.0	100.0	72.7	18.2	0.0	9.1	100.0		
Mandi	Mandi	3	0	3	0	0	3	-	-	0.0	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0		
Kangra	Palampur	1	1	0	0	0	1	0.0	100.0	100.0	-	-	0.0	100.0	0.0	0.0	0.0	100.0		
Kullu	Parvati	10	3	2	0	4	9	0.0	100.0	100.0	0.0	100.0	100.0	33.3	22.2	0.0	44.4	100.0		
Kinnaur	Kinnaur	21	9	9	0	0	18	0.0	100.0	100.0	0.0	100.0	100.0	50.0	50.0	0.0	0.0	100.0		
Shimla	Theog	1	0	1	0	0	1	-	-	0.0	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0		
Solan	Nalagarh	5	1	3	0	0	4	0.0	100.0	100.0	0.0	100.0	100.0	25.0	75.0	0.0	0.0	100.0		
Shimla	Kotgarh	2	0	1	0	0	1	-	-	0.0	0.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0		
Solan	Baddi	2	1	1	0	0	2	0.0	100.0	100.0	0.0	100.0	100.0	50.0	50.0	0.0	0.0	100.0		
Total of Graziers/ Grassland Users		59	26	22	0	5	53	0.0	100.0	100.0	0.0	100.0	100.0	49.1	41.5	0.0	9.4	100.0		
Grand Total		400	223	133	24	9	389	32.7	67.3	100.0	42.9	57.1	100.0	57.3	34.2	6.2	2.3	100.0		

Source: Livelihood Survey, JICA Study Team (2017)

2.2 MGNREGA Job Card Holders

District	Division	No of Respondents Interviewed (a)	JFM				Non JFM				Total				% of (b) to (a)			
			MHH		FHH		MHH		FHH		JFM		Non JFM			Division Total		
			Have	Don't Have	Have	Don't Have	Have	Don't Have	Have	Don't Have	Have	Don't Have	Have	Don't Have		Have	Don't Have	
Bilaspur	Bilaspur	60	25	8	5	2	15	3	2	30	10	17	3	47	13	60	78.3	
	Bharmour	20	8	3			6	2	1	8	3	6	3	14	6	20	70.0	
	Chamba WL	20	5	4	1		4	2	1	6	4	5	2	11	6	17	55.0	
Chamba	Panga	20	6		4		7		3	10	0	10	0	20	0	20	100.0	
	Kinnaur	40	16	1	1	1	18	2		17	2	18	3	35	5	40	87.5	
	Sarahan WL	20	6				12	1	1	6	0	13	1	19	1	20	95.0	
	Kullu	20	10				5	1	2	10	0	7	2	17	2	19	85.0	
	Kullu WL	20	8	1	2		6	2	1	10	1	7	3	17	4	21	85.0	
Lahaul & Spiti	Spiti(W/L)	20	6	2	1		8		4	7	2	12	0	19	2	21	95.0	
	Karsog	20	10				10			10	0	10	0	20	0	20	100.0	
Mandi	Mandi	20	8	2			7		3	8	2	10	0	18	2	20	90.0	
	Kotgarh	20	5	3	1	1	2	6	2	6	4	4	6	10	10	20	50.0	
	Rampur	21	7		2	1	8		3	9	1	11	0	20	1	21	95.2	
Shimla	Theog	20	5	2	4		5		1	3	9	2	6	3	15	5	20	75.0
Total of Territorial		341	125	26	21	5	113	19	23	7	146	31	136	26	282	57	339	82.7
Kangra	Bainath	3					1	1		0	1	1	1	1	1	2	33.3	
Kullu	Kullu	11					11			0	0	11	0	11	0	11	100.0	
Mandi	Mandi	3					3			0	0	3	0	3	0	3	100.0	
Kangra	Palampur	1						1		0	0	0	1	0	1	1	0.0	
Kullu	Parvati	10					5	5		0	0	5	5	5	5	10	50.0	
Kinnaur	Kinnaur	21					12	4	1	0	0	13	4	13	4	17	61.9	
Shimla	Theog	1						1		0	0	0	1	0	1	1	0.0	
Solan	Nalagarh	5						5		0	0	0	5	0	5	5	0.0	
Shimla	Kotgarh	2						1		0	0	0	1	0	1	1	0.0	
Solan	Baddi	2						2		0	0	0	2	0	2	2	0.0	
Total of Graziers/ Grassland Users		59	0	0	0	0	32	20	1	0	0	0	33	20	33	20	53	55.9
Grand Total		400	125	26	21	5	145	39	24	7	146	31	169	46	315	77	392	78.8

Source: Livelihood Survey, JICA Study Team (2017)

2.3. Social Groups (1)

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total															
			MHH		FHH		MHH		FHH		JFM		Non JFM		General											
			SC	ST	OBC	General	SC	ST	OBC	General	SC (a)	ST (b)	OBC (c)	General (d)	SC (e)	ST (f)	OBC (g)	General (h)								
Bilaspur	Bilaspur	60	12	3		18	1		1	5	5			13	1		1	13	3	1	23	6	0	0	14	
	Bharmour	20	1	10										7		1		1	10	0	0	0	0	8	0	1
	Chamba WL	20															1	0	0	0	0	0	0	4	0	1
Chamba	Panga	20		3		3				1			5		2		3		6	0	0	4	0	8	0	2
	Kinnaur	40	1	13	2	1	1	1				6	12	2		1		2	14	2	1	7	12	2	0	
	Sarahan WL	20									3	15	1			1		0	0	0	0	3	16	1	0	
	Kullu	20				10							4	2			1	2	0	0	0	10	0	0	5	4
	Kullu WL	20									8			8	1		2	0	0	0	0	9	0	0	10	
Lahaul & Spiti	Spiti(W/L)	20										17				3		0	0	0	0	0	20	0	0	
	Karsog	20	5			5				3		5	2	1			5	0	0	0	5	3	0	5	2	
Mandi	Mandi	20	1	3		6				4		1		2	2		1	1	3	0	6	6	1	0	3	
	Kotgarh	20	6			2	1			1	4		4				2	7	0	0	3	4	0	0	6	
	Rampur	21				7				3	1		7	1			2	0	0	0	10	2	0	0	9	
Shimla	Theog	20	3			4	2			2			5	1		1	2	5	0	0	6	1	0	1	7	
Total of Territorial		341	29	32	2	56	5	4	1	12	34	57	12	46	7	12	2	13	34	36	3	68	41	69	14	59
Kangra	Bainath	3											3				0	0	0	0	0	0	0	3	0	
Kullu	Kullu	11								1		4	1	5			0	0	0	0	1	4	1	5		
Mandi	Mandi	3								2			1				0	0	0	0	2	0	0	1		
Kangra	Palampur	1											1				0	0	0	0	0	0	0	1		
Kullu	Parvati	10										9	1				0	0	0	0	0	0	9	1		
Kinnaur	Kinnaur	21								3	16				1		0	0	0	0	3	17	0	0		
Shimla	Theog	1										1					0	0	0	0	0	1	0	0		
Solan	Nalagarh	5								2	3						0	0	0	0	2	3	0	0		
Shimla	Kotgarh	2										2					0	0	0	0	0	2	0	0		
Solan	Baddi	2										2					0	0	0	0	0	2	0	0		
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	0	0	8	28	13	8	0	1	0	0	0	0	0	8	29	13	8	
Grand Total		400	29	32	2	56	5	4	1	12	42	85	25	54	7	13	2	13	34	36	3	68	49	98	27	67

Source: Livelihood Survey, JICA Study Team (2017)

2.4 Religion (2)

District	Division	No of Respondents Interviewed	Total														Total (p)	
			JFM					Non JFM					Division					
			Christian (a)	Muslim (b)	Hindu (c)	Buddhist (d)	Both Hindu and Buddhism (e)	Christian (f)	Muslim (g)	Hindu (h)	Buddhist (i)	Both Hindu and Buddhism (j)	Christian (k)	Muslim (l)	Hindu (m)	Buddhist (n)		Both Hindu and Buddhism (o)
Bilaspur	Bilaspur	60	0	0	40	0	0	0	0	25	0	0	0	0	65	0	0	65
	Bharmour	20	0	0	11	0	0	0	0	8	0	0	0	0	19	0	0	19
	Chamba WL	20	0	0	0	0	0	0	0	17	0	0	0	0	17	0	0	17
Chamba	Pangi	20	0	0	10	0	0	0	0	11	0	0	0	0	21	0	0	21
	Kinnaur	40	0	0	19	0	0	0	0	22	0	0	0	0	41	0	0	41
	Sarahan WL	20	0	0	0	0	0	0	0	19	0	0	0	0	19	0	0	19
	Kullu	20	0	0	10	0	0	0	0	7	0	0	0	0	17	0	0	17
	Kullu WL	20	0	0	0	0	0	0	0	17	0	0	0	0	17	0	0	17
Lahaul & Spiti	Spiti (W/L)	20	0	0	0	0	0	0	0	3	16	0	0	0	3	16	0	19
	Karsog	20	0	0	10	0	0	0	0	10	0	0	0	0	20	0	0	20
Mandi	Mandi	20	0	3	6	0	0	0	1	6	0	0	0	4	12	0	0	16
	Kotgarh	20	0	0	10	0	0	0	0	10	0	0	0	0	20	0	0	20
	Rampur	21	0	0	10	0	0	0	0	11	0	0	0	0	21	0	0	21
Shimla	Theog	20	0	0	11	0	0	0	0	9	0	0	0	0	20	0	0	20
Total of Territorial		341	0	3	137	0	0	0	1	175	16	0	0	4	312	16	0	332
Kangra	Bainath	3	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	3
	Kullu	11	0	0	0	0	0	0	3	8	0	0	0	3	8	0	0	11
Mandi	Mandi	3	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	3
Kangra	Palampur	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1
	Kullu	10	0	0	0	0	0	0	0	10	0	0	0	0	10	0	0	10
	Kinnaur	21	0	0	0	0	0	0	0	10	4	6	0	0	10	4	6	20
Shimla	Theog	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1
Solan	Nalagarh	5	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	5
Shimla	Kotgarh	2	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	2
Solan	Baddi	2	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	2
Total of Graziers/ Grassland Users		59	0	0	0	0	0	0	13	35	4	6	0	13	35	4	6	58
Grand Total		400	0	3	137	0	0	0	14	210	20	6	0	17	347	20	6	390

Source: Livelihood Survey, JICA Study Team (2017)

2.4 Religion (3)

District	Division	No of Respondents Interviewed	% to Division Total											Division Total				Total
			Christian		Muslim		Hindu		Buddhist		Both Hinduism		Christian (=k/p)	Muslim (l/p)	Hindu (=m/p)	Buddhist (n/p)	Hinduism and Buddhism (=o/p)	
			JFM (=a/k)	Non JFM (f/k)	JFM (=b/l)	Non JFM (=g/l)	JFM (=c/m)	Non JFM (=h/m)	JFM (=d/n)	Non JFM (=i/n)	JFM (=e/o)	Non JFM (=j/o)						
Bilaspur	Bilaspur	60	-	-	-	61.5	38.5	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Bharmour	20	-	-	-	57.9	42.1	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Chamba WL	20	-	-	-	0.0	100.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Chamba	Pangi	20	-	-	-	47.6	52.4	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Kinnaur	40	-	-	-	46.3	53.7	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Sarahan WL	20	-	-	-	0.0	100.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Kullu	20	-	-	-	58.8	41.2	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Kullu WL	20	-	-	-	0.0	100.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti (W/L)	20	-	-	-	0.0	100.0	0.0	100.0	-	-	0.0	0.0	15.8	84.2	0.0	0.0	100.0
	Karsog	20	-	-	-	50.0	50.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Mandi	Mandi	20	-	-	75.0	25.0	50.0	50.0	-	-	-	0.0	25.0	75.0	0.0	0.0	0.0	100.0
	Kotgarh	20	-	-	-	50.0	50.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Rampur	21	-	-	-	47.6	52.4	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Shimla	Theog	20	-	-	-	55.0	45.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Total of Territorial		341	-	-	75.0	25.0	43.9	56.1	0.0	100.0	-	0.0	1.2	94.0	4.8	0.0	0.0	100.0
Kangra	Bainath	3	-	-	-	0.0	100.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Kullu	11	-	-	0.0	100.0	0.0	100.0	-	-	-	0.0	27.3	72.7	0.0	0.0	0.0	100.0
Mandi	Mandi	3	-	-	-	0.0	100.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Kangra	Palampur	1	-	-	-	0.0	100.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Kullu	10	-	-	-	0.0	100.0	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Kinnaur	21	-	-	-	0.0	100.0	0.0	100.0	0.0	100.0	0.0	0.0	50.0	20.0	30.0	0.0	100.0
Shimla	Theog	1	-	-	0.0	100.0	-	-	-	-	-	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Solan	Nalagarh	5	-	-	0.0	100.0	-	-	-	-	-	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	2	-	-	0.0	100.0	-	-	-	-	-	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Solan	Baddi	2	-	-	0.0	100.0	-	-	-	-	-	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Total of Graziers/ Grassland Users		59	-	-	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	22.4	60.3	6.9	10.3	100.0
Grand Total		400	-	-	17.6	82.4	39.5	60.5	0.0	100.0	0.0	100.0	0.0	4.4	89.0	5.1	1.5	100.0

Source: Livelihood Survey, JICA Study Team (2017)

3. Demography

3.1 Population (1)

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

Source: Livelihood Survey, JICA Study Team (2017)

3.1 Population (2) by HH Category

District	Division	No of Respondents Interviewed (a)	Population		
			1	2	Total
			MHH	FHH	
Bilaspur	Bilaspur	60	279	49	328
	Bharmour	20	103	2	105
	Chamba W	20	72	25	97
Chamba	Pangi	20	66	37	103
	Kinnaur	40	198	12	210
Kinnaur	Sarahan W	20	114	3	117
	Kullu	20	78	12	90
Kullu	Kullu WL	20	81	16	97
Lahaul & Spiti	Spiti(W/L)	20	105	14	119
	Karsog	20	98		98
Mandi	Mandi	20	93	20	113
	Kotgarh	20	69	16	85
	Rampur	21	73	27	100
Shimla	Theog	20	68	44	112
Total of Territorial		341	1,497	277	1,774
Kangra	Bajinath	3	18		18
Kullu	Kullu	11	62		62
Mandi	Mandi	3	14		14
Kangra	Palampur	1	3		3
	Parvati	10	69		69
Kinnaur	Kinnaur	21	120	4	124
Shimla	Theog	1	5		5
Solan	Nalagarh	5	42		42
Shimla	Kotgarh	2	8		8
Solan	Baddi	2	11		11
Total of Graziers/ Grassland		59	352	4	356
Grand Total		400	1,849	281	2,130

3.2 Education (Age above 6) (1)

District	Division	No of Respondents Interviewed (a)	JFM																								Total of JFM
			Above 6 Population						Male								Female								Total		
			Male	Female	Total	1	2	3	4	5	6	7	8	Total	1	2	3	4	5	6	7	8					
			(a)	(b)	(c)	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermed late (12th pass)	Graduate	Post Graduate	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermed late (12th pass)	Graduate	Post Graduate						
Bilaspur	Bilaspur	60	156	146	302	4	22	11	10	20	15	8	1	91	19	23	9	6	9	11	7	2	86	177			
	Bharmour	20	55	38	93	1	14	3	1	4	9	2	1	35	6	6	2		3	4	1		22	57			
	Chamba WL	20	42	38	80									0										0	0		
Chamba	Pangi	20	41	52	93	2	10	2	2	2	2			18	6	6	6	3	5				26	44			
	Kinnaur	40	103	95	198	6	11	14	3	9	9	1	2	55	9	8	6	2	8	5	1	1	40	95			
Kinnaur	Sarahan WL	20	55	55	110									0										0	0		
	Kullu	20	39	44	83	3	7	5		4	1	2		22	3	8	3	1	3	1			19	41			
Kullu	Kullu WL	20	43	46	89									0										0	0		
Lahaul & Spiti	Spiti(W/L)	20	56	55	111									0										0	0		
	Karsog	20	50	42	92		9	1	1	8	5	3		27	4	6	1	3	4	2			20	47			
Mandi	Mandi	20	50	55	105	3	11	3	5	2		2		26	7	8	1	1	2	2			21	47			
	Kotgarh	20	46	35	81	4	4	5	3	2	1			19	5	5	1	1	1				13	32			
	Rampur	21	47	43	90	1	6	2	2	2	6	1		20	3	5	3	1	2	5	2		21	41			
Shimla	Theog	20	50	57	107		7	4	3	4	4	5	4	31	4	7	1	6	5	3	2		28	59			
Total of Territorial		341	833	801	1634	24	101	50	25	58	53	25	8	344	66	82	33	11	40	43	16	5	296	640			
Kangra	Bajinath	3	7	8	15																			0	0		
Kullu	Kullu	11	27	30	57																			0	0		
Mandi	Mandi	3	11	3	14																			0	0		
Kangra	Palampur	1	2	1	3																			0	0		
Kullu	Parvati	10	28	35	63																			0	0		
Kinnaur	Kinnaur	21	59	57	116																			0	0		
Shimla	Theog	1	3	2	5																			0	0		
Solan	Nalagarh	5	21	17	38																			0	0		
Shimla	Kotgarh	2	6	2	8																			0	0		
Solan	Baddi	2	5	5	10																			0	0		
Total of Graziers/ Grassland		59	169	160	329	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Grand Total		400	1002	961	1963	24	101	50	25	58	53	25	8	344	66	82	33	11	40	43	16	5	296	640			

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 6) (2)

District	Division	No of Respondents Interviewed (a)	Non JFM																				Total of Non JFM	
			Above 6 Population			Male								Female										
			Male	Female	Total	1	2	3	4	5	6	7	8	Total	1	2	3	4	5	6	7	8		Total
(a)	(b)	(c)	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate	Total					
Bilaspur	Bilaspur	60	156	146	302	4	13	10	3	14	7	4	51	9	11	8	2	3	6	4	3	46	97	
	Bharmour	20	55	38	93	2	1	1	1	6	7	1	18	2	1	1	5	5	1	1	14	32	14	
	Chamba WL	20	42	38	80	4	7	3	1	11	12	3	41	8	3	3	3	8	2	7	8	2	34	75
Chamba	Pang	20	41	52	93	2	6	5	1	5	3	1	23	8	4	3	2	2	3	1	2	20	43	
	Kinnaur	40	103	95	198	3	13	7	2	9	9	1	45	11	15	2	2	4	8	3	4	45	90	
	Sarahan WL	20	55	55	110	1	9	4	2	6	16	6	7	12	3	1	7	13	4	1	48	99	48	
Kinnaur	Kullu	20	39	44	83	1	3	1	2	2	5	1	14	3	2	2	1	4	3	1	23	37	23	
	Kullu WL	20	43	46	89	8	8	5	3	8	6	3	42	11	12	7	1	4	8	1	44	86	44	
Lahaul & Spiti	Spiti(W/L)	20	56	55	111	2	16	5	3	5	10	7	49	12	6	5	1	7	13	3	2	49	98	
	Karsog	20	50	42	92	1	7	4	2	1	4	2	23	4	4	2	2	7	1	1	19	42	19	
Mandi	Mandi	20	50	55	105	2	7	7	1	1	3	1	21	9	11	2	1	2	3	1	28	49	28	
	Kotgarh	20	46	35	81	1	4	2	4	4	8	3	26	3	5	2	3	1	7	1	22	48	22	
	Rampur	21	47	43	90	1	8	3	1	4	9	1	25	2	6	2	1	2	5	1	19	44	19	
Shimla	Theog	20	50	57	107	1	5	3	1	7	2	1	18	4	6	4	1	7	1	1	27	45	27	
Total of Territorial		341	833	801	1,634	26	107	60	24	83	98	32	447	93	97	45	19	56	97	24	7	438	885	
Kangra	Bajjnath	3	7	8	15	1	2	1	1	1	1	1	7	2	1	2	1	1	2	1	8	15	8	
Kullu	Kullu	11	27	30	57	6	3	2	1	4	7	3	1	27	8	3	5	1	2	4	3	27	54	
Mandi	Mandi	3	11	3	14	1	5	1	0	2	1	0	10	1	1	1	1	1	1	1	3	13	3	
Kangra	Palampur	1	2	1	3	0	1	0	0	0	0	1	2	1	1	0	0	0	0	0	1	3	1	
Kullu	Parvati	10	28	35	63	9	6	6	2	3	1	0	27	14	9	3	2	2	1	1	32	59	32	
Kinnaur	Kinnaur	21	59	57	116	4	15	4	4	10	13	2	4	56	10	10	4	3	6	10	4	50	106	
Shimla	Theog	1	3	2	5	2	1	0	0	0	0	0	3	2	0	0	0	0	0	0	2	5	2	
Solan	Nalagarh	5	21	17	38	11	4	1	3	0	0	0	19	12	1	1	0	0	0	0	14	33	14	
Shimla	Kotgarh	2	6	2	8	5	1	0	0	0	0	0	6	2	0	0	0	0	0	0	2	8	2	
Solan	Baddi	2	5	5	10	1	3	0	0	1	0	0	5	2	3	0	0	0	0	0	5	10	5	
Total of Graziers/ Grassland		400	1,002	961	1,963	40	41	15	10	21	23	7	5	162	54	26	16	7	12	15	7	144	306	
Grand Total		400	1,002	961	1,963	66	148	75	34	104	121	39	22	609	147	123	61	26	68	112	31	582	1,191	

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 6) (3)

District	Division	No of Respondents Interviewed (a)	Total																			
			Above 6 Population			Male								Female								
			Male	Female	Total	1	2	3	4	5	6	7	8	Total	1	2	3	4	5	6	7	8
(a)	(b)	(c)	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate	Total			
Bilaspur	Bilaspur	60	156	146	302	4	35	21	13	34	19	11	5	142	28	34	17	8	17	11	5	132
	Bharmour	20	55	38	93	3	15	4	1	10	16	3	1	53	8	6	2	1	8	9	2	36
	Chamba WL	20	42	38	80	4	7	3	0	11	12	3	1	41	8	3	3	7	8	2	0	34
Chamba	Pang	20	41	52	93	4	16	7	1	7	5	1	0	41	14	10	9	0	5	8	0	46
	Kinnaur	40	103	95	198	9	24	21	5	18	18	2	3	100	20	23	8	4	12	13	4	85
	Sarahan WL	20	55	55	110	1	9	4	2	6	16	6	7	51	7	12	3	1	7	13	4	48
Kinnaur	Kullu	20	39	44	83	3	10	6	2	6	6	3	0	36	6	10	5	2	10	5	3	42
	Kullu WL	20	43	46	89	8	8	5	3	8	6	3	1	42	11	12	7	1	4	8	1	44
Lahaul & Spiti	Spiti(W/L)	20	56	55	111	2	16	5	3	5	10	7	1	49	12	6	5	1	7	13	3	49
	Karsog	20	50	42	92	1	16	5	3	9	9	5	2	50	8	10	3	2	3	11	2	39
Mandi	Mandi	20	50	55	105	5	18	10	6	3	3	2	0	47	16	19	3	2	4	5	0	35
	Kotgarh	20	46	35	81	5	8	7	4	7	10	4	0	45	8	10	3	2	8	1	0	35
	Rampur	21	47	43	90	1	14	3	3	6	15	1	0	45	5	11	5	2	4	10	3	40
Shimla	Theog	20	50	57	107	0	12	7	3	11	6	6	4	49	8	13	5	0	11	12	4	55
Total of Territorial		341	833	801	1,634	50	208	110	49	141	151	57	25	791	159	179	78	30	96	140	40	734
Kangra	Bajjnath	3	7	8	15	1	2	1	0	1	1	1	0	7	2	1	2	1	0	2	0	8
Kullu	Kullu	11	27	30	57	6	3	2	1	4	7	3	1	27	8	3	5	1	2	4	1	3
Mandi	Mandi	3	11	3	14	1	5	1	0	2	1	0	0	10	1	0	1	0	1	0	0	3
Kangra	Palampur	1	2	1	3	0	1	0	0	0	0	1	0	2	1	0	0	0	0	0	0	1
Kullu	Parvati	10	28	35	63	9	6	6	2	3	1	0	0	27	14	9	3	2	2	1	0	32
Kinnaur	Kinnaur	21	59	57	116	4	15	4	4	10	13	2	4	56	10	10	4	3	6	10	4	50
Shimla	Theog	1	3	2	5	2	1	0	0	0	0	0	0	3	2	0	0	0	0	0	0	2
Solan	Nalagarh	5	21	17	38	11	4	1	3	0	0	0	0	19	12	1	1	0	0	0	0	14
Shimla	Kotgarh	2	6	2	8	5	1	0	0	0	0	0	0	6	2	0	0	0	0	0	0	2
Solan	Baddi	2	5	5	10	1	3	0	0	1	0	0	0	5	2	3	0	0	0	0	0	5
Total of Graziers/ Grassland		400	1,002	961	1,963	40	41	15	10	21	23	7	5	162	54	26	16	7	12	15	7	144
Grand Total		400	1,002	961	1,963	90	249	125	59	162	174	64	30	953	213	205	94	37	108	155	47	878

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 6) (4)

District	Division	No of Respondents Interviewed (a)	% to the above 6 Population																							
			Non Literacy			Primary			Middle Education (8th Pass)			Under Matriculation (Under 10th)			Matriculation (10th Pass)			Intermediate (12th pass)			Graduate			Post Graduate		
			Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Bilaspur	Bilaspur	60	2.6	19.2	10.6	22.4	23.3	22.8	13.5	11.6	12.6	8.3	5.5	13.9	21.8	8.2	15.2	12.2	11.6	11.9	7.1	7.5	7.3	3.2	3.4	3.3
	Bharmour	20	5.5	21.1	11.8	27.3	15.8	22.6	7.3	5.3	6.5	1.8	2.6	11.8	18.2	21.1	19.4	29.1	23.7	26.9	5.5	5.3	5.4	1.8	0.0	1.1
	Chamba WL	20	9.5	21.1	15.0	16.7	7.9	12.5	7.1	7.9	7.5	0.0	7.9	17.5	26.2	18.4	22.5	28.6	21.1	25.0	7.1	5.3	6.3	2.4	0.0	1.3
Chamba	Pangi	20	9.8	26.9	19.4	39.0	19.2	28.0	17.1	17.3	17.2	2.4	0.0	7.5	17.1	9.6	12.9	12.2	15.4	14.0	2.4	0.0	1.1	0.0	0.0	0.0
	Kinnaur	40	8.7	21.1	14.6	23.3	24.2	23.7	20.4	8.4	14.6	4.9	4.2	11.1	17.5	12.6	15.2	17.5	13.7	15.7	1.9	4.2	3.0	2.9	1.1	2.0
	Sarahan WL	20	1.8	12.7	7.3	16.4	21.8	19.1	7.3	5.5	6.4	3.6	1.8	6.4	10.9	12.7	11.8	29.1	23.6	26.4	10.9	7.3	9.1	12.7	1.8	7.3
	Kullu	20	7.7	13.6	10.8	25.6	22.7	24.1	15.4	11.4	13.3	5.1	4.5	9.6	15.4	22.7	19.3	15.4	11.4	13.3	7.7	6.8	7.2	0.0	2.3	1.2
	Kullu WL	20	18.6	23.9	21.3	18.6	26.1	22.5	11.6	15.2	13.5	7.0	2.2	10.1	18.6	8.7	13.5	14.0	17.4	15.7	7.0	2.2	4.5	2.3	0.0	1.1
Lahaul & Spiti	Spiti(W/L)	20	3.6	21.8	12.6	28.6	10.9	19.8	8.9	9.1	9.0	5.4	1.8	5.4	8.9	12.7	10.8	17.9	23.6	20.7	12.5	5.5	9.0	1.8	3.6	2.7
	Karsog	20	2.0	19.0	9.8	32.0	23.8	28.3	10.0	7.1	8.7	6.0	4.8	12.0	18.0	7.1	13.0	18.0	26.2	21.7	10.0	4.8	7.6	4.0	0.0	2.2
Mandi	Mandi	20	10.0	29.1	20.0	36.0	34.5	35.2	20.0	5.5	12.4	12.0	3.6	4.8	6.0	7.3	6.7	6.0	9.1	7.6	4.0	0.0	1.9	0.0	0.0	0.0
	Kotgarh	20	10.9	22.9	16.0	17.4	28.6	22.2	15.2	8.6	12.3	8.7	8.6	12.3	15.2	5.7	11.1	21.7	22.9	22.2	8.7	2.9	6.2	0.0	0.0	0.0
	Rampur	21	2.1	11.6	6.7	29.8	25.6	27.8	10.6	11.6	11.1	6.4	4.7	8.9	12.8	9.3	11.1	31.9	23.3	27.8	2.1	7.0	4.4	0.0	0.0	0.0
	Theog	20	0.0	14.0	7.5	24.0	22.8	23.4	14.0	8.8	11.2	6.0	0.0	10.3	22.0	19.3	20.6	12.0	21.1	16.8	12.0	7.0	9.3	8.0	3.5	5.6
	Total of Territorial	341	6.0	19.9	12.8	25.0	22.3	23.7	13.2	9.7	11.5	5.9	3.7	10.5	16.9	12.0	14.5	18.1	17.5	17.8	6.8	5.0	5.9	3.0	1.5	2.3
Kangra	Bainjath	3	14.3	25.0	20.0	28.6	12.5	20.0	14.3	25.0	20.0	0.0	0.0	6.7	14.3	12.5	13.3	14.3	0.0	6.7	14.3	25.0	20.0	0.0	0.0	0.0
	Kullu	11	22.2	26.7	24.6	11.1	10.0	10.5	7.4	16.7	12.3	3.7	3.3	8.8	14.8	6.7	10.5	25.9	13.3	19.3	11.1	3.3	7.0	3.7	10.0	7.0
	Mandi	3	9.1	33.3	14.3	45.5	0.0	35.7	9.1	33.3	14.3	0.0	0.0	14.3	18.2	33.3	21.4	9.1	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0
	Kangra	1	0.0	100.0	33.3	50.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	33.3	0.0	0.0	0.0	0.0
	Kullu	10	32.1	40.0	36.5	21.4	25.7	23.8	21.4	8.6	14.3	7.1	5.7	7.9	10.7	5.7	7.9	3.6	2.9	3.2	0.0	0.0	0.0	2.9	1.6	1.6
	Kinnaur	21	6.8	17.5	12.1	25.4	17.5	21.6	6.8	7.0	6.9	6.8	5.3	11.2	16.9	10.5	13.8	22.0	17.5	19.8	3.4	7.0	5.2	6.8	5.3	6.0
	Shimla	1	66.7	100.0	80.0	33.3	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Solan	Nalagarh	5	52.4	70.6	60.5	19.0	0.0	10.5	4.8	5.9	5.3	14.3	5.9	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shimla	2	83.3	100.0	87.5	16.7	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Solan	2	20.0	40.0	30.0	60.0	60.0	60.0	0.0	0.0	0.0	0.0	0.0	10.0	20.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total of Graziers/ Grassland Users	59	23.7	33.8	28.6	24.3	16.3	20.4	8.9	10.0	9.4	5.9	4.4	8.5	12.4	7.5	10.0	13.6	9.4	11.6	4.1	4.4	4.3	3.0	4.4	3.6
	Grand Total	400	9.0	22.2	15.4	24.9	21.3	23.1	12.5	9.8	11.2	5.9	3.9	10.1	16.2	11.2	13.8	17.4	16.1	16.8	6.4	4.9	5.7	3.0	2.0	2.5

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 18) (5)

District	Division	No of Respondents Interviewed (a)	Counts of Responses																							
			Above 18 Population			Male											Female									
			Male	Female	Total	1	2	3	4	5	6	7	8	Total	1	2	3	4	5	6	7	8	Total			
(a)	(b)	(c)	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate	Total	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate	Total						
Bilaspur	Bilaspur	60	116	117	233	4	16	15	8	30	18	10	5	106	28	20	14	4	10	14	11	5	106			
	Bharmour	20	44	35	79	3	8	2	1	8	16	3	1	42	8	6	2		7	9	2		34			
	Chamba WL	20	35	33	68	3	4	3		9	11	3	1	34	8	2	2	1	6	8	2		29			
Chamba	Pangi	20	28	36	64	4	6	6		6	5	1		28	14	3	5		3	6			31			
	Kinnaur	40	79	72	151	9	13	14	5	16	14	2	3	76	19	11	6	4	7	12	4	1	64			
	Sarahan WL	20	43	35	78	1	4	3	1	5	14	6	7	41	7	2	2	1	4	11	4	1	32			
	Kullu	20	30	34	64	3	7	3	1	6	4	3		27	6	5	4	1	9	3	3		32			
	Kullu WL	20	38	34	72	8	5	2	3	1	8	1		28	7	2	2	2	4	11	4	1	32			
Lahaul & Spiti	Spiti(W/L)	20	40	40	80	1	7	3	2	4	9	7	1	34	11	1	4		4	11	2	2	35			
	Karsog	20	38	35	73	1	8	4	1	8	9	5	2	38	8	7		1	3	11	2		32			
	Mandi	20	36	39	75	5	10	9	3	3	2	2		34	16	7	2	2	3	5			35			
	Kotgarh	20	41	28	69	4	5	7	3	7	10	4		40	8	5	2	3	1	8	1		28			
	Rampur	21	35	33	68	1	6	3	2	6	15	1		34	5	5	2	2	3	10	3		30			
	Theog	20	33	42	75	2	4	3	2	8	5	6	4	32	8	6	2		9	9	4	2	40			
Total Territorial		341	636	613	1,249	47	101	78	33	117	140	54	24	594	153	82	49	20	73	128	42	13	560			
Kangra	Bajinath	3	6	7	13	1	2			1	1	1		6	2	1	1		1		2		7			
	Kullu	11	24	23	47	6	2	2	1	3	6	3	1	24	8	1	3	1	1	4	1	3	22			
	Mandi	3	9	3	12	1	3	1		2	1			8	1		1		1				3			
	Kangra	1	1		1		1							1									0			
	Kullu	10	18	21	39	9	3	3	1	1	1			18	14	1		1	2	1		1	20			
	Kinnaur	21	47	44	91	4	10	3	2	7	12	2	4	44	9	8	3	3	4	8	4	3	42			
	Shimla	1	3	1	4	2	1							3	1								1			
	Solan	5	18	14	32	10	4	1	3					18	10		1	1					12			
	Shimla	2	3	1	4	2	1							3	1								1			
	Solan	2	2	2	4	1	1							2	2								2			
Total of Graziers/ Grassland		59	131	116	247	36	28	10	7	14	21	6	5	127	48	11	9	6	9	13	7	7	110			
Grand Total		400	767	729	1,496	83	129	88	40	131	161	60	29	721	201	93	58	26	82	141	49	20	670			

Source: Livelihood Survey, JICA Study Team (2017)

3.2 Education (Age above 18) (6)

District	Division	No of Respondents Interviewed (a)	% to Above 18 Population (Gender wise)																							
			Above 18 Population			Male											Female									
			Male	Female	Total	1	2	3	4	5	6	7	8	Total % of Responses	1	2	3	4	5	6	7	8	Total % of Responses			
(a)	(b)	(c)	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate	Total % of Responses	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate	Total % of Responses						
Bilaspur	Bilaspur	60	116	117	233	3.4	13.8	12.9	6.9	25.9	15.5	8.6	4.3	91.4	23.9	17.1	12.0	3.4	8.5	12.0	9.4	4.3	90.6			
	Bharmour	20	44	35	79	6.8	18.2	4.5	2.3	18.2	36.4	6.8	2.3	95.5	22.9	17.1		5.7	0.0	20.0	25.7	5.7	0.0	97.1		
	Chamba WL	20	35	33	68	8.6	11.4	8.6	0.0	25.7	31.4	8.6	2.9	97.1	24.2	6.1	6.1	3.0	18.2	24.2	6.1	0.0	87.9			
Chamba	Pangi	20	28	36	64	14.3	21.4	21.4	0.0	21.4	17.9	3.6	0.0	100.0	38.9	8.3	13.9	0.0	8.3	16.7	0.0	0.0	86.1			
	Kinnaur	40	79	72	151	11.4	16.5	17.7	6.3	20.3	17.7	2.5	3.8	96.2	26.4	15.3	8.3	5.6	9.7	16.7	5.6	1.4	88.9			
	Sarahan WL	20	43	35	78	2.3	9.3	7.0	2.3	11.6	32.6	14.0	16.3	95.3	20.0	5.7	5.7	2.9	11.4	31.4	11.4	2.9	91.4			
	Kullu	20	30	34	64	10.0	23.3	10.0	3.3	20.0	13.3	10.0	0.0	90.0	17.6	14.7	11.8	2.9	26.5	8.8	8.8	2.9	94.1			
	Kullu WL	20	38	34	72	21.1	13.2	5.3	7.9	2.6	21.1	2.6	0.0	73.7	20.6	5.9	5.9	2.9	11.8	32.4	11.8	2.9	94.1			
Lahaul & Spiti	Spiti(W/L)	20	40	40	80	2.5	17.5	7.5	5.0	10.0	22.5	17.5	2.5	85.0	27.5	2.5	10.0	0.0	10.0	27.5	5.0	5.0	87.5			
	Karsog	20	38	35	73	2.6	21.1	10.5	2.6	21.1	23.7	13.2	5.3	100.0	22.9	20.0	0.0	2.9	8.6	31.4	5.7	0.0	91.4			
	Mandi	20	36	39	75	13.9	27.8	25.0	8.3	8.3	5.6	5.6	0.0	94.4	41.0	17.9	5.1	5.1	7.7	12.8	0.0	0.0	89.7			
	Kotgarh	20	41	28	69	9.8	12.2	17.1	7.3	17.1	24.4	9.8	0.0	97.6	28.6	17.9	7.1	10.7	3.6	28.6	3.6	0.0	100.0			
	Rampur	21	35	33	68	2.9	17.1	8.6	5.7	17.1	42.9	2.9	0.0	97.1	15.2	15.2	6.1	6.1	9.1	30.3	9.1	0.0	90.9			
	Theog	20	33	42	75	0.0	6.1	12.1	9.1	24.2	15.2	18.2	12.1	97.0	19.0	14.3	4.8	0.0	21.4	21.4	9.5	4.8	95.2			
Total Territorial		341	636	613	1,249	7.4	15.9	12.3	5.2	18.4	22.0	8.5	3.8	93.4	25.0	13.4	8.0	3.3	11.9	20.9	6.9	2.1	91.4			
Kangra	Bajinath	3	6	7	13	16.7	33.3	0.0	0.0	16.7	16.7	16.7	0.0	100.0	28.6	14.3	14.3	0.0	14.3	0.0	28.6	0.0	100.0			
	Kullu	11	24	23	47	25.0	8.3	8.3	4.2	12.5	25.0	12.5	4.2	100.0	34.8	4.3	13.0	4.3	4.3	17.4	4.3	13.0	95.7			
	Mandi	3	9	3	12	11.1	33.3	11.1	0.0	22.2	11.1	0.0	0.0	88.9	33.3	0.0	33.3	0.0	33.3	0.0	0.0	0.0	100.0			
	Kangra	1	1		1	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0									0.0			
	Kullu	10	18	21	39	50.0	16.7	16.7	5.6	5.6	5.6	0.0	0.0	100.0	66.7	4.8	0.0	4.8	9.5	4.8	0.0	4.8	95.2			
	Kinnaur	21	47	44	91	8.5	21.3	6.4	4.3	14.9	25.5	4.3	8.5	93.6	20.5	18.2	6.8	6.8	9.1	18.2	9.1	6.8	95.5			
	Shimla	1	3	1	4	66.7	33.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0			
	Solan	5	18	14	32	55.6	22.2	5.6	16.7	0.0	0.0	0.0	0.0	100.0	71.4	0.0	7.1	7.1	0.0	0.0	0.0	0.0	85.7			
	Shimla	2	3	1	4	66.7	33.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0			
	Solan	2	2	2	4	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0			
Total of Graziers/ Grassland		59	131	116	247	27.5	21.4	7.6	5.3	10.7	16.0	4.6	3.8	96.9	41.4	9.5	7.8	5.2	7.8	11.2	6.0	6.0				

3.2 Education (Age above 18) (7)

District	Division	No of Respondents Interviewed (a)	Counts of Responses												% to Above 18 Population										
			Above 18 Population			Total										Total									
			Male	Female	Total	1	2	3	4	5	6	7	8	Total	1	2	3	4	5	6	7	8	Total % of Responses		
			(a)	(b)	(c)	Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate		Non Literate	Primary	Middle Education (8th Pass)	Under Matriculation (Under 10th)	Matriculation (10th Pass)	Intermediate (12th pass)	Graduate	Post Graduate			
Bilaspur	Bilaspur	60	116	117	233	32	36	29	12	40	32	21	10	212	13.7	15.5	12.4	5.2	17.2	13.7	9.0	4.3	91.0		
Chamba	Bharmour	20	44	35	79	11	14	4	1	15	25	5	1	76	13.9	17.7	5.1	1.3	19.0	31.6	6.3	1.3	96.2		
	Chamba WL	20	35	33	68	11	6	5	1	15	19	5	1	63	16.2	8.8	7.4	1.5	22.1	27.9	7.4	1.5	92.6		
	Pangi	20	28	36	64	18	9	11	0	9	11	1	0	59	28.1	14.1	17.2	0.0	14.1	17.2	1.6	0.0	92.2		
Kinnaur	Kinnaur	40	79	72	151	28	24	20	9	23	26	6	4	140	18.5	15.9	13.2	6.0	15.2	17.2	4.0	2.6	92.7		
	Sarahan WL	20	43	35	78	8	6	5	2	9	25	10	8	73	10.3	7.7	6.4	2.6	11.5	32.1	12.8	10.3	93.6		
Kullu	Kullu	20	30	34	64	9	12	7	2	15	7	6	1	59	14.1	18.8	10.9	3.1	23.4	10.9	9.4	1.6	92.2		
	Kullu WL	20	38	34	72	15	7	4	4	5	19	5	1	60	20.8	9.7	5.6	5.6	6.9	26.4	6.9	1.4	83.3		
Lahaul & Spiti	Spiti(W/L)	20	40	40	80	12	8	7	2	8	20	9	3	69	15.0	10.0	8.8	2.5	10.0	25.0	11.3	3.8	86.3		
	Karsog	20	38	35	73	9	15	4	2	11	20	7	2	70	12.3	20.5	5.5	2.7	15.1	27.4	9.6	2.7	95.9		
Mandi	Mandi	20	36	39	75	21	17	11	5	6	7	2	0	69	28.0	22.7	14.7	6.7	8.0	9.3	2.7	0.0	92.0		
	Kotgarh	20	41	28	69	12	10	9	6	8	18	5	0	68	17.4	14.5	13.0	8.7	11.6	26.1	7.2	0.0	98.6		
	Rampur	21	35	33	68	6	11	5	4	9	25	4	0	64	8.8	16.2	7.4	5.9	13.2	36.8	5.9	0.0	94.1		
Shimla	Theog	20	33	42	75	8	8	6	3	17	14	10	6	72	10.7	10.7	8.0	4.0	22.7	18.7	13.3	8.0	96.0		
Total of Territorial		341	636	613	1,249	200	183	127	53	190	268	96	37	1,154	16	15	10	4	15	21	8	3	92.4		
Kangra	Bajjnath	3	6	7	13	3	3	1	0	2	1	3	0	13	23.1	23.1	7.7	0.0	15.4	7.7	23.1	0.0	100.0		
Kullu	Kullu	11	24	23	47	14	3	5	2	4	10	4	4	46	29.8	6.4	10.6	4.3	8.5	21.3	8.5	8.5	97.9		
Mandi	Mandi	3	9	3	12	2	3	2	0	3	1	0	0	11	16.7	25.0	16.7	0.0	25.0	8.3	0.0	0.0	91.7		
Kangra	Palampur	1	1		1	0	1	0	0	0	0	0	0	1	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Kullu	Parvati	10	18	21	39	23	4	3	2	3	2	0	1	38	59.0	10.3	7.7	5.1	7.7	5.1	0.0	2.6	97.4		
Kinnaur	Kinnaur	21	47	44	91	13	18	6	5	11	20	6	7	86	14.3	19.8	6.6	5.5	12.1	22.0	6.6	7.7	94.5		
Shimla	Theog	1	3	1	4	3	1	0	0	0	0	0	0	4	75.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Solan	Nalagarh	5	18	14	32	20	4	2	4	0	0	0	0	30	62.5	12.5	6.3	12.5	0.0	0.0	0.0	0.0	93.8		
Shimla	Kotgarh	2	3	1	4	3	1	0	0	0	0	0	0	4	75.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Solan	Baddi	2	2	2	4	3	1	0	0	0	0	0	0	4	75.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Total of Graziers/ Grassland		59	131	116	247	84	39	19	13	23	34	13	12	237	34.0	15.8	7.7	5.3	9.3	13.8	5.3	4.9	96.0		
Grand Total		400	767	729	1,496	284	222	146	66	213	302	109	49	1,391	19.0	14.8	9.8	4.4	14.2	20.2	7.3	3.3	93.0		

Source: Livelihood Survey, JICA Study Team (2017)

3.3 Languages (above 6 years old) (1)

District	Division	No of Respondents Interviewed (a)	Above 6 Population			Male									Female									Total									Total % to above 6 population								
			Male	Female	Total	Hindi			English			Read	Write	Speak	Hindi			English			Read	Write	Speak	Hindi			English														
						Read	Write	Speak	Read	Write	Speak				Read	Write	Speak	Read	Write	Speak				Read	Write	Speak	Read	Write	Speak												
Bilaspur	Bilaspur	60	156	146	302	131	129	129	81	77	49	105	102	114	54	52	33	236	231	243	135	179	82	78.1	76.5	80.5	44.7	59.3	27.2												
Chamba	Bharmour	20	54	38	92	47	47	49	38	38	24	22	23	28	22	21	13	69	70	77	60	61	37	75.0	76.1	83.7	65.2	66.3	40.2												
	Chamba WL	20	42	38	80	38	38	40	30	30	14	27	26	34	23	23	10	65	64	74	53	56	24	81.3	80.0	92.5	66.3	70.0	30.0												
	Pangi	20	41	52	93	35	35	38	24	24	16	35	35	44	23	23	13	70	70	82	47	59	29	75.3	75.3	88.2	50.5	63.4	31.2												
Kinnaur	Kinnaur	40	102	95	197	90	90	94	49	49	36	71	72	79	42	40	28	161	162	173	91	121	64	81.7	82.2	87.8	46.2	61.4	32.5												
	Sarahan WL	20	55	55	110	50	50	51	33	32	26	44	43	48	28	28	19	94	93	99	61	75	45	85.5	84.5	90.0	55.5	68.2	40.9												
Kullu	Kullu WL	20	39	44	83	34	34	35	23	23	12	36	36	39	29	29	11	70	70	74	52	59	23	84.3	84.3	89.2	62.7	71.1	27.7												
	Sprit(W/L)	20	43	46	89	34	34	37	20	19	16	29	29	36	16	16	15	63	63	73	36	48	31	70.8	70.8	82.0	40.4	53.9	34.8												
Lahaul & Spiti	Sprit(W/L)	20	56	55	111	50	50	52	26	29	28	42	42	47	27	29	25	92	92	99	53	71	53	82.9	82.9	89.2	47.7	64.0	47.7												
	Karsog	20	50	42	92	46	46	47	22	22	14	32	32	36	16	16	6	78	78	83	38	54	20	84.8	84.8	90.2	41.3	58.7	21.7												
Mandi	Mandi	20	50	55	105	40	40	46	15	14	9	34	34	40	13	12	6	74	74	86	28	48	15	70.5	70.5	81.9	26.7	45.7	14.3												
	Kotgarh	20	46	35	81	39	39	44	27	20	13	24	25	28	14	12	8	63	64	72	41	45	21	77.8	79.0	88.9	50.6	55.6	25.9												
	Rampur	21	47	43	90	43	43	44	33	32	20	37	36	41	29	28	19	80	79	85	62	68	39	88.9	87.8	94.4	68.9	75.6	43.3												
Shimla	Theog	20	50	57	107	49	49	48	35	35	28	45	45	52	34	34	25	94	94	100	69	80	53	87.9	87.9	93.5	64.5	74.8	49.5												
Total of Territorial		341	831	801	1,632	726	724	754	456	444	305	583	580	666	370	363	231	1,309	1,304	1,420	826	1,024	536	80.2	79.9	87.0	50.6	62.7	32.8												
Kangra	Bajmath	3	7	8	15	5	5	7	2	2		6	4	8	2	2	11	9	15	4	6	0	73.3	60.0	100.0	26.7	40.0	0.0													
Kullu	Kullu	11	27	30	57	20	24	24	10	7	3	20	15	24	11	8	2	40	39	48	21	22	5	70.2	68.4	84.2	36.8	38.6	8.8												
Mandi	Mandi	3	11	3	14	2								2			2	0	2	0	0	0	0	14.3	0.0	14.3	0.0	0.0	0.0												
Kangra	Palampur	1	2	1	3	2	2	2						1			2	2	3	0	0	0	0	66.7	66.7	100.0	0.0	0.0	0.0												
Kullu	Parvati	10	28	35	63	12	13	28				14	14	35			26	27	63	0	14	0	0	41.3	42.9	100.0	0.0	22.2	0.0												
Kinnaur	Kinnaur	21	59	57	116	53	35	34	14	14	12	47	34	34	14	14	12	100	69	68	28	48	24	86.2	59.5	58.6	24.1	41.4	20.7												
Shimla	Theog	1	3	2	5	1	1	3				1		2			1	1	5	0	0	0	0	20.0	20.0	100.0	0.0	0.0	0.0												
Solan	Nalagarh	5	21	17	38	9	4	16				5	1	9			14	5	25	0	1	0	0	36.8	13.2	65.8	0.0	2.6	0.0												
Shimla	Kotgarh	2	6	2	8	2	1	3				2		1			2	1	4	0	0	0	0	25.0	12.5	50.0	0.0	0.0	0.0												
Solan	Baddi	2	5	5	10	5						4					9	0	0	0	0	0	0	0	90.0	0.0	0.0	0.0	0.0	0.0											
Total of Graziers/ Grassland		59	169	160	329	111	85	117	26	23	15	96	68	116	27	24	14	207	153	233	53	91	29	62.9	46.5	70.8	16.1	27.7	8.8												
Grand Total		400	1,000	961	1,961	837	809	871	482	467	320	679	648	782	397	387	245	1,516	1,457	1,652	879	1,115	565	77.3	74.3	84.3	44.8	56.9	28.8												

Source: Livelihood Survey, JICA Study Team (2017)

3.3 Languages (above 6 years old) (2)

Other languages Used in the Survey Area

District	Division	No of Respondents Interviewed (a)	No of Persons Speaking Local Languages													Total									
			Dogri	Bharmou ri	Bhoti	Bilaspur i	Bodhis hat	Gaddi	Gujjari	Kinnauri	Kulluvi	Malwi	Mandaya li	Pahari	Pangwali		Punjabi								
Bilaspur	Bilaspur	60	61			40																		52	281
Chamba	Bharmour	20		13						64															77
	Chamba WL	20		2						60															62
	Pangi	20																					88	88	
Kinnaur	Kinnaur	40		40									144												184
	Sarahan WL	20		19									55												93
Kullu	Kullu	20		1									76												78
	Kullu WL	20											77												79
Lahaul & Spiti	Sprit(W/L)	20	4		97			13																	114
	Karsog	20	29														20								87
Mandi	Mandi	20	33														41								103
	Kotgarh	20	14																						76
Shimla	Rampur	21	35																						88
	Theog	20	25																						111
Total of Territorial		341	261	15	97	40	13	124	0	199	153	0	61	418	88	52	1,521								
Kangra	Bajmath	3																							0
Kullu	Kullu	11																							0
Mandi	Mandi	3																							0
Kangra	Palampur	1																							0
Kullu	Parvati	10												55											55
Kinnaur	Kinnaur	21											50												50
Shimla	Theog	1																							0
Solan	Nalagarh	5											28												28
Shimla	Kotgarh	2											7												7
Solan	Baddi	2											10												10
Total of Graziers/ Grassland		59	0	0	0	0	0	0	45	50	0	55	0	0	0	0	150								150
Grand Total		400																							

3.4 Migration

District	Division	No of Respondents Interviewed (a)	JFM						Non JFM						Total					
			No of Male in persons	Average duration in months	No of Female in persons	Average duration in months	Total number of persons	Total average duration in months	No of Male in persons	Average duration in months	No of Female in persons	Average duration in months	Total number of persons	Total average duration in months	No of Male in persons	Average duration in months	No of Female in persons	Average duration in months	Total number of persons	Total average duration in months
Bilaspur	Bilaspur	60	8	5.1	1	4.0	9	5.0	8	11.0	1	12.0	9	11.1	16	8.1	2	8.0	18	8.1
	Bharmour	20	4	6.3	2	4.0	6	5.5	1	-		1	-	5	6.3	2	4.0	7	5.5	
	Chamba WL	20							7	7.4	4	8.0	11	7.6	7	7.4	4	8.0	11	7.6
Chamba	Pangi	20							1	7.0	1	7.0	2	7.0	1	7.0	1	7.0	2	7.0
	Kinnaur	40	5	8.0	3	10.0	8	9.0	3	12.0	3	12.0	6	12.0	8	10.0	6	10.7	14	10.3
Kinnaur	Sarahan WL	20							3	-			3	-	3	-			3	-
	Kullu	20																		
Kullu	Kullu WL	20																		
Lahaul & Spiti	Spiti(W/L)	20							6	9.5	7	9.4	13	9.5	6	9.5	7	9.4	13	9.5
	Karsog	20	3	10.0			3	10.0						3	10.0			3	10.0	
Mandi	Mandi	20	2	5.5			2	5.5	1	3.0	1	6.0	2	4.5	3	4.7	1	6.0	4	5.0
	Kotgarh	20							4	10.8			4	10.8	4	10.8			4	10.8
	Rampur	21	2	4.5			2	4.5	1	8.0	1	10.0	2	9.0	3	5.7	1	10.0	4	6.8
Shimla	Theog	20			2	6.0	2	6.0									2	6.0	2	6.0
Total of Territorial		341	24	6.4	8	6.3	32	6.3	35	9.3	18	9.1	53	9.2	59	8.1	26	8.2	85	8.2
Kangra	Bainath	3							3	4.3	1	4.0	4	4.3	3	4.3	1	4.0	4	4.3
Kullu	Kullu	11							7	5.3	1	3.0	8	5.0	7	5.3	1	3.0	8	5.0
Mandi	Mandi	3							2	4.0			2	4.0	2	4.0			2	4.0
Kangra	Palampur	1							1	4.0			1	4.0	1	4.0			1	4.0
Kullu	Parvati	10							7	5.0	4	4.0	11	4.6	7	5.0	4	4.0	11	4.6
Kinnaur	Kinnaur	21							5	4.2	6	6.1	11	5.2	5	4.2	6	6.1	11	5.2
Shimla	Theog	1							3	4.0	1	4.0	4	4.0	3	4.0	1	4.0	4	4.0
Solan	Nalagarh	5							17	4.5	10	4.4	27	4.4	17	4.5	10	4.4	27	4.4
Shimla	Kotgarh	2							6	6.0	1	6.0	7	6.0	6	6.0	1	6.0	7	6.0
Solan	Baddi	2							2	6.0	2	6.0	4	6.0	2	6.0	2	6.0	4	6.0
Total of Graziers/ Grassland		59							53	4.8	26	4.8	79	4.8	53	4.8	26	4.8	79	4.8
Grand Total		400	24	6.4	8	6.3	32	6.3	88	6.4	44	6.4	132	6.4	112	6.392	52	6.4	164	6.4

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

3.5 Primary Occupation (1)

		JFM																		
		Male																		
District	Division	No of Respondents Interviewed (a)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
			Subsistence farmer	Commercial Farmer	Shepherd	Daily Wages Agricultural Labourer	Skilled Wage Labourer	Semi/Unskilled Wage Labourer	Service-Private Sector	Service-Government	Trade Business	Cottage Industry	Other self-Employed	Housewife	Retiring pensioner and	Unemployed	Student not earning	Retired not earning	Vendor	
Bilaspur	Bilaspur	60	7	3		8	8	2	10	8	5		6		7	3	5			72
	Bharmour	20	4						1	2	1				2	4	7			21
	Chamba WL	20																		0
Chamba	Pangi	20	2	1		3					1			1			2			10
	Kinnaur	40	11	4		6	3		1	3	1				1	2	3			35
Kinnaur	Sarahan WL	20																		0
	Kullu	20	4	6	1	4	1		1	1			1				2			21
Kullu	Kullu WL	20																		0
Lahaul &	Spiti(W/L)	20																		0
	Karsog	20	11	3			2		1	2					1	1	3			24
Mandi	Mandi	20	2	4		1	1	1	3								6			19
	Kotgarh	20	2	2		1	2	1	2			1		1		2	1	2		17
	Rampur	21	4	1		1	2				3	1					1			13
Shimla	Theog	20	7			3				6	1		1		3	2	1			24
Total of Territorial		341	47	31	1	24	22	4	19	22	14	1	9	1	16	13	32	0	0	256
Kangra	Bajnath	3																		
Kullu	Kullu	11																		
Mandi	Mandi	3																		
Kangra	Palampur	1																		
Kullu	Parvati	10																		
Kinnaur	Kinnaur	21																		
Shimla	Theog	1																		
Solan	Nalagarh	5																		
Shimla	Kotgarh	2																		
Solan	Baddi	2																		
Total of Graziers/ Grassland User		59																		
Grand Total		400	47	31	1	24	22	4	19	22	14	1	9	1	16	13	32	0	0	256

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation (2)

		JFM																		
		Female																		
District	Division	No of Respondents Interviewed (a)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
			Subsistence farmer	Commercial Farmer	Shepherd	Daily Wages Agricultural Labourer	Skilled Wage Labourer	Semi/Unskilled Wage Labourer	Service-Private Sector	Service-Government	Trade Business	Cottage Industry	Other self-Employed	Housewife	Retiring pensioner and	Unemployed	Student not earning	Retired not earning	Vendor	
Bilaspur	Bilaspur	60	5		1	1				2			2	44	1			4		60
	Bharmour	20								2				13		2	2			19
	Chamba WL	20																		0
Chamba	Pangi	20				2								10			3			15
	Kinnaur	40	8	2		3			1					19	1	1				35
Kinnaur	Sarahan WL	20																		0
	Kullu	20	1						1					10	1		2			15
Kullu	Kullu WL	20																		0
Lahaul &	Spiti(W/L)	20																		0
	Karsog	20	10	2										8			1			21
Mandi	Mandi	20												9		1	2			12
	Kotgarh	20	3	1					1					3			1			9
	Rampur	21	1	1		2						1		10			2			17
Shimla	Theog	20		6					1	2				14	1					24
Total of Territorial		341	28	12	1	8	0	0	1	9	0	1	2	140	4	4	17	0	0	227
Kangra	Bajnath	3																		
Kullu	Kullu	11																		
Mandi	Mandi	3																		
Kangra	Palampur	1																		
Kullu	Parvati	10																		
Kinnaur	Kinnaur	21																		
Shimla	Theog	1																		
Solan	Nalagarh	5																		
Shimla	Kotgarh	2																		
Solan	Baddi	2																		
Total of Graziers/ Grassland User		59																		
Grand Total		400	28	12	1	8	0	0	1	9	0	1	2	140	4	4	17	0	0	227

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation (3)

		Non JFM																		
		Male																		
District	Division	No of Respondents Interviewed (a)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
			Subsistence farmer	Commercial Farmer	Shepherd	Daily Wages Agricultural Labourer	Skilled Wage Labourer	Semi/Unskilled Wage Labourer	Service-Private Sector	Service-Government	Trade Business	Cottage Industry	Other self-Employed	Housewife	Retiring pensioner and	Unemployed	Student not earning	Retired not earning	Vendor	
Bilaspur	Bilaspur	60	6			3	2		17	3	1				2			4		38
	Bharmour	20	2	2		3	1		1	4		1						3		16
	Chamba WL	20	3		3	4	3		3	4				3	1	6	1			27
Chamba	Pangi	20	3			4			1	2	2									14
	Kinnaur	40	13	7		2	2		2	3	1			1	1	1	6			39
Kinnaur	Sarahan WL	20	10		2	3	2		4	5	1			1	4	2	5			39
	Kullu	20	2	6		1					2					1	2			14
Kullu	Kullu WL	20	10	6		5			1	8		4								35
Lahaul &	Spiti(W/L)	20	5	8		2				9						1	7	8		40
	Karsog	20	4	1		1				3				1		4	1			15
Mandi	Mandi	20	7	1			1	1		1						1	1			13
	Kotgarh	20	4	4		1			7		1	1			4		1			23
	Rampur	21	9	3		1							1			3	3			20
Shimla	Theog	20	1	2						2					3		1			10
Total of Territorial		341	79	40	5	26	12	3	43	36	10	2	2	5	17	25	38	0	0	343
Kangra	Bajnath	3	2		2					3										7
Kullu	Kullu	11	13	3	2				1	1	2	1					1	1		25
Mandi	Mandi	3	1																	1
Kangra	Palampur	1	1																	1
Kullu	Parvati	10	15																1	16
Kinnaur	Kinnaur	21	15	2		4	2			5				1	6	6			1	42
Shimla	Theog	1																		0
Solan	Nalagarh	5							1							1		2		4
Shimla	Kotgarh	2									2									2
Solan	Baddi	2															3			3
Total of Graziers/ Grassland User		59	47	5	4	4	2	2	1	10	3	0	0	0	1	7	10	3	2	101
Grand Total		400	126	45	9	30	14	5	44	46	13	2	2	5	18	32	48	3	2	444

Source: Livelihood Survey, JICA Study Team (2017)

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

3.5 Primary Occupation

(4)

District	Division	No of Respondents Interviewed (a)	Non JFM															Total			
			Female																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	
Subsistence farmer	Commercial Farmer	Shepherd	Daily Wages Agricultural Labourer	Skilled Wage Labourer	Semi/Unskilled Wage Labourer	Service-Private Sector	Service Government	Trade Business	Cottage Industry	Other self-Employed	Housewife	Retiring pensioner and	Unemployed	Student not earning	Retired not earning	Vendor					
Bilaspur	Bilaspur	60	6			3	1	1				23	1	1	3			39			
	Bharmour	20		1						1		8		2				12			
Chamba	Chamba WL	20	1	1		1						22	3	1	3			32			
	Pangi	20				2						13		1	4			20			
Kinnaur	Kinnaur	40	5	3		3			1	3		15			9			39			
	Sarahan WL	20	6			4				3		16			8			38			
	Kullu	20		1						1		8			5	1		16			
Kullu	Kullu WL	20	4	1					1			20	1		3			31			
Lahaul &	Spiiti (W/L)	20	7	7	1				1	6		10	1	3	3			39			
	Karsog	20	2									12		2				16			
Mandi	Mandi	20	8				2					6			2			18			
	Kotgarh	20	4						1	2		11	1					19			
	Rampur	21	1			1			2			2		1	5			13			
Shimla	Theog	20	2									7			2			13			
	Total of Territorial	341	46	14	1	14	3	1	5	19	0	2	2	173	7	10	47	1	0	345	
Kangra	Baijnath	3	7																		7
Kullu	Kullu	11	11	2			1		1	2					1	1					19
Mandi	Mandi	3																			0
Kangra	Palampur	1																			0
Kullu	Parvati	10	10																		10
Kinnaur	Kinnaur	21	8			1	1		1	3		13		3	7						37
Shimla	Theog	1																			0
Solan	Nalagarh	5										7			1						8
Shimla	Kotgarh	2										2									2
Solan	Baddi	2										2			3						5
	Total of Graziers/ Grassland User	59	36	2	0	1	2	0	2	5	0	0	0	24	0	4	12	0	0	0	88
	Grand Total	400	82	16	1	15	5	1	7	24	0	2	2	197	7	14	59	1	0	0	433

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation

(5)

District	Division	No of Respondents Interviewed (a)	Total															Total			
			Male																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	
Subsistence farmer	Commercial Farmer	Shepherd	Daily Wages Agricultural Labourer	Skilled Wage Labourer	Semi/Unskilled Wage Labourer	Service-Private Sector	Service Government	Trade Business	Cottage Industry	Other self-Employed	Housewife	Retiring pensioner and	Unemployed	Student not earning	Retired not earning	Vendor					
Bilaspur	Bilaspur	60	13	3	0	11	10	2	27	11	6	0	6	0	9	3	9	0	0	0	110
	Bharmour	20	6	2	0	3	1	0	1	6	1	1	0	0	2	4	10	0	0	0	37
Chamba	Chamba WL	20	3	0	3	0	3	0	3	4	0	0	0	3	1	6	1	0	0	0	27
	Pangi	20	5	1	0	7	0	1	2	2	1	0	0	1	1	0	3	0	0	0	24
Kinnaur	Kinnaur	40	24	11	0	8	5	0	3	6	2	0	0	1	2	3	9	0	0	0	74
	Sarahan WL	20	10	0	2	3	2	0	4	5	1	0	0	1	4	2	5	0	0	0	39
	Kullu	20	6	12	1	5	1	0	1	1	2	0	1	0	0	1	4	0	0	0	35
Kullu	Kullu WL	20	10	6	0	5	0	1	8	0	4	0	0	0	0	1	0	0	0	0	35
Lahaul &	Spiiti (W/L)	20	5	8	0	2	0	0	0	9	0	0	0	1	7	8	0	0	0	0	40
	Karsog	20	15	4	0	1	2	0	1	5	0	0	1	0	1	5	4	0	0	0	39
Mandi	Mandi	20	9	5	0	1	2	2	3	1	1	0	0	0	1	7	0	0	0	0	32
	Kotgarh	20	6	6	0	2	2	1	9	0	2	1	1	0	6	1	3	0	0	0	40
	Rampur	21	13	4	0	2	2	0	0	0	3	1	1	0	0	3	4	0	0	0	33
Shimla	Theog	20	1	9	0	0	4	0	0	8	1	0	1	0	6	2	2	0	0	0	34
	Total of Territorial	341	126	71	6	50	34	7	62	58	24	3	11	6	33	38	70	0	0	0	599
Kangra	Baijnath	3	2	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
Kullu	Kullu	11	13	3	2	0	0	1	1	2	1	0	0	0	0	1	1	0	0	0	25
Mandi	Mandi	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Kangra	Palampur	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Kullu	Parvati	10	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Kinnaur	Kinnaur	21	15	2	0	4	2	0	0	5	0	0	0	1	6	6	0	1	42		42
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	4
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
	Total of Graziers/ Grassland User	59	47	5	4	4	2	2	1	10	3	0	0	0	1	7	10	3	2	0	101
	Grand Total	400	173	76	10	54	36	9	63	68	27	3	11	6	34	45	80	3	2	0	700

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation

(6)

District	Division	No of Respondents Interviewed (a)	Total															Total			
			Female																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	
Subsistence farmer	Commercial Farmer	Shepherd	Daily Wages Agricultural Labourer	Skilled Wage Labourer	Semi/Unskilled Wage Labourer	Service-Private Sector	Service Government	Trade Business	Cottage Industry	Other self-Employed	Housewife	Retiring pensioner and	Unemployed	Student not earning	Retired not earning	Vendor					
Bilaspur	Bilaspur	60	11	0	1	4	1	1	0	2	0	0	2	67	2	1	7	0	0	0	99
	Bharmour	20	0	1	0	0	0	0	0	3	0	0	0	21	0	4	2	0	0	0	31
Chamba	Chamba WL	20	1	1	0	1	0	0	0	0	0	0	0	22	3	1	3	0	0	0	32
	Pangi	20	0	0	0	4	0	0	0	1	0	0	0	23	0	0	7	0	0	0	35
Kinnaur	Kinnaur	40	13	5	0	6	0	0	1	4	0	0	0	34	1	1	9	0	0	0	74
	Sarahan WL	20	6	0	0	4	0	0	0	3	0	1	0	16	0	0	8	0	0	0	38
	Kullu	20	1	1	0	0	0	0	0	2	0	0	0	18	1	0	7	1	0	0	31
Kullu	Kullu WL	20	4	1	0	0	0	0	1	0	0	1	0	20	1	0	3	0	0	0	31
Lahaul &	Spiiti (W/L)	20	7	7	1	0	0	0	1	6	0	0	0	10	1	3	3	0	0	0	39
	Karsog	20	12	2	0	0	0	0	0	0	0	0	0	20	0	2	1	0	0	0	37
Mandi	Mandi	20	8	0	0	0	2	0	0	0	0	0	0	15	0	1	4	0	0	0	30
	Kotgarh	20	7	1	0	0	0	0	1	3	0	0	0	14	1	0	1	0	0	0	28
	Rampur	21	2	1	0	3	0	0	0	2	0	1	1	12	0	1	7	0	0	0	30
Shimla	Theog	20	2	6	0	0	0	0	2	2	0	0	1	21	1	0	2	0	0	0	37
	Total of Territorial	341	74	26	2	22	3	1	6	28	0	3	4	313	11	14	64	1	0	0	572
Kangra	Baijnath	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Kullu	Kullu	11	11	2	0	0	1	0	1	2	0	0	0	0	1	1	0	0	0	0	19
Mandi	Mandi	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Kinnaur	Kinnaur	21	8	0	0	1	1	0	1	3	0	0	0	13	0	3	7	0	0	0	37
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5	0	0	0	0	0	0	0	0	0	0	0	7	0	0	1	0	0	0	8
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2

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

3.5 Primary Occupation (7)

District	Division	No of Respondents Interviewed (a)	Total																	
			Division Total																	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
			Subsistence farmer	Commercial Farmer	Shepherd	Daily Wages Agricultural Labourer	Skilled Wage Labourer	Semi/Unskilled Wage Labourer	Service-Private Sector	Service-Government	Trade Business	Cottage Industry	Other self-Employed	Housewife	Retiring pensioner and	Unemployed	Student not earning	Retired not earning	Vendor	
Bilaspur	Bilaspur	60	24	3	1	15	11	3	27	13	6	0	8	67	11	4	16	0	0	209
	Bharmour	20	6	3	0	3	1	0	1	9	1	1	0	21	2	8	12	0	0	68
	Chamba WL	20	4	1	3	1	3	0	3	4	0	0	0	25	4	7	4	0	0	59
Chamba	Pangi	20	5	1	0	11	0	1	2	3	1	0	0	24	1	0	10	0	0	59
	Kinnaur	40	37	16	0	14	5	0	4	10	2	0	0	35	3	4	18	0	0	148
Kinnaur	Sarahan WL	20	16	0	2	7	2	0	4	8	1	1	0	17	4	2	13	0	0	77
	Kullu	20	7	13	1	5	1	0	1	3	2	0	1	18	1	1	11	1	0	66
Kullu	Kullu WL	20	14	7	0	5	0	1	9	0	4	1	0	20	1	0	4	0	0	66
Lahaul & Spiti (W/L)		20	12	15	1	2	0	0	1	15	0	0	0	10	2	10	11	0	0	79
	Karsog	20	27	6	0	1	2	0	1	5	0	0	1	20	1	7	5	0	0	76
Mandi	Mandi	20	17	5	0	1	4	2	3	1	1	0	0	15	0	2	11	0	0	62
	Kotgarh	20	13	7	0	2	2	1	10	3	2	1	1	14	7	1	4	0	0	68
	Rampur	21	15	5	0	5	2	0	0	2	3	2	2	12	0	4	11	0	0	63
Shimla	Theog	20	3	15	0	0	4	0	2	10	1	0	2	21	7	2	4	0	0	71
Total of Territorial		341	200	97	8	72	37	8	68	86	24	6	15	319	44	52	134	1	0	1,171
Kangra	Bainath	3	9	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	14
Kullu	Kullu	11	24	5	2	0	1	1	2	4	1	0	0	0	0	1	2	1	0	44
Mandi	Mandi	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Kangra	Palampur	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Kullu	Parvati	10	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Kinnaur	Kinnaur	21	23	2	0	5	3	0	1	8	0	0	0	13	1	9	13	0	1	79
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Nagarh	5	0	0	0	0	0	1	0	0	0	0	0	7	0	1	1	2	0	12
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	6	0	0	8
Total of Graziers/Grassland User		59	83	7	4	5	4	2	3	15	3	0	0	24	1	11	22	3	2	189
Grand Total		400	283	104	12	77	41	10	71	101	27	6	15	343	45	63	156	4	2	1,360

Source: Livelihood Survey, JICA Study Team (2017)

3.5 Primary Occupation (8)

District	Division	No of Respondents Interviewed (a)	% to the Division Total																	
			Division Total																	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
			Subsistence farmer	Commercial Farmer	Shepherd	Daily Wages Agricultural Labourer	Skilled Wage Labourer	Semi/Unskilled Wage Labourer	Service-Private Sector	Service-Government	Trade Business	Cottage Industry	Other self-Employed	Housewife	Retiring pensioner and	Unemployed	Student not earning	Retired not earning	Vendor	
Bilaspur	Bilaspur	60	11.5	1.4	0.5	7.2	5.3	1.4	12.9	6.2	2.9	0.0	3.8	32.1	5.3	1.9	7.7	0.0	0.0	100.0
	Bharmour	20	8.8	4.4	0.0	4.4	1.5	0.0	1.5	13.2	1.5	1.5	0.0	30.9	2.9	11.8	17.6	0.0	0.0	100.0
	Chamba WL	20	6.8	1.7	5.1	1.7	5.1	0.0	5.1	6.8	0.0	0.0	0.0	42.4	6.8	11.9	6.8	0.0	0.0	100.0
Chamba	Pangi	20	8.5	1.7	0.0	18.6	0.0	1.7	3.4	5.1	1.7	0.0	0.0	40.7	1.7	0.0	16.9	0.0	0.0	100.0
	Kinnaur	40	25.0	10.8	0.0	9.5	3.4	0.0	2.7	6.8	1.4	0.0	0.0	23.6	2.0	2.7	12.2	0.0	0.0	100.0
Kinnaur	Sarahan WL	20	20.8	0.0	2.6	9.1	2.6	0.0	5.2	10.4	1.3	1.3	0.0	22.1	5.2	2.6	16.9	0.0	0.0	100.0
	Kullu	20	10.6	19.7	1.5	7.6	1.5	0.0	1.5	4.5	3.0	0.0	1.5	27.3	1.5	1.5	16.7	1.5	0.0	100.0
Kullu	Kullu WL	20	21.2	10.6	0.0	7.6	0.0	1.5	13.6	0.0	6.1	1.5	0.0	30.3	1.5	0.0	6.1	0.0	0.0	100.0
Lahaul & Spiti (W/L)		20	15.2	19.0	1.3	2.5	0.0	0.0	1.3	19.0	0.0	0.0	0.0	12.7	2.5	12.7	13.9	0.0	0.0	100.0
	Karsog	20	35.5	7.9	0.0	1.3	2.6	0.0	1.3	6.6	0.0	0.0	1.3	26.3	1.3	9.2	6.6	0.0	0.0	100.0
Mandi	Mandi	20	27.4	8.1	0.0	1.6	6.5	3.2	4.8	1.6	1.6	0.0	0.0	24.2	0.0	3.2	17.7	0.0	0.0	100.0
	Kotgarh	20	19.1	10.3	0.0	2.9	2.9	1.5	14.7	4.4	2.9	1.5	1.5	20.6	10.3	1.5	5.9	0.0	0.0	100.0
	Rampur	21	23.8	7.9	0.0	7.9	3.2	0.0	0.0	3.2	4.8	3.2	3.2	19.0	0.0	6.3	17.5	0.0	0.0	100.0
Shimla	Theog	20	4.2	21.1	0.0	0.0	5.6	0.0	2.8	14.1	1.4	0.0	2.8	29.6	9.9	2.8	5.6	0.0	0.0	100.0
Total of Territorial		341	17.1	8.3	0.7	6.1	3.2	0.7	5.8	7.3	2.0	0.5	1.3	27.2	3.8	4.4	11.4	0.1	0.0	100.0
Kangra	Bainath	3	64.3	0.0	14.3	0.0	0.0	0.0	0.0	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Kullu	Kullu	11	54.5	11.4	4.5	0.0	2.3	2.3	4.5	9.1	2.3	0.0	0.0	0.0	0.0	2.3	4.5	2.3	0.0	100.0
Mandi	Mandi	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Kangra	Palampur	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Kullu	Parvati	10	96.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	100.0
Kinnaur	Kinnaur	21	29.1	2.5	0.0	6.3	3.8	0.0	1.3	10.1	0.0	0.0	0.0	16.5	1.3	11.4	16.5	0.0	1.3	100.0
Shimla	Theog	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0
Solan	Nagarh	5	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	58.3	0.0	8.3	8.3	16.7	0.0	100.0
Shimla	Kotgarh	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0
Solan	Baddi	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	75.0	0.0	0.0	100.0
Total of Graziers/Grassland User		59	43.9	3.7	2.1	2.6	2.1	1.1	1.6	7.9	1.6	0.0	0.0	12.7	0.5	5.8	11.6	1.6	1.1	100.0
Grand Total		400	20.8	7.6	0.9	5.7	3.0	0.7	5.2	7.4	2.0	0.4	1.1	25.2	3.3	4.6	11.5	0.3	0.1	100.0

Source: Livelihood Survey, JICA Study Team (2017)

3.6 Economic Activities Other than Primary Occupation

(1)

District	Division	No of Respondents Interviewed (a)	JFM																									
			Male									Female																
			1	2	3	4	5	6	7	8	9	Total	1	2	3	4	5	6	7	8	9	Total						
Weaving	Vegetable cultivating	Knitting	Tailoring	Backyard Poultry	Goat rearing	Mushroom cultivating	Small Shop	Selling milk and milk products	Weaving	Vegetable cultivating	Knitting	Tailoring	Backyard Poultry	Goat rearing	Mushroom cultivating	Small Shop	Selling milk and milk products											
Bilaspur	Bilaspur	60		2					4			2	2	10			3	1			2			1	3	10		
	Bharmour	20										2	2	4											1	1	1	
	Chamba WL	20											0	0												0	0	
Chamba	Pangi	20		1					1			1	3	4			1									1	1	
	Kinnaur	40		1					1				2	2			1									3	3	
Kinnaur	Sarahan WL	20											0	0												0	0	
	Kullu	20							3				3	1												1	1	
Kullu	Kullu WL	20											0	0												0	0	
Lahaul & Spiti(W/L)		20				1							1	1												0	0	
	Karsog	20		6					1			2	9	1	4											2	7	
Mandi	Mandi	20		6					1		1	8	2	2							1					3	3	
	Kotgarh	20							1			1	2	2												0	0	
	Rampur	21		2								2	2	2							1		1			2	2	
Shimla	Theog	20		3							1	4	4	3												3	3	
Total of Territorial		341	0	21	0	1	2	10	0	8	4	46	4	13	2	0	1	4	0	1	4	0	1	6	31	31		
Kangra	Bajnath	3																										
Kullu	Kullu	11																										
Mandi	Mandi	3																										
Kangra	Palampur	1																										
Kullu	Parvati	10																										
Kinnaur	Kinnaur	21																										
Shimla	Theog	1																										
Solan	Nalagarh	5																										
Shimla	Kotgarh	2																										
Solan	Baddi	2																										
Total of Graziers/ Grassland Users		59																										
Grand Total		400	0	21	0	1	2	10	0	8	4	46	4	13	2	0	1	4	0	1	4	0	1	6	31	31		

Source: Livelihood Survey, JICA Study Team (2017)

3.6 Economic Activities Other than Primary Occupation

(2)

District	Division	No of Respondents Interviewed (a)	Non JFM																								
			Male									Female															
			1	2	3	4	5	6	7	8	9	Total	1	2	3	4	5	6	7	8	9	Total					
Weaving	Vegetable cultivating	Knitting	Tailoring	Backyard Poultry	Goat rearing	Mushroom cultivating	Small Shop	Selling milk and milk products	Weaving	Vegetable cultivating	Knitting	Tailoring	Backyard Poultry	Goat rearing	Mushroom cultivating	Small Shop	Selling milk and milk products										
Bilaspur	Bilaspur	60											5	5													1
	Bharmour	20			1		1		1			1	3	3													0
	Chamba WL	20		1								3	4	4													0
Chamba	Pangi	20										1	1	1													0
	Kinnaur	40											0	4							1					1	6
Kinnaur	Sarahan WL	20	1	1			1	1	2	1		1	8	2												1	1
	Kullu	20						1				1	2	2													0
Kullu	Kullu WL	20							4			1	6	2											1	1	4
Lahaul & Spiti(W/L)		20		1								1	2	2						1						1	4
	Karsog	20		3					1			1	5	1	1						1					1	3
Mandi	Mandi	20	1									3	4	1							1					1	3
	Kotgarh	20		3								1	5	2												2	2
	Rampur	21							4			1	5	1												0	0
Shimla	Theog	20											0	1	2											3	3
Total of Territorial		341	2	10	1	2	4	13	1	6	11	50	10	3	0	2	1	2	0	1	2	0	1	8	27	27	
Kangra	Bajnath	3																									
Kullu	Kullu	11		5	2	2						1	10	5	1											2	8
Mandi	Mandi	3																									0
Kangra	Palampur	1							1																		0
Kullu	Parvati	10		4								9	5	7												7	7
Kinnaur	Kinnaur	21		4	3		2					2	11	4	1	4									1	12	
Shimla	Theog	1										3	3													2	2
Solan	Nalagarh	5										2	2	1												2	3
Shimla	Kotgarh	2										2	2													1	1
Solan	Baddi	2										2	2													2	2
Total of Graziers/ Grassland Users		59	13	5	2	2	1	5	0	0	12	40	15	4	4	0	0	4	0	0	4	0	0	10	37	37	
Grand Total		400	15	15	3	4	5	18	1	6	23	90	25	7	4	2	1	6	0	1	6	0	1	18	64	64	

Source: Livelihood Survey, JICA Study Team (2017)

4. Wages

4.1 Number of Persons Engaged in Different Types of Work (Male) (1)

District	Division	No of Respondents Interviewed	JFM												Total	Non JFM												Total
			1	2	3	4	5	6	7	8	9	10	11	12		1	2	3	4	5	6	7	8	9	10	11	12	
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Construction and Forest	UKN	Mix	ASHA	Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Construction and Forest	UKN	Mix	ASHA		
Bilaspur	Bilaspur	60	1		20										21			6									7	
	Bharmour	20	1		6										7			9									11	
	Chamba WL	20													0			8	2								10	
Chamba	Pangi	20			2	1	2								5			5		6							11	
	Kinnaur	40			6		1								7			7		1		0	1				9	
	Sarahan WL	20													0	1		10		3						14		
	Kullu	20		1	6										7		1	2									3	
Kullu	Kullu WL	20													0			2		1							3	
Lahaul & Spiti	Spiti WL	20													0			7									7	
	Karsog	20	2		7		1								10	1		1		2							5	
Mandi	Mandi	20	1		6		2								9	1		6	1								8	
	Kotgarh	20		2	1		3								7	1											1	
	Rampur	21		1	6		3								11			9									9	
	Theog	20	1		3										4			1		1							2	
Total of Territorial		341	6	4	63	1	12	0	0	1	1	0	0	0	88	4	3	73	3	14	0	2	0	1	0	100		
Kangra	Bajnath	3																		1	1						2	
	Kullu	11														1	2	5		3				1			12	
Mandi	Mandi	3														1		2									3	
Kangra	Palampur	1																									0	
Kullu	Parvati	10														6				4							10	
Kinnaur	Kinnaur	21														4		7	1			1	1	1			15	
	Theog	1																									1	
Solan	Nalagarh	5														1				1							2	
Shimla	Kotgarh	2																									0	
Solan	Baddi	2																									0	
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	0	0	0	0	14	2	14	1	9	1	1	1	1	1	0	45		
Grand Total		400	6	4	63	1	12	0	0	1	1	0	0	0	88	18	5	87	4	23	1	1	3	1	2	145		

Source: Livelihood Survey, JICA Study Team (2017)

4.1 Number of Persons Engaged in Different Types of Work (Male) (2)

District	Division	No of Respondents Interviewed	Total												Total	%												Total
			1	2	3	4	5	6	7	8	9	10	11	12		1	2	3	4	5	6	7	8	9	10	11	12	
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Construction and Forest	UKN	Mix	ASHA	Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Construction and Forest	UKN	Mix	ASHA		
Bilaspur	Bilaspur	60	1	0	26	0	0	0	0	1	0	0	0	0	28	3.6	0.0	92.9	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0	100.0	
	Bharmour	20	1	2	15	0	0	0	0	0	0	0	0	0	18	5.6	11.1	83.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Chamba WL	20	0	0	8	2	0	0	0	0	0	0	0	0	10	0.0	0.0	80.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Chamba	Pangi	20	0	0	7	1	8	0	0	0	0	0	0	0	16	0.0	0.0	43.8	6.3	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Kinnaur	40	0	0	13	0	2	0	0	1	0	0	0	0	16	0.0	0.0	81.3	0.0	12.5	0.0	6.3	0.0	0.0	0.0	0.0	100.0	
	Sarahan WL	20	1	0	10	0	3	0	0	0	0	0	0	0	14	7.1	0.0	71.4	0.0	21.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Kullu	20	0	2	8	0	0	0	0	0	0	0	0	0	10	0.0	20.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Kullu WL	20	0	0	2	0	1	0	0	0	0	0	0	0	3	0.0	0.0	66.7	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Lahaul & Spiti	Spiti WL	20	0	0	7	0	0	0	0	0	0	0	0	0	7	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Karsog	20	3	0	8	0	3	0	0	0	0	1	0	0	15	20.0	0.0	53.3	0.0	20.0	0.0	0.0	0.0	0.0	6.7	0.0	100.0	
Mandi	Mandi	20	2	0	12	1	2	0	0	0	0	0	0	0	17	11.8	0.0	70.6	5.9	11.8	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Kotgarh	20	1	2	1	0	3	0	0	1	0	0	0	0	8	12.5	25.0	12.5	0.0	37.5	0.0	0.0	12.5	0.0	0.0	0.0	100.0	
	Rampur	21	0	1	15	0	3	0	0	0	1	0	0	0	20	0.0	5.0	75.0	0.0	15.0	0.0	0.0	5.0	0.0	0.0	0.0	100.0	
	Theog	20	1	0	4	0	1	0	0	0	0	0	0	0	6	16.7	0.0	66.7	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Total of Territorial		341	10	7	136	4	26	0	0	3	1	1	0	0	188	5.3	3.7	72.3	2.1	13.8	0.0	1.6	0.5	0.5	0.0	100.0		
Kangra	Bajnath	3	0	0	0	0	1	1	0	0	0	0	0	0	2	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Kullu	11	0	2	5	0	3	0	0	0	0	1	0	0	12	8.3	16.7	41.7	0.0	25.0	0.0	0.0	8.3	0.0	0.0	0.0	100.0	
Mandi	Mandi	3	1	0	2	0	0	0	0	0	0	0	0	0	3	33.3	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	0.0	
Kullu	Parvati	10	6	0	0	0	4	0	0	0	0	0	0	0	10	60.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Kinnaur	Kinnaur	21	4	0	7	1	0	0	1	1	1	0	0	0	15	26.7	0.0	46.7	6.7	0.0	0.0	6.7	6.7	0.0	0.0	0.0	100.0	
	Theog	1	1	0	0	0	0	0	0	0	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Solan	Nalagarh	5	1	0	0	0	1	0	0	0	0	0	0	0	2	50.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	0.0	
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	0.0	
Total of Graziers/ Grassland		59	14	2	14	1	9	1	1	1	1	1	0	0	45	31.1	4.4	31.1	2.2	20.0	2.2	2.2	2.2	2.2	0.9	0.0	100.0	
Grand Total		400	24	9	150	5	35	1	1	4	2	2	0	0	233	10.3	3.9	64.4	2.1	15.0	0.4	0.4	1.7	0.9	0.0	0.0	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

4.2 Place of Work (Male)

District	Division	No of Respondents Interviewed	JFM													Non JFM						Total					
			1	2	3	4	5	6	Total	1	2	3	4	5	6	Total	1	2	3	4	5	6	Total				
			Within Village	Nearby Village	Distant Village	Nearby Town/city	in & around the village	UKN	Within Village	Nearby Village	Distant Village	Nearby Town/city	in & around the village	UKN	Within Village	Nearby Village	Distant Village	Nearby Town/city	in & around the village	UKN							
Bilaspur	Bilaspur	60	15	5	1		21	3	4						7	18	9	1	0	0	0	28					
	Bharmour	20	6				7	10						1	11	16	0	0	0	2	0	18					
	Chamba WL	20					0	7	2				2	11	7	2	0	0	2	0	11						
Chamba	Pangi	20	2	3			5	5	4	2				11	7	7	2	0	0	0	16						
	Kinnaur	40	6				7	7	1				1	9	13	1	0	0	2	0	16						
Kinnaur	Sarahan WL	20					0	11	3					14	11	3	0	0	0	0	14						
	Kullu	20	6		1		7	3						3	9	0	1	0	0	0	10						
Kullu	Kullu WL	20					0	1				2		3	1	0	0	0	2	0	3						
Lahaul & Spiti	Spiti WL	20					0	4		1				5	4	0	1	0	0	0	5						
	Karsog	20	4	2	3		10	1	1				3	5	5	3	3	0	4	0	15						
Mandi	Mandi	20	8				8	7					8	15	0	0	0	1	0	0	16						
	Kotgarh	20	1	2	2		7	1					11	11	2	2	0	3	0	8							
	Rampur	21	9			1	11	9					9	18	0	0	1	1	0	20							
	Theog	20	3		1		4	2					2	5	0	1	0	0	0	6							
Total of Territorial		341	60	12	8	1	6	0	87	70	15	3	0	11	0	99	130	27	11	1	17	0	186				
Kangra	Bajnath	3					0						2	2	0	0	0	0	2	0	2						
Kullu	Kullu	11					0	6	4	1		1		12	6	4	1	0	1	0	12						
Mandi	Mandi	3					0	3						3	3	0	0	0	0	0	3						
Kangra	Palampur	1					0							0	0	0	0	0	0	0	0						
Kullu	Parvati	10					0	7	1	1		1		10	7	1	1	0	1	0	10						
Kinnaur	Kinnaur	21					0	11	3			1		15	11	3	0	0	1	0	15						
Shimla	Theog	1					0	1					1	1	0	0	0	0	0	0	1						
Solan	Nalagarh	5					0	2						2	2	0	0	0	0	0	2						
Shimla	Kotgarh	2					0							0	0	0	0	0	0	0	0						
Solan	Baddi	2					0							0	0	0	0	0	0	0	0						
Total of Graziers/ Grassland		59					0	30	8	2	0	5	0	45	30	8	2	0	5	0	45						
Grand Total		400	60	12	8	1	6	0	87	100	23	5	0	16	0	144	160	35	13	1	22	0	231				

Source: Livelihood Survey, JICA Study Team (2017)

4.3 Average Number of Days Worked (Male) (1)

District	Division	No of Respondents Interviewed	JFM													Non JFM												
			1	2	3	4	5	6	7	8	9	10	11	12	Total	1	2	3	4	5	6	7	8	9	10	11	12	Total
			Agriculture	Orchard	Constructi on	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Constructi on	Constructi on & Agriculture	Agricultur e and Orchard and Constructi on and Forest	UKN	Mix	ASHA	Agriculture	Orchard	Constructio n	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Constructio n	Constructio n & Agriculture	Agriculture and Orchard and Constructio n and Forest	UKN	Mix	ASHA		
Bilaspur	Bilaspur	60	150		83									86			132				20					116		
	Bharmour	20	20		87									77			91									75		
	Chamba WL	20														6	71	150								87		
Chamba	Pangi	20			125	150	200							160			96		171							137		
	Kinnaur	40			69		180							85		120	33	150	200		100					59		
	Sarahan WL	20															55	150								80		
	Kullu	20			50									57			52									45		
	Kullu WL	20														30	175		250							200		
Lahaul & Spiti	Spiti WL	20															74									74		
	Karsog	20	85		67		150							79		20	40		105				220			98		
Mandi	Mandi	20			62		303							122		120										128		
	Kotgarh	20		115	100		173			30				126		200										200		
	Rampur	21		60	44		52							62												54		
	Theog	20	13		68									55			100		30							65		
Total of Territorial		341	71	98	72	150	168			30	200			88		115	14	81	110	155	60		220		93			
Kangra	Bajnath	3																	310	240						275		
Kullu	Kullu	11												240		250	70		345			90				779		
Mandi	Mandi	3												30			100									177		
Kangra	Palampur	1																										
Kullu	Parvati	10												172					288							218		
Kinnaur	Kinnaur	21												133			74	150		80	80	200				104		
Shimla	Theog	1														60										60		
Solan	Nalagarh	5												120					60							90		
Shimla	Kotgarh	2																										
Solan	Baddi	2																										
Total of Graziers/ Grassland		59														144	250	76	150	284	240	80	200	90		153		
Grand Total		400	71	98	72	150	168			30	200			88		137	73	80	120	205	240	80	67	200	155	111		

Source: Livelihood Survey, JICA Study Team (2017)

4.3 Average Number of Days Worked (Male) (2)

District	Division	No of Respondents Interviewed	Total												Total
			1	2	3	4	5	6	7	8	9	10	11	12	
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA	
Bilaspur	Bilaspur	60	150		94										93
	Bharmour	20	20	6	89					20					76
	Chamba WL	20			71	150									87
Chamba	Pangi	20			104	150	178								144
	Kinnaur	40			49	190				100					70
Kinnaur	Sarahan WL	20	120		55	150									80
	Kullu	20		65	50										53
Kullu	Kullu WL	20			175		250								200
Lahaul & Spiti	Spiti WL	20			74										74
	Karsog	20	63		63	120						220			85
Mandi	Mandi	20	120		104	30	303								125
	Kotgarh	20	200	115	100	173			30						135
	Rampur	21		60	50		52				200				58
Shimla	Theog	20	13		76	30									58
Total of Territorial		341	90	62	77	120	161		50	200	220				91
Kangra	Bajnath	3					310	240							275
Kullu	Kullu	11	240	250	70		345				90				179
Mandi	Mandi	3	30		100										77
Kangra	Palampur	1													
Kullu	Parvati	10	172				288								218
Kinnaur	Kinnaur	21	133		74	150			80	80	200				104
Shimla	Theog	1	60												60
Solan	Nalagarh	5	120				60								90
Shimla	Kotgarh	2													
Solan	Baddi	2													
Total of Graziers/ Grassland		59	144	250	76	150	284	240	80	80	200	90			153
Grand Total		400	123	85	77	126	192	240	80	58	200	155			103

Source: Livelihood Survey, JICA Study Team (2017)

4.4 Average Wages by Work Type (Male) (1)

District	Division	No of Respondents Interviewed	JFM												Non JFM												Total	
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12		
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA	Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA		
Bilaspur	Bilaspur	60	175		209										207			206										219
	Bharmour	20	300		228										238		300	246										256
	Chamba WL	20																245	300									256
Chamba	Pangi	20			262	250	300								275			238		300								272
	Kinnaur	40			230		400								259			220		300			500					260
Kinnaur	Sarahan WL	20													300			259		367								285
	Kullu	20		400	278											400		156										237
Kullu	Kullu WL	20																300		500								367
Lahaul & Spiti	Spiti WL	20																230										230
	Karsog	20	340		273		350								294	150		400		500								470
Mandi	Mandi	20			171		230								186	300		232	200					800				236
	Kotgarh	20		300	300		367			175					311	250												250
	Rampur	21		200	195		267								225			172										172
Shimla	Theog	20	180		157										163			170		400								285
Total of Territorial		341	267	300	222	250	309			175	300				241	250	333	229	267	364		400		800				261
Kangra	Bajnath	3																										
Kullu	Kullu	11														180		174		285								206
Mandi	Mandi	3																175										177
Kangra	Palampur	1																										
Kullu	Parvati	10													413				175									311
Kinnaur	Kinnaur	21													258			218	250			250	250	250				237
Shimla	Theog	1													300													300
Solan	Nalagarh	5													300				300									300
Shimla	Kotgarh	2																										
Solan	Baddi	2																										
Total of Graziers/ Grassland		59													315		196	250	233		250	250	250					246
Grand Total		400													297	333	224	263	325		250	350	250	800				259

Source: Livelihood Survey, JICA Study Team (2017)

4.4 Average Wages by Work Type (Male) (2)

District	Division	No of Respondents Interviewed	Total												Total								
			1 Agriculture	2 Orchard	3 Constructi on	4 Forest Plantation Activities	5 Agriculture and Orchard	6 Goat Rearing	7 Orchard & Constructi on	8 Constructi on & Agricultur e	9 Agricultur e and Orchard and Constructi on and Forest	10 UKN	11 Mix	12 ASHA									
Bilaspur	Bilaspur	60	175		208							300											210
	Bharmour	20	300		238																		249
	Chamba WL	20		300	245		300																256
Chamba	Pangi	20			245		250		300														273
	Kinnaur	40			224		350					500											259
Kinnaur	Sarahan WL	20	300		259		367																285
	Kullu	20		400	248																		278
	Kullu WL	20			300																		367
Lahaul & Spiti	Spiti W/L	20			230																		230
	Karsog	20	276		289		450										800						352
Mandi	Mandi	20	300		201		230																211
	Kotgarh	20	250	300	300		367					175											303
	Rampur	21	200		181		267										300						201
Shimla	Theog	20	180		160		490																203
Total of Territorial		341	259	314	226	263	339	0	0	325	300	800	0	0	0	0	0	0	0	0	0	253	
Kangra	Bajinath	3																					
Kullu	Kullu	11			174		285																206
Mandi	Mandi	3	180		175																		177
Kangra	Palampur	1																					
Kullu	Parvati	10	413				175																311
Kinnaur	Kinnaur	21	258		218		250			250	250	250											237
Shimla	Theog	1	300																				300
Solan	Nalagarh	5	300				300																300
Shimla	Kotgarh	2																					
Solan	Baddi	2																					
Total of Graziers/ Grassland		59	315	314	196	250	233	250	250	250	250	800	0	0	0	0	0	0	0	0	0	246	
Grand Total		400	290	314	223	260	319	250	306	275	800	0	0	0	0	0	0	0	0	0	0	252	

Source: Livelihood Survey, JICA Study Team (2017)

4.5 Average Total Wages Earned (Male) (1)

District	Division	No of Respondents Interviewed	JFM												Non JFM												Total	
			1 Agriculture	2 Orchard	3 Constructi on	4 Forest Plantation Activities	5 Agriculture and Orchard	6 Goat Rearing	7 Orchard & Constructi on	8 Constructi on & Agricultur e	9 Agricultur e and Orchard and Constructi on and Forest	10 UKN	11 Mix	12 ASHA	1 Agriculture	2 Orchard	3 Constructi on	4 Forest Plantation Activities	5 Agriculture and Orchard	6 Goat Rearing	7 Orchard & Constructi on	8 Constructi on & Agricultur e	9 Agricultur e and Orchard and Constructi on and Forest	10 UKN	11 Mix	12 ASHA		
Bilaspur	Bilaspur	60	26,250		20,340									20,621			29,967										26,400	
	Bharmour	20	6,000		20,271									18,232			24,364										20,261	
	Chamba WL	20												19,239		1,800	45,000										24,392	
Chamba	Pangi	20			33,700	37,500	60,000							44,980			22,618		51,200								38,208	
	Kinnaur	40			16,771		7,200							15,176			7,358		60,000				50,000				17,945	
Kinnaur	Sarahan WL	20												36,000			21,681		50,833								28,951	
	Kullu	20		40,000	16,502									19,859			6,460										8,307	
	Kullu WL	20															52,500		125,000								76,667	
Lahaul & Spiti	Spiti W/L	20															19,285										19,285	
	Karsog	20	39,290		21,089		52,500							27,870		3,000	16,000		65,000					176,000			65,000	
Mandi	Mandi	20			10,652		68,325							25,070		36,000	36,300		6,000								32,475	
	Kotgarh	20		26,000	30,000		62,667			5,250				39,321		50,000											50,000	
	Rampur	21		12,000	8,455		14,167							15,021			9,992										9,992	
Shimla	Theog	20	2,340		10,283									8,298			17,000		15,000								16,000	
Total of Territorial		341	22,634	26,000	17,771	37,500	45,571			5,250				22,890			31,250	5,200	20,978	32,000	56,407				27,500	176,000	0	28,028
Kangra	Bajinath	3																75,000	35,000								55,000	
Kullu	Kullu	11												6,000		12,368		115,500						30,000			36,338	
Mandi	Mandi	3												5,400		17,500											13,467	
Kangra	Palampur	1																										
Kullu	Parvati	10												48,900				41,844									46,078	
Kinnaur	Kinnaur	21												32,850		16,050	37,500			20,000	20,000	50,000					24,750	
Shimla	Theog	1												18,000													18,000	
Solan	Nalagarh	5												36,000				18,000									27,000	
Shimla	Kotgarh	2																										
Solan	Baddi	2																										
Total of Graziers/ Grassland		59															35,014	14,942	37,500	61,422	35,000	20,000	20,000	50,000	30,000	30,000	32,935	
Grand Total		400	22,634	26,000	17,771	37,500	45,571			5,250				22,890			34,178	5,200	19,984	33,375	58,231	35,000	20,000	25,000	50,000	103,000	28,561	

Source: Livelihood Survey, JICA Study Team (2017)

4.5 Average Total Wages Earned (Male) (2)

District	Division	No of Respondents Interviewed	Total												Total
			1	2	3	4	5	6	7	8	9	10	11	12	
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA	
Bilaspur	Bilaspur	60	26,250		22,562										22,066
	Bharmour	20	6,000	1,800	22,727										19,472
	Chamba WL	20			19,239	45,000									24,392
Chamba	Pangi	20			25,784	37,500	53,400								40,324
	Kinnaur	40			11,280		33,600			50,000					16,837
Kinnaur	Sarahan WL	20	36,000		21,681		50,833								28,951
	Kullu	20		26,000	13,991										16,393
Kullu	Kullu WL	20			52,500		125,000								76,667
Lahaul & Spiti	Spiti W/L	20			19,285										19,285
	Karsog	20	27,193		20,453		60,833					176,000			40,247
Mandi	Mandi	20	36,000		23,476	6,000	68,325								28,773
	Kotgarh	20	50,000	26,000	30,000		62,667			5,250					40,656
	Rampur	21		12,000	9,377		14,167				60,000				12,758
	Theog	20	2,340		11,963		15,000								10,865
Total of Territorial		341	26,463	17,086	19,483	33,375	51,406			20,083	60,000	176,000			25,627
Kangra	Bajjnath	3					75,000	35,000							55,000
Kullu	Kullu	11	6,000		12,368		115,500					30,000			36,538
Mandi	Mandi	3	5,400		17,500										13,467
Kangra	Palampur	1													
Kullu	Parvati	10	48,900				41,844								46,078
Kinnaur	Kinnaur	21	32,850		16,050	37,500			20,000	20,000	50,000				24,750
Shimla	Theog	1	18,000												18,000
Solan	Nalagarh	5	36,000				18,000								27,000
Shimla	Kotgarh	2													
Solan	Baddi	2													
Total of Graziers/ Grassland		59	35,014		14,942	37,500	61,422	35,000	20,000	20,000	50,000	30,000			32,935
Grand Total		400	31,668	17,086	19,051	34,200	53,763	35,000	20,000	20,063	55,000	103,000			26,985

Source: Livelihood Survey, JICA Study Team (2017)

4.6 Number of Persons Engaged in Different Types of Work (Female) (1)

District	Division	No of Respondents	JFM												Non JFM												Total			
			1	2	3	4	5	6	7	8	9	10	11	12	Total	1	2	3	4	5	6	7	8	9	10	11		12	Total	
			Agriculture	Orchard	Construction	Plantation	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA		Agriculture	Orchard	Construction	Plantation	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA			
Bilaspur	Bilaspur	60			5										5			6											6	
	Bharmour	20			3										3															0
	Chamba WL	20													0			12											12	
Chamba	Pangi	20			8										8			9											9	
	Kinnaur	40	3		9			1							14			12											12	
Kinnaur	Sarahan WL	20													0			11											12	
	Kullu	20													0	1		2											2	
Kullu	Kullu WL	20													0			7											7	
Lahaul & Spiti	Spiti W/L	20													0			4											6	
	Karsog	20	1		3			2							6			7											7	
Mandi	Mandi	20			4										4			7											7	
	Kotgarh	20													1			7											0	
	Rampur	21	2		7										9			3			2								5	
	Theog	20			5										5			4											5	
Total of Territorial		341	6	0	44	0	0	3	0	0	0	0	0	1	55	2	2	84	0	2	0	0	0	0	0	0	0	90		
Kangra	Bajjnath	3													2			2											4	
Kullu	Kullu	11													1			4			3				1				9	
Mandi	Mandi	3													1			1											2	
Kangra	Palampur	1																											0	
Kullu	Parvati	10													4			1			3								8	
Kinnaur	Kinnaur	21													1			10			1						2		15	
Shimla	Theog	1																				1							0	
Solan	Nalagarh	5																											0	
Shimla	Kotgarh	2																											0	
Solan	Baddi	2																											0	
Total of Graziers/ Grassland		59														9	0	18	0	7	0	1	0	0	0	1	2	0	38	
Grand Total		400	6	0	44	0	0	3	0	0	0	0	0	1	55	11	2	102	0	9	0	1	0	0	1	2	0	128		

Source: Livelihood Survey, JICA Study Team (2017)

4.6 Number of Persons Engaged in Different Types of Work (Female) (2)

District	Division	No of Respondents	Total												Total	
			1 Agriculture	2 Orchard	3 Construction	4 Plantation	5 Culture and Or	6 Joint Rearing	7 & Construction	8 Construction & Ag	9 gard and Co	10 UKN	11 Mix	12 ASHA		
Bilaspur	Bilaspur	60	0	0	11	0	0	0	0	0	0	0	0	0	0	11
	Bharmour	20	0	0	3	0	0	0	0	0	0	0	0	0	0	3
	Chamba WL	20	0	0	12	0	0	0	0	0	0	0	0	0	0	12
Chamba	Pangi	20	0	0	17	0	0	0	0	0	0	0	0	0	0	17
	Kinnaur	40	3	0	21	0	1	0	0	0	0	1	0	0	0	26
	Sarahan WL	20	1	0	11	0	0	0	0	0	0	0	0	0	0	12
	Kullu	20	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	Kullu WL	20	0	0	7	0	0	0	0	0	0	0	0	0	0	7
Lahaul & Spiti	Spiti(W/L)	20	0	2	4	0	0	0	0	0	0	0	0	0	0	6
	Karsog	20	1	0	10	0	2	0	0	0	0	0	0	0	0	13
Mandi	Mandi	20	0	0	11	0	0	0	0	0	0	0	0	0	0	11
	Kotgarh	20	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	Rampur	21	2	0	10	0	2	0	0	0	0	0	0	0	0	14
	Theog	20	1	0	9	0	0	0	0	0	0	0	0	0	0	10
Total of Territorial		341	8	2	128	0	5	0	0	0	0	1	1	0	0	145
Kangra	Bajjnath	3	2	0	2	0	0	0	0	0	0	0	0	0	0	4
Kullu	Kullu	11	1	0	4	0	3	0	0	0	0	1	0	0	0	9
Mandi	Mandi	3	1	0	1	0	0	0	0	0	0	0	0	0	0	2
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10	4	0	1	0	3	0	0	0	0	0	0	0	0	8
Kinnaur	Kinnaur	21	1	0	10	0	1	0	1	0	0	0	2	0	0	15
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of Graziers/ Grassland		59	9	0	18	0	7	0	1	0	0	1	2	0	0	38
Grand Total		400	17	2	146	0	12	0	1	0	0	2	3	0	0	183

Source: Livelihood Survey, JICA Study Team (2017)

4.7 Place of Work (Female)

District	Division	No of Respondents Interviewed	JFM						Non JFM						Total								
			1	2	3	4	5	6	Total	1	2	3	4	5	6	Total	1	2	3	4	5	6	Total
			Within Village	Nearby Village	Distant Village	Nearby Town/city	in & around the village	UKN		Within Village	Nearby Village	Distant Village	Nearby Town/city	in & around the village	UKN		Within Village	Nearby Village	Distant Village	Nearby Town/city	in & around the village	UKN	
Bilaspur	Bilaspur	60	2	2	1			5	3	2	1				6	5	4	2	0	0	0	0	11
	Bharmour	20	3					3							0	3	0	0	0	0	0	0	3
	Chamba WL	20						0	12					12	12	0	0	0	0	0	0	0	12
Chamba	Pangi	20	8					8	9					9	17	0	0	0	0	0	0	0	17
	Kinnaur	40	11		3			14	10	1	1			12	21	1	4	0	0	0	0	0	26
	Sarahan WL	20						0	10	2				12	10	2	0	0	0	0	0	0	12
	Kullu	20						0	2					2	2	0	0	0	0	0	0	0	2
	Kullu WL	20						0	5	2				7	5	2	0	0	0	0	0	0	7
Lahaul & Spiti	Spiti(W/L)	20						0	4					4	4	0	0	0	0	0	0	0	4
	Karsog	20	4	2				6						0	4	2	0	0	0	0	0	0	6
Mandi	Mandi	20	4					4	7					7	11	0	0	0	0	0	0	0	11
	Kotgarh	20	1					1	5	2				7	6	2	0	0	0	0	0	0	8
	Rampur	21	8					8	5					5	13	0	0	0	0	0	0	0	13
	Theog	20	5					5	4	1				5	9	1	0	0	0	0	0	0	10
Total of Territorial		341	46	4	4	0	0	54	76	10	2	0	0	88	122	14	6	0	0	0	0	142	
Kangra	Bajjnath	3						0	2	1	1			4	2	1	1	0	0	0	0	0	4
Kullu	Kullu	11						0	5	1	2		1	9	5	1	2	0	1	0	0	0	9
Mandi	Mandi	3						0	2					2	2	0	0	0	0	0	0	0	2
Kangra	Palampur	1						0						0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10						0	5	1	1			8	5	1	1	0	1	0	0	0	8
Kinnaur	Kinnaur	21						0	11	3			1	15	11	3	0	0	1	0	0	0	15
Shimla	Theog	1						0						0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5						0	0					0	0	0	0	0	0	0	0	0	0
Shimla	Kotgarh	2						0	0					0	0	0	0	0	0	0	0	0	0
Solan	Baddi	2						0	0					0	0	0	0	0	0	0	0	0	0
Total of Graziers/ Grassland		59						0	25	6	4	0	3	38	25	6	4	0	3	0	0	38	
Grand Total		400	46	4	4	0	0	54	101	16	6	0	3	126	147	20	10	0	3	0	3	180	

Source: Livelihood Survey, JICA Study Team (2017)

4.8 Average Number of Days Worked (Female) (1)

District	Division	No of Respondents Interviewed	JFM												Non JFM													
			1	2	3	4	5	6	7	8	9	10	11	12	Total	1	2	3	4	5	6	7	8	9	10	11	12	Total
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Construction and Forest	UKN	Mix	ASHA		Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Construction and Forest	UKN	Mix	ASHA	
Bilaspur	Bilaspur	60			70										70			38									38	
	Bharmour	20			40										40												40	
	Chamba WL	20																41									41	
Chamba	Pangj	20			94										94			88									88	
	Kinnaur	40	12		39			14						14	30			55									55	
	Sarahan WL	20														120		40									47	
	Kullu	20																55									55	
Kullu	Kullu WL	20																47									47	
Lahaul & Spiti	Spiti W/L	20															240	18								92		
	Karsog	20	14		31			18							24			20									20	
Mandi	Mandi	20			46										46			71									71	
	Kotgarh	20											30		30												30	
	Rampur	21	150		56										77			53		260							136	
Shimla	Theog	20			54										54			65									58	
Total of Territorial		341	59		57			16						14	30	54	35	78	240	49	260						59	
Kangra	Bajnath	3															303		100								201	
Kullu	Kullu	11														240		78		345				90			186	
Mandi	Mandi	3																100									100	
Kangra	Palampur	1																										
Kullu	Parvati	10														135		60		202							151	
Kinnaur	Kinnaur	21														65		65		300		75			100		86	
Shimla	Theog	1																										
Solan	Nalagarh	5																										
Shimla	Kotgarh	2																										
Solan	Baddi	2																										
Total of Graziers/ Grassland		59														181		74		277		75			90	100	137	
Grand Total		400	59		57			16						14	30	54	161	240	54	273		75		90	100	82		

Source: Livelihood Survey, JICA Study Team (2017)

4.8 Average Number of Days Worked (Female) (2)

District	Division	No of Respondents Interviewed	Total												Total
			1	2	3	4	5	6	7	8	9	10	11	12	
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Construction and Forest	UKN	Mix	ASHA	
Bilaspur	Bilaspur	60			52										52
	Bharmour	20			40										40
	Chamba WL	20			41										41
Chamba	Pangj	20			90										90
	Kinnaur	40	12		48		14					14			41
	Sarahan WL	20	120		40										47
	Kullu	20			55										55
Kullu	Kullu WL	20			47										47
Lahaul & Spiti	Spiti W/L	20		240	18										92
	Karsog	20	14		23		18								22
Mandi	Mandi	20			62										62
	Kotgarh	20										30			30
	Rampur	21	150		55		260								98
Shimla	Theog	20	35		58										56
Total of Territorial		341	63	240	58	0	114	0	0	0	0	14	30	0	57
Kangra	Bajnath	3			100										100
Kullu	Kullu	11		240	78		345					90			186
Mandi	Mandi	3			100										100
Kangra	Palampur	1													
Kullu	Parvati	10		135	60		202								151
Kinnaur	Kinnaur	21		65	65		300		75				100		86
Shimla	Theog	1													
Solan	Nalagarh	5													
Shimla	Kotgarh	2													
Solan	Baddi	2													
Total of Graziers/ Grassland		59	181		74		277		75			90	100		137
Grand Total		400	122	240	55	0	209	0	75	0	0	52	77	0	73

Source: Livelihood Survey, JICA Study Team (2017)

4.9 Average Wages by Type of Work (Female) (1)

District	Division	No of Respondents	JFM												Non JFM											
			1	2	3	4	5	6	7	8	9	10	11	12	Total	1	2	3	4	5	6	7	8	9	10	11
			Agriculture	Orchard	Construction	Plantation	Apiculture and O	Goat Rearing	rd & Construction & Ag	ard and Co	UKN	Mix	ASHA		Agriculture	Orchard	Construction	Plantation	Apiculture and O	Goat Rearing	rd & Construction & Ag	ard and Co	UKN	Mix	ASHA	
Bilaspur	Bilaspur	60			172									172												168
	Bharmour	20			213									213												213
	Chamba WL	20															206									206
Chamba	Pangi	20			214									214												214
	Kinnaur	40	213		208			213					213	210												211
Kinnaur	Sarahan WL	20													150											199
	Kullu	20																								165
Kullu	Kullu WL	20																								183
Lahaul & Spiti	Spiti(W/L)	20														230										219
	Karsog	20	179		200			175						188												178
Mandi	Mandi	20			170									170												171
	Kotgarh	20										175		175												175
	Rampur	21	185		169									173					210							178
Shimla	Theog	20			158									158		250										172
Total of Territorial		341	198		190			187					213	175	190	200	230	193		210						195
Kangra	Bainath	3														170										170
Kullu	Kullu	11																	185							178
Mandi	Mandi	3																	180							180
Kangra	Palampur	1																								178
Kullu	Parvati	10													200				150							178
Kinnaur	Kinnaur	21													230				33		250			225		216
Shimla	Theog	1																								178
Solan	Nalagarh	5																								178
Shimla	Kotgarh	2																								178
Solan	Baddi	2																								178
Total of Graziers/ Grassland		59													200		204		141		250			225		196
Grand Total		400	198		190			187					213	175	190	200	230	196		210				225		195

Source: Livelihood Survey, JICA Study Team (2017)

4.9 Average Wages by Type of Work (Female) (2)

District	Division	No of Respondents	Total												
			1	2	3	4	5	6	7	8	9	10	11	12	Total
			Agriculture	Orchard	Construction	Plantation	Apiculture and O	Goat Rearing	rd & Construction & Ag	ard and Co	UKN	Mix	ASHA		
Bilaspur	Bilaspur	60			168									168	
	Bharmour	20			213									213	
	Chamba WL	20			206									206	
Chamba	Pangi	20			214									214	
	Kinnaur	40	213		210			213					213	211	
Kinnaur	Sarahan WL	20	150		203									199	
	Kullu	20			165									165	
Kullu	Kullu WL	20			183									183	
Lahaul & Spiti	Spiti(W/L)	20			213									219	
	Karsog	20	179		179			175						178	
Mandi	Mandi	20			171									171	
	Kotgarh	20									175			175	
	Rampur	21	185		170			210						178	
Shimla	Theog	20	250		162									172	
Total of Territorial		341	199		192			196					213	175	193
Kangra	Bainath	3	170		170									170	
Kullu	Kullu	11			175			185						178	
Mandi	Mandi	3			180									180	
Kangra	Palampur	1												178	
Kullu	Parvati	10	200		170			150						178	
Kinnaur	Kinnaur	21	230		228			33		250			225	216	
Shimla	Theog	1												178	
Solan	Nalagarh	5												178	
Shimla	Kotgarh	2												178	
Solan	Baddi	2												178	
Total of Graziers/ Grassland		59	200		204			141		250			225	196	
Grand Total		400	199		193			169		250			213	208	194

Source: Livelihood Survey, JICA Study Team (2017)

4.10 Average Total Wages Earned (Female) (1)

District	Division	No of Respondents Interviewed	JFM												Non JFM													
			1	2	3	4	5	6	7	8	9	10	11	12	Total	1	2	3	4	5	6	7	8	9	10	11	12	Total
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA		Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA	
Bilaspur	Bilaspur	60			12,100										12,100			6,075									6,075	
	Bharmour	20			8,520										8,520												8,520	
	Chamba WL	20																	8,675								8,675	
Chamba	Pangi	20			20,473										20,473				18,852								18,852	
	Kinnaur	40	2,627		8,045		2,982					2,982			6,161				11,901								11,901	
	Sarahan WL	20														18,000			8,353								9,157	
	Kullu	20																	9,100								9,100	
	Kullu WL	20																	9,490								9,490	
Lahaul & Spiti	Spiti W/L	20															55,200		3,887								20,992	
	Karsog	20	2,506		6,631		3,088								4,762				3,400								3,400	
Mandi	Mandi	20			7,863										7,863				12,523								12,523	
	Kotgarh	20										5,250			5,250													
	Rampur	21	28,500		9,075										13,392												27,262	
	Theog	20			7,699										7,699	8,750			11,288								10,780	
Total of Territorial		341	11,231		10,809		3,052					2,982	5,250		10,189	13,375	55,200		9,842	54,600						11,947		
Kangra	Bajjnath	3														23,700			17,000								20,350	
Kullu	Kullu	11														6,000			13,675		79,000			30,000			31,088	
Mandi	Mandi	3																	18,000								18,000	
Kangra	Palampur	1																										
Kullu	Parvati	10															15,675		10,200		20,333						16,738	
Kinnaur	Kinnaur	21														14,950			14,635		10,000					21,250	15,503	
Shimla	Theog	1																										
Solan	Nalagarh	5																										
Shimla	Kotgarh	2																										
Solan	Baddi	2																										
Total of Graziers/Grassland		59														16,381			14,625	38,167			18,750		30,000	21,250	19,849	
Grand Total		400	11,231		10,809		3,052					2,982	5,250		10,189	15,780	55,200		10,695	42,275			18,750		30,000	21,250	14,223	

Source: Livelihood Survey, JICA Study Team (2017)

4.10 Average Total Wages Earned (Female) (2)

District	Division	No of Respondents Interviewed	Total												Total
			1	2	3	4	5	6	7	8	9	10	11	12	
			Agriculture	Orchard	Construction	Forest Plantation Activities	Agriculture and Orchard	Goat Rearing	Orchard & Construction	Construction & Agriculture	Agriculture and Orchard and Forest	UKN	Mix	ASHA	
Bilaspur	Bilaspur	60			8,814										8,814
	Bharmour	20			8,520										8,520
	Chamba WL	20			8,675										8,675
Chamba	Pangi	20			19,615										19,615
	Kinnaur	40	2,627		10,166		2,982					2,982			8,686
	Sarahan WL	20	18,000		8,353										9,157
	Kullu	20			9,100										9,100
	Kullu WL	20			9,490										9,490
Lahaul & Spiti	Spiti W/L	20		55,200	3,887										20,992
	Karsog	20	2,506		4,369		3,088								4,029
Mandi	Mandi	20			10,828										10,828
	Kotgarh	20										5,250			5,250
	Rampur	21	28,500		9,064		54,600								18,346
	Theog	20			9,294										9,240
Total of Territorial		341	11,767	55,200	10,177		23,671					2,982	5,250		11,275
Kangra	Bajjnath	3			17,000										20,350
Kullu	Kullu	11		6,000	13,675		79,000					30,000			31,088
Mandi	Mandi	3			18,000										18,000
Kangra	Palampur	1													
Kullu	Parvati	10		15,675	10,200		20,333								16,738
Kinnaur	Kinnaur	21		14,950	14,635		10,000				18,750			21,250	15,503
Shimla	Theog	1													
Solan	Nalagarh	5													
Shimla	Kotgarh	2													
Solan	Baddi	2													
Total of Graziers/Grassland		59	16,381		14,625		38,167				18,750		30,000	21,250	19,849
Grand Total		400	14,074	55,200	10,730		31,578				18,750		16,491	15,917	12,990

Source: Livelihood Survey, JICA Study Team (2017)

5. Housing Condition
5.1 Type of Housing

District	Division	No of Respondents Interviewed	JFM				Non-JFM				Total				% to Total			
			1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
			Pakka	Kaccha	Mix		Pakka	Kaccha	Mix		Pakka	Kaccha	Mix		Pakka	Kaccha	Mix	
Bilaspur	Bilaspur	60	19	12	9	40	12	4	4	20	31	16	13	60	51.7	26.7	21.7	100.0
Bilaspur	Bharmour	20	5	6		11			8	1	9	5	14	20	25.0	70.0	5.0	100.0
Bilaspur	Chamba WL	20				0	6	10	4	20	6	10	4	20	30.0	50.0	20.0	100.0
Chamba	Pang	20		9	1	10	1	7	2	10	1	16	3	20	5.0	80.0	15.0	100.0
Kinnaur	Kinnaur	40	4	12	3	19	13	5	3	21	17	17	6	40	42.5	42.5	15.0	100.0
Kinnaur	Sarahan WL	20				0	1	13	6	20	1	13	6	20	5.0	65.0	30.0	100.0
Kullu	Kullu	20	1	8	1	10	6	2	2	10	7	10	3	20	35.0	50.0	15.0	100.0
Kullu	Kullu WL	20				0	15	5		20	15	5	0	20	75.0	25.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20				0	4	15	1	20	4	15	1	20	20.0	75.0	5.0	100.0
Mandi	Karsog	20	8	1	1	10	5	1	4	10	13	2	5	20	65.0	10.0	25.0	100.0
Mandi	Mandi	20	1	8		9	1	8	2	11	2	16	2	20	10.0	80.0	10.0	100.0
Mandi	Kotgarh	20	5	3	2	10	7	2	1	10	12	5	3	20	60.0	25.0	15.0	100.0
Mandi	Rampur	21	1	9		10		8	3	11	1	17	3	21	4.8	81.0	14.3	100.0
Shimla	Theog	20	7	2	2	11	6	3		9	13	5	2	20	65.0	25.0	10.0	100.0
Total of Territorial		341	51	70	19	140	77	91	33	201	128	161	52	341	37.5	47.2	15.2	100.0
Kangra	Bajnath	3								0	2	1		3	66.7	33.3	0.0	100.0
Kullu	Kullu	11								0	7	3	1	11	63.6	27.3	9.1	100.0
Mandi	Mandi	3								0	1	1	1	3	33.3	33.3	33.3	100.0
Kangra	Palampur	1								0	1			1	100.0	0.0	0.0	100.0
Kullu	Parvati	10								0	5	4	1	10	50.0	40.0	10.0	100.0
Kinnaur	Kinnaur	21								0	5	14	2	21	23.8	66.7	9.5	100.0
Shimla	Theog	1								0	1			1	0.0	100.0	0.0	100.0
Solan	Nalagarh	5								0			5	0.0	100.0	0.0	100.0	
Shimla	Kotgarh	2								0	0	2		2	0.0	100.0	0.0	100.0
Solan	Baddi	2								0	2			2	100.0	0.0	0.0	100.0
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	23	31	5	59	39.0	52.5	8.5	100.0
Grand Total		400	51	70	19	140	77	91	33	201	128	161	52	400	37.5	47.2	15.2	100.0

Source: Livelihood Survey, JICA Study Team (2017)

5.2 Materials Used for Houses
Wall

District	Division	No of Respondents Interviewed	JFM						Non-JFM						Total						% to Total									
			1	2	3	4	5	6	Total	1	2	3	4	5	6	Total	1	2	3	4	5	6	Total	1	2	3	4	5	6	Total
			Mud & Clay	Brick or Stone	Brick & Mud	Brick, Mud, Stone Mix	Wood	Wood and Stone		Mud & Clay	Brick or Stone	Brick & Mud	Brick, Mud, Stone Mix	Wood	Wood and Stone		Mud & Clay	Brick or Stone	Brick & Mud	Brick, Mud, Stone Mix	Wood	Wood and Stone		Mud & Clay	Brick or Stone	Brick & Mud	Brick, Mud, Stone Mix	Wood	Wood and Stone	
Bilaspur	Bilaspur	60	14	25	5		1	45	6	16	1			23	20	41	6	0	1	0	68	29.4	60.3	8.8	0.0	1.5	0.0	100.0		
Bilaspur	Bharmour	20	6	8				14	7	3			2	1	13	13	11	0	0	2	1	27	48.1	40.7	0.0	0.0	7.4	3.7	100.0	
Bilaspur	Chamba WL	20						0	14	13			1	28	14	13	0	0	1	0	28	50.0	46.4	0.0	0.0	3.6	0.0	100.0		
Chamba	Pang	20	8	4				12	9	3		1		13	17	7	0	1	0	0	25	68.0	28.0	0.0	4.0	0.0	0.0	100.0		
Kinnaur	Kinnaur	40	6	9	2	1	4	22	5	12	4		1	22	11	21	6	1	5	0	44	25.0	47.7	13.6	2.3	11.4	0.0	100.0		
Kinnaur	Sarahan WL	20						0	13	7		2	7	29	13	7	0	2	7	0	29	44.8	24.1	0.0	6.9	24.1	0.0	100.0		
Kullu	Kullu	20	6	3	1	1	2	13	3	9				12	9	12	1	1	2	0	25	36.0	48.0	4.0	4.0	8.0	0.0	100.0		
Kullu	Kullu WL	20						0	5	13	2		1	21	5	13	2	0	1	0	21	23.8	61.9	9.5	0.0	4.8	0.0	100.0		
Lahaul & Spiti	Spiti(W/L)	20						0	15	6	1			22	15	6	1	0	0	0	22	68.2	27.3	4.5	0.0	0.0	0.0	100.0		
Mandi	Karsog	20	1	9				10	5	9	1			15	6	18	1	0	0	0	25	24.0	72.0	4.0	0.0	0.0	0.0	100.0		
Mandi	Mandi	20	5	1	2	1		9	6	3	2	1		12	11	4	4	2	0	0	21	52.4	19.0	19.0	9.5	0.0	0.0	100.0		
Mandi	Kotgarh	20	3	7		1		11	2	7	3	1		13	5	14	3	2	0	0	24	20.8	58.3	12.5	8.3	0.0	0.0	100.0		
Mandi	Rampur	21	8	2	1		1	12	7	1	3		1	12	15	3	4	4	2	0	24	62.5	12.5	16.7	0.0	8.3	0.0	100.0		
Shimla	Theog	20	3	8			1	12	2	6	1			9	5	14	1	0	1	0	21	23.8	66.7	4.8	0.0	4.8	0.0	100.0		
Total of Territorial		341	60	76	11	4	9	160	99	108	18	5	13	1	244	159	184	29	9	22	1	404	39.4	45.5	7.2	2.2	5.4	0.2	100.0	
Kangra	Bajnath	3							1	3				4	1	3	0	0	0	0	4	25.0	75.0	0.0	0.0	0.0	0.0	100.0		
Kullu	Kullu	11							5	6				11	5	6	0	0	0	0	11	45.5	54.5	0.0	0.0	0.0	0.0	100.0		
Mandi	Mandi	3							2	1				2	2	0	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	100.0		
Kangra	Palampur	1							0	0				0	0	0	0	0	0	0	0	-	-	-	-	-	-	100.0		
Kullu	Parvati	10							5	4		1		10	5	4	0	1	0	0	10	50.0	40.0	0.0	10.0	0.0	0.0	100.0		
Kinnaur	Kinnaur	21							11	10			2	23	11	10	0	0	2	0	23	47.8	43.5	0.0	0.0	8.7	0.0	100.0		
Shimla	Theog	1							0	0				0	0	0	0	0	0	0	0	-	-	-	-	-	-	100.0		
Solan	Nalagarh	5							4				1	5	4	0	0	0	1	0	5	80.0	0.0	0.0	0.0	20.0	0.0	100.0		
Shimla	Kotgarh	2							2					2	2	0	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	100.0		
Solan	Baddi	2							2					2	0	2	0	0	0	0	2	0.0	100.0	0.0	0.0	0.0	0.0	100.0		
Total of Graziers/ Grassland		59	0	0	0	0	0	0	30	25	0	1	3	0	59	30	25	0	1	3	0	59	50.8	42.4	0.0	1.7	5.1	0.0	100.0	
Grand Total		400	60	76	11	4	9	160	129	133	18	6	16	1	303	189	209	29	10	25	1	463	40.8	45.1	6.3	2.2	5.4	0.2	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

Roof

District	Division	No of Respondents Interviewed	JFM					Total	Non JFM					Total	Total					Total	% to Total					Total
			1	2	3	4	5		1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	
			RCC/ Cement	GI sheet/ asbestos	Tiled	Grass&/ or Bamboo	Mix		RCC/ Cement	GI sheet/ asbestos	Tiled	Grass&/ or Bamboo	Mix		RCC/ Cement	GI sheet/ asbestos	Tiled	Grass&/ or Bamboo	Mix		RCC/ Cement	GI sheet/ asbestos	Tiled	Grass&/ or Bamboo	Mix	
Bilaspur	Bilaspur	60	21	4	1	6	11	43	14	1	2	2	5	24	35	5	3	8	16	67	52.2	7.5	4.5	11.9	23.9	100.0
	Bharmour	20	4				7	11	1				9	10	5	0	0	16	21	23.8	0.0	0.0	0.0	76.2	100.0	
	Chamba WL	20						0	7	4			17	28	7	4	0	17	28	25.0	14.3	0.0	0.0	60.7	100.0	
Chamba	Pangi	20		2			8	10		3			7	10	0	5	0	15	20	0.0	25.0	0.0	0.0	75.0	100.0	
	Kinnaur	40	1	14	1		4	20	8	7			7	22	9	21	1	0	11	42	21.4	50.0	2.4	0.0	26.2	100.0
Kinnaur	Sarahan WL	20					0	2	15				7	24	2	15	0	0	7	24	8.3	62.5	0.0	0.0	29.2	100.0
	Kullu	20		3			8	11	4	1	1		5	11	4	4	1	0	13	22	18.2	18.2	4.5	0.0	59.1	100.0
Kullu	Kullu WL	20					0	10	8			1	4	23	10	8	0	1	4	23	43.5	34.8	0.0	4.3	17.4	100.0
Lahaul & Spiti	Spiti(W/L)	20					0	3				2	15	20	3	0	0	2	15	20	15.0	0.0	0.0	10.0	75.0	100.0
	Karsog	20	8		1		1	10	7	1	1		2	11	15	1	2	0	3	21	71.4	4.8	9.5	0.0	14.3	100.0
Mandi	Mandi	20				4	5	9	1		1	3	5	10	1	0	1	7	10	19	5.3	0.0	5.3	36.8	52.6	100.0
	Kotgarh	20	4	6			1	11	5	5			1	11	9	11	0	0	2	22	40.9	50.0	0.0	0.0	9.1	100.0
	Rampur	21	1	8			1	11	1	4		4	2	11	2	12	0	5	3	22	9.1	54.5	0.0	22.7	13.6	100.0
Shimla	Theog	20	7				4	11	4	2	1		2	9	11	2	1	0	6	20	55.0	10.0	5.0	0.0	30.0	100.0
Total of Territorial		341	46	37	3	11	50	147	67	51	6	12	88	224	113	88	9	23	138	30.5	23.7	2.4	6.2	37.2	100.0	
Kangra	Bajjnath	3							2					2	2	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu	11							4	1	1		1	7	4	1	1	0	7	57.1	14.3	14.3	0.0	14.3	100.0	
Mandi	Mandi	3							1				1	2	1	0	0	0	1	2	50.0	0.0	0.0	0.0	50.0	100.0
Kangra	Palampur	1							1				1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Parvati	10							4	4		1		9	4	4	0	1	0	9	44.4	44.4	0.0	11.1	0.0	100.0
Kinnaur	Kinnaur	21							8	8	1	4	4	25	8	8	1	4	4	25	32.0	32.0	4.0	16.0	16.0	100.0
Shimla	Theog	1												0	0	0	0	0	0	-	-	-	-	-	0.0	
Solan	Nalagarh	5								2		2	1	5	0	2	0	2	1	5	0.0	40.0	0.0	40.0	10.0	100.0
Shimla	Kotgarh	2									1	1	2	0	0	0	1	1	2	0.0	0.0	0.0	50.0	50.0	100.0	
Solan	Baddi	2								2			2	0	0	2	0	0	0	2	0.0	100.0	0.0	0.0	0.0	100.0
Total of Graziers/ Grassland		59							20	17	2	8	8	55	20	17	2	8	8	55	36.4	30.9	3.6	14.5	14.5	100.0
Grand Total		400	46	37	3	11	50	147	87	68	8	20	96	279	133	105	11	31	146	426	31.2	24.6	2.6	7.3	34.3	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Floor

District	Division	No of Respondents Interviewed	JFM					Total	Non JFM					Total	Total					Total	% to Total					Total
			1	2	3	4	5		1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	
			Concrete/ marble	Tiled	Mud or clay	Cemebt	Mix		Concrete/ marble	Tiled	Mud or clay	Cemebt	Mix		Concrete/ marble	Tiled	Mud or clay	Cemebt	Mix		Concrete/ marble	Tiled	Mud or clay	Cemebt	Mix	
Bilaspur	Bilaspur	60	23	7	14	2	46	12	5	4	1	22	35	12	18	3	0	68	51.5	17.6	26.5	4.4	0.0	100.0		
	Bharmour	20	3	3	5		12	1	1	7		1	10	4	4	12	0	2	22	18.2	18.2	54.5	0.0	9.1	100.0	
	Chamba WL	20					0	9	2	11		1	23	9	2	11	0	1	23	39.1	8.7	47.8	0.0	4.3	100.0	
Chamba	Pangi	20	1		8	1	10	4	1	5			10	5	1	13	1	0	20	25.0	5.0	65.0	5.0	0.0	100.0	
	Kinnaur	40	5	1	8	2	5	21	8	2	5	2	4	21	13	3	13	4	9	42	31.0	7.1	31.0	9.5	21.4	100.0
Kinnaur	Sarahan WL	20					0	8		5	2	9	24	8	0	5	2	9	24	33.3	0.0	20.8	8.3	37.5	100.0	
	Kullu	20	2		4		4	10	5	1	2	1	1	10	7	1	6	1	5	20	35.0	5.0	30.0	5.0	25.0	100.0
Kullu	Kullu WL	20					0	11	4	4		5	24	11	4	4	0	5	24	45.8	16.7	16.7	0.0	20.8	100.0	
Lahaul & Spiti	Spiti(W/L)	20					0	4		14	1		19	4	0	14	1	0	19	21.1	0.0	73.7	5.3	0.0	100.0	
	Karsog	20	7	3			10	8		2	1	2	13	15	3	2	1	2	23	65.2	13.0	8.7	4.3	8.7	100.0	
Mandi	Mandi	20	1		8		9	2		7	2	1	12	3	0	15	2	1	21	14.3	0.0	71.4	9.5	4.8	100.0	
	Kotgarh	20	8		2		10	7		1	1	2	11	15	1	2	1	2	21	71.4	4.8	9.5	4.8	9.5	100.0	
	Rampur	21	4		4		2	10	2		8		10	6	0	12	0	2	20	30.0	0.0	60.0	0.0	10.0	100.0	
Shimla	Theog	20	9	1	2	1	14	5	1	4			10	14	2	6	1	1	24	58.3	8.3	25.0	4.2	4.2	100.0	
Total of Territorial		341	63	15	55	6	13	152	86	18	78	11	26	219	149	33	133	17	39	371	40.2	8.9	35.8	4.6	10.5	100.0
Kangra	Bajjnath	3							2				2	2	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Kullu	Kullu	11							1	2			1	6	1	2	2	0	1	6	16.7	33.3	33.3	0.0	16.7	100.0
Mandi	Mandi	3							1				1	0	0	1	0	0	1	0.0	0.0	100.0	0.0	0.0	100.0	
Kangra	Palampur	1							0				0	0	0	0	0	0	0	-	-	-	-	-	0.0	
Kullu	Parvati	10							2	1	1	1	1	6	2	1	1	1	6	33.3	16.7	16.7	16.7	16.7	100.0	
Kinnaur	Kinnaur	21							7	3	6	5	3	24	7	3	6	5	3	24	29.2	12.5	25.0	20.8	12.5	100.0
Shimla	Theog	1							0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	0.0	
Solan	Nalagarh	5								5			5	0	0	5	0	0	5	0.0	0.0	100.0	0.0	0.0	100.0	
Shimla	Kotgarh	2								2			2	0	0	2	0	0	2	0.0	0.0	100.0	0.0	0.0	100.0	
Solan	Baddi	2								2			2	2	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Total of Graziers/ Grassland		59							12	6	17	6	7	48	12	6	17	6	7	48	25.0	12.5	35.4	12.5	14.6	100.0
Grand Total		400	63	15	55	6	13	152	98	24	95	17	33	267	161	39	150	23	46	419	38.4	9.3	35.8	5.5	11.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

5.3 Household Amenities
Electricity

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total				% to Total		
			1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3
			Regular Supply	Irregular/Poor Supply	No Connection		Regular Supply	Irregular/Poor Supply	No Connection		Regular Supply	Irregular/Poor Supply	No Connection		Regular Supply	Irregular/Poor Supply	No Connection
Bilaspur	Bilaspur	60	40			40	19	1		20	59	1	0	60	98.3	1.7	0.0
	Bharmour	20	9	2		11	8			8	17	2	0	19	89.5	10.5	0.0
	Chamba WL	20				0	18	1		19	18	1	0	19	94.7	5.3	0.0
Chamba	Pangi	20	9	1		10	7	3		10	16	4	0	20	80.0	20.0	0.0
	Kinnaur	40	18	1		19	19	1		20	37	2	0	39	94.9	5.1	0.0
Kinnaur	Sarahan WL	20				0	19	1		20	19	1	0	20	95.0	5.0	0.0
	Kullu	20	10			10	10			10	20	0	0	20	100.0	0.0	0.0
Kullu	Kullu WL	20				0	20			20	20	0	0	20	100.0	0.0	0.0
Lahaul & Spiti	Spiti(W/L)	20				0	16	4		20	16	4	0	20	80.0	20.0	0.0
	Karsog	20	9			9	10			10	19	0	0	19	100.0	0.0	0.0
Mandi	Mandi	20	9			9	9		1	10	18	0	1	19	94.7	0.0	5.3
	Kotgarh	20	10			10	10			10	20	0	0	20	100.0	0.0	0.0
	Rampur	21	10			10	10			10	20	0	0	20	100.0	0.0	0.0
Shimla	Theog	20	9		1	10	7			7	16	0	1	17	94.1	0.0	5.9
Total of Territorial		341	133	4	1	138	182	11	1	194	315	15	2	332	94.9	4.5	0.6
Kangra	Bajnath	3					3			3	3	1		4	75.0	25.0	0.0
Kullu	Kullu	11					10			10	7	3	1	11	63.6	27.3	9.1
Mandi	Mandi	3					1	2		3	1	1	1	3	33.3	33.3	33.3
Kangra	Palampur	1					1			1	1			1	100.0	0.0	0.0
Kullu	Parvati	10					5	3	1	9	5	4	1	10	50.0	40.0	10.0
Kinnaur	Kinnaur	21					21			21	5	14	2	21	23.8	66.7	9.5
Shimla	Theog	1					1			1		1		1	0.0	100.0	0.0
Solan	Nalagarh	5					3	1	1	5		5		5	0.0	100.0	0.0
Shimla	Kotgarh	2					2		2	2		2		2	0.0	100.0	0.0
Solan	Baddi	2					2			2	2			2	100.0	0.0	0.0
Total of Graziers/ Grassland		59	0	0	0	0	46	6	5	57	24	31	5	60	40.0	51.7	8.3
Grand Total		400	133	4	1	138	228	17	6	251	361	21	7	389	92.8	5.4	1.8

Source: Livelihood Survey, JICA Study Team (2017)

Drinking Water (The place they collect water)

District	Division	No of Respondents	JFM					Non JFM					Total					% to Total				
			1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total
			Inside the House	Near the House	Far from the House	Natural Source		Inside the House	Near the House	Far from the House	Natural Source		Inside the House	Near the House	Far from the House	Natural Source		Inside the House	Near the House	Far from the House	Natural Source	
Bilaspur	Bilaspur	60	8	25	4		37	5	12	2		20	13	37	6	1	57	22.8	64.9	10.5	1.8	100.0
	Bharmour	20	1	7	3		11	2	6			8	3	13	3	0	19	15.8	68.4	15.8	0.0	100.0
	Chamba WL	20					0	5	13	1		19	5	13	1	0	19	26.3	68.4	5.3	0.0	100.0
Chamba	Pangi	20		10			10		3	4	1	8	0	13	4	1	18	0.0	72.2	22.2	5.6	100.0
	Kinnaur	40	9	8	2		19	5	8	2	2	17	14	16	4	2	36	38.9	44.4	11.1	5.6	100.0
Kinnaur	Sarahan WL	20					0	5	12	4		21	5	12	4	0	21	23.8	57.1	19.0	0.0	100.0
	Kullu	20		7	3		10	3	6		1	10	3	13	3	1	20	15.0	65.0	15.0	5.0	100.0
Kullu	Kullu WL	20					0	10	9		1	20	10	9	0	1	20	50.0	45.0	0.0	5.0	100.0
Lahaul & Spiti	Spiti(W/L)	20					0	1	17	2		20	1	17	2	0	20	5.0	85.0	10.0	0.0	100.0
	Karsog	20	2	7	1		10		9	1		10	2	16	2	0	20	10.0	80.0	10.0	0.0	100.0
Mandi	Mandi	20		8	1		9	2	8			10	2	16	1	0	19	10.5	84.2	5.3	0.0	100.0
	Kotgarh	20	1	8			9	6	5			11	7	13	0	0	20	35.0	65.0	0.0	0.0	100.0
	Rampur	21	1	9			10		10			10	1	19	0	0	20	5.0	95.0	0.0	0.0	100.0
Shimla	Theog	20	1	4	2	1	8	3	4	1	1	9	4	8	3	2	17	23.5	47.1	17.6	11.8	100.0
Total of Territorial		341	23	93	16	1	133	47	122	17	7	193	70	215	33	8	326	21.5	66.0	10.1	2.5	100.0
Kangra	Bajnath	3						2	1			3	2	1	0	0	3	66.7	33.3	0.0	0.0	100.0
Kullu	Kullu	11						4	2	1		7	4	2	1	0	7	57.1	28.6	14.3	0.0	100.0
Mandi	Mandi	3							2			2	0	2	0	0	2	0.0	100.0	0.0	0.0	100.0
Kangra	Palampur	1						0	0	0		0	0	0	0	0	0					100.0
Kullu	Parvati	10						2		3	2	7	2	0	3	2	7	28.6	0.0	42.9	28.6	100.0
Kinnaur	Kinnaur	21						16	6			22	16	6	0	0	22	72.7	27.3	0.0	0.0	100.0
Shimla	Theog	1							1			1	0	0	1	0	1	0.0				100.0
Solan	Nalagarh	5						1	1	2	1	5	1	1	2	1	5	20.0	20.0	40.0	20.0	100.0
Shimla	Kotgarh	2							1	2	1	1	0	0	1	0	1	0.0	0.0	100.0	0.0	100.0
Solan	Baddi	2							2	0	2	0	2	0	0	0	2	0.0	100.0	0.0	0.0	100.0
Total of Graziers/ Grassland		59						25	14	8	3	50	25	14	8	3	50	50.0	28.0	16.0	6.0	100.0
Grand Total		400	23	93	16	1	133	72	136	25	10	243	95	229	41	11	376	25.3	60.9	10.9	2.9	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Drinking Water (Sources) (1)

District	Division	No of Respondents	JFM							Non JFM							Total									
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Hand Pump	Covered Well	Uncovered Well	Spring/Natural	Rain Water	Government Tap	Private Tap		Hand Pump	Covered Well	Uncovered Well	Spring/Natural	Rain Water	Government Tap	Private Tap		Hand Pump	Covered Well	Uncovered Well	Spring/Natural	Rain Water	Government Tap	Private Tap	
Bilaspur	Bilaspur	60	15	1	1	2	3	25	47	3	1	4		1	18		27	18	2	5	2	4	43	0	74	
	Bharmour	20				2		7	9				2	7		9	0	0	0	4	0	14	0	18		
	Chamba WL	20							0				5	14		19	0	0	0	5	0	14	0	19		
Chamba	Pangi	20				2		8	10				1	6		7	0	0	0	3	0	14	0	17		
	Kinnaur	40				1		16	17				8	12		20	0	0	0	9	0	28	0	37		
Kinnaur	Sarahan WL	20							0	1			3	18		23	1	0	0	3	1	18	0	23		
	Kullu	20				2		10	12				2	8	2	12	0	0	0	4	0	18	2	24		
	Kullu WL	20							0				1	16		17	0	0	0	1	0	16	0	17		
Lahaul & Spiti	Spiti(W/L)	20							0	7			2	13		23	7	0	0	2	1	13	0	23		
	Karsog	20	4					9	13	2				5		7	6	0	0	0	14	0	20			
Mandi	Mandi	20						9	9					1	8		9	0	0	0	1	17	0	18		
	Kotgarh	20						9	9				3	2	7		12	0	0	3	2	16	0	21		
	Rampur	21			1	5		7	13				3	1	8		12	0	0	1	8	1	15	0	25	
Shimla	Theog	20	5			1		8	14	1				9		10	6	0	0	1	0	17	0	24		
Total of Territorial		341	24	1	2	15	3	108	0	153	14	1	4	30	7	149	2	207	38	2	6	45	10	257	2	360
Kangra	Bajnath	3														0	0	0	0	0	0	0	0	0		
Kullu	Kullu	11								1				3		4	8	1	0	3	0	4	0	8		
Mandi	Mandi	3											1	1		2	0	0	0	1	0	1	0	2		
Kangra	Palampur	1												1		1	0	0	0	0	1	0	1	0		
Kullu	Parvati	10								1	1			4	2	8	1	1	0	4	0	2	0	8		
Kinnaur	Kinnaur	21								1				1	18	20	1	0	0	1	0	18	0	20		
Shimla	Theog	1											1			1	0	0	0	1	0	0	0	1		
Solan	Nalagarh	5										2		2	1	5	0	2	0	2	0	1	0	5		
Shimla	Kotgarh	2								1				1		2	1	0	0	1	0	0	0	2		
Solan	Baddi	2										2				2	0	2	0	0	0	0	0	2		
Total of Graziers/ Grassland		59									4	5	0	13	0	27	0	49	4	5	0	13	0	27	0	49
Grand Total		400	24	1	2	15	3			153	18	6	4	43	7	176	2	256	42	7	6	58	10	284	2	409

Source: Livelihood Survey, JICA Study Team (2017)

Drinking Water (Sources) (2)

District	Division	No of Respondents	% to Total							Total
			1	2	3	4	5	6	7	
			Hand Pump	Covered Well	Uncovered Well	Spring/Natural	Rain Water	Government Tap	Private Tap	
Bilaspur	Bilaspur	60	24.3	2.7	6.8	2.7	5.4	58.1	0.0	100.0
	Bharmour	20	0.0	0.0	0.0	22.2	0.0	77.8	0	100.0
	Chamba WL	20	0.0	0.0	0.0	26.3	0.0	73.7	0	100.0
Chamba	Pangi	20	0.0	0.0	0.0	17.6	0.0	82.4	0	100.0
	Kinnaur	40	0.0	0.0	0.0	24.3	0.0	75.7	0	100.0
Kinnaur	Sarahan WL	20	4.3	0.0	0.0	13.0	4.3	78.3	0	100.0
	Kullu	20	0.0	0.0	0.0	16.7	0.0	75.0	8.3	100.0
Kullu	Kullu WL	20	0.0	0.0	0.0	5.9	0.0	94.1	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20	30.4	0.0	0.0	8.7	4.3	56.5	0.0	100.0
	Karsog	20	30.0	0.0	0.0	0.0	0.0	70.0	0.0	100.0
Mandi	Mandi	20	0.0	0.0	0.0	0.0	5.6	94.4	0.0	100.0
	Kotgarh	20	0.0	0.0	0.0	14.3	9.5	76.2	0.0	100.0
	Rampur	21	0.0	0.0	4.0	32.0	4.0	60.0	0.0	100.0
Shimla	Theog	20	25.0	0.0	0.0	4.2	0.0	70.8	0.0	100.0
Total of Territorial		341	10.6	0.6	1.7	12.5	2.8	71.4	0.6	100.0
Kangra	Bajnath	3	-	-	-	-	-	-	-	0.0
Kullu	Kullu	11	12.5	0.0	0.0	37.5	0.0	50.0	0	100.0
Mandi	Mandi	3	0.0	0.0	0.0	50.0	0.0	50.0	0	100.0
Kangra	Palampur	1	0.0	0.0	0.0	0.0	0.0	100.0	0	100.0
Kullu	Parvati	10	12.5	12.5	0.0	50.0	0.0	25.0	0	100.0
Kinnaur	Kinnaur	21	5.0	0.0	0.0	5.0	0.0	90.0	0	100.0
Shimla	Theog	1	0.0	0.0	0.0	100.0	0.0	0.0	0	100.0
Solan	Nalagarh	5	0.0	40.0	0.0	40.0	0.0	20.0	0	100.0
Shimla	Kotgarh	2	50.0	0.0	0.0	50.0	0.0	0.0	0	100.0
Solan	Baddi	2	0.0	100.0	0.0	0.0	0.0	0.0	0	100.0
Total of Graziers/ Grassland		59	8.2	10.2	0.0	26.5	0.0	55.1	0	100.0
Grand Total		400	10.3	1.7	1.5	14.2	2.4	69.4	0.5	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Cattle Shed (1)

District	Division	No of Respondents Interviewed	JFM						Non JFM						Total								
			1 Yard with Roof/ Shed	2 Yard without Shed	3 No Yard	4 Ground Floor of the House	5 RiverSide	6 Rented Cattle Shed	Total	1 Yard with Roof/ Shed	2 Yard without Shed	3 No Yard	4 Ground Floor of the House	5 RiverSide	6 Rented Cattle Shed	Total	1 Yard with Roof/ Shed	2 Yard without Shed	3 No Yard	4 Ground Floor of the House	5 RiverSide	6 Rented Cattle Shed	Total
Bilaspur	Bilaspur	60	33		1				34	17	1					18	50	1	1	0	0	0	52
	Bharmour	20	5	3		1			9	6						6	11	3	0	1	0	0	15
	Chamba WL	20							0	13			4			17	13	0	0	4	0	0	17
Chamba	Pangi	20	9						9	6					1	7	15	0	0	0	0	1	16
	Kinnaur	40	8						8	9	5					14	17	5	0	0	0	0	22
	Sarahan WL	20							0	15			1			16	15	0	0	1	0	0	16
	Kullu	20	7	1			1		9	5		1	1			7	12	1	1	2	0	0	16
	Kullu WL	20							0	13	1	2	1			17	13	1	2	1	0	0	17
Lahaul & Spiti	Spiti(W/L)	20							0	11	1	1				13	11	1	1	0	0	0	13
	Karsog	20	10						10	6	1		2			9	16	1	0	2	0	0	19
Mandi	Mandi	20	8	1					9	9	2					11	17	3	0	0	0	0	20
	Kotgarh	20	6		1			1	8	2	1	4	1			8	8	1	5	1	0	1	16
	Rampur	21	6	1					7	6	2					8	12	3	0	0	0	0	15
Shimla	Theog	20	9	2					11	5	1	1				7	14	3	1	0	0	0	18
Total of Territorial		341	101	8	2	2	0	1	114	123	15	9	10	0	1	158	224	23	11	12	0	2	272
Kangra	Bainath	3								2						2	2	0	0	0	0	0	2
Kullu	Kullu	11								9						9	9	0	0	0	0	0	9
Mandi	Mandi	3								3						3	3	0	0	0	0	0	3
Kangra	Palampur	1									1					1	0	0	1	0	0	0	1
Kullu	Parvati	10								4		3				7	4	0	3	0	0	0	7
Kinnaur	Kinnaur	21								13		2				15	13	0	2	0	0	0	15
Shimla	Theog	1														0	0	0	0	0	0	0	0
Solan	Nalagarh	5								4			1			5	4	0	0	0	1	0	5
Shimla	Kotgarh	2														0	0	0	0	0	0	0	0
Solan	Baddi	2								2						2	2	0	0	0	0	0	2
Total of Graziers/ Grassland		59								37	0	6	0	1	0	44	37	0	6	0	1	0	44
Grand Total		400	101	8	2	2	0		114	160	15	15	10	1	1	202	261	23	17	12	1	2	316

Source: Livelihood Survey, JICA Study Team (2017)

Cattle Shed (2)

District	Division	No of Respondents Interviewed	% to Total						Total
			1 Yard with Roof/ Shed	2 Yard without Shed	3 No Yard	4 Ground Floor of the House	5 RiverSide	6 Rented Cattle Shed	
Bilaspur	Bilaspur	60	96.2	1.9	1.9	0.0	0.0	0.0	100.0
	Bharmour	20	73.3	20.0	0.0	6.7	0.0	0.0	100
	Chamba WL	20	76.5	0.0	0.0	23.5	0.0	0.0	100
Chamba	Pangi	20	93.8	0.0	0.0	0.0	0.0	6.3	100
	Kinnaur	40	77.3	22.7	0.0	0.0	0.0	0.0	100
	Sarahan WL	20	93.8	0.0	0.0	6.3	0.0	0.0	100
	Kullu	20	75.0	6.3	6.3	12.5	0.0	0.0	100
	Kullu WL	20	76.5	5.9	11.8	5.9	0.0	0.0	100
Lahaul & Spiti	Spiti(W/L)	20	84.6	7.7	7.7	0.0	0.0	0.0	100
	Karsog	20	84.2	5.3	0.0	10.5	0.0	0.0	100
Mandi	Mandi	20	85.0	15.0	0.0	0.0	0.0	0.0	100
	Kotgarh	20	50.0	6.3	31.3	6.3	0.0	6.3	100
	Rampur	21	80.0	20.0	0.0	0.0	0.0	0.0	100
Shimla	Theog	20	77.8	16.7	5.6	0.0	0.0	0.0	100
Total of Territorial		341	82.4	8.5	4.0	4.4	0.0	0.7	100
Kangra	Bainath	3	100.0	0.0	0.0	0.0	0.0	0.0	100
Kullu	Kullu	11	100.0	0.0	0.0	0.0	0.0	0.0	100
Mandi	Mandi	3	100.0	0.0	0.0	0.0	0.0	0.0	100
Kangra	Palampur	1	0.0	0.0	100.0	0.0	0.0	0.0	100
Kullu	Parvati	10	57.1	0.0	42.9	0.0	0.0	0.0	100
Kinnaur	Kinnaur	21	86.7	0.0	13.3	0.0	0.0	0.0	100
Shimla	Theog	1	-	-	-	-	-	-	0
Solan	Nalagarh	5	80.0	0.0	0.0	0.0	20.0	0.0	100
Shimla	Kotgarh	2	-	-	-	-	-	-	0
Solan	Baddi	2	100.0	0.0	0.0	0.0	0.0	0.0	100
Total of Graziers/ Grassland		59	84.1	0.0	13.6	0.0	2.3	0.0	100
Grand Total		400	82.6	7.3	5.4	3.8	0.3	0.6	100

Source: Livelihood Survey, JICA Study Team (2017)

5.4 Household Assets
Household Items (1)

District	Division	No of Respondents Interviewed	JFM											Non JFM												
			1	2	3	4	5	6	7	8	9	10	11	Total	1	2	3	4	5	6	7	8	9	10	11	Total
			Bed	TV	Stereo/ Radio	Stove (LPG/ Kerosene)	Refrigerator	Improved Chulla (Energy Efficient)	Washing Machine	Mobile Phone	Induction Cooker	Heater	Mixer/ Blender		Bed	TV	Stereo/ Radio	Stove (LPG/ Kerosene)	Refrigerator	Improved Chulla (Energy Efficient)	Washing Machine	Mobile Phone	Induction Cooker	Heater	Mixer/ Blender	
Bilaspur	Bilaspur	60	40	37	4	28	24	10					146	20	21	3	17	18	4						86	
	Bharmour	20	9	10	3	4	2	1					29	9	8		6	1							27	
	Chamba WL	20											0	20	19	2	18	9	2						70	
Chamba	Pangi	20	10	10		7							27	9	10	2	10								31	
	Kinnaur	40	19	15	3	17	5	5					64	21	21	2	21	6	7	1		1	1		81	
	Sarahan WL	20											0	20	19	6	16	7	4					1	73	
	Kullu	20	10	8		8		1					27	10	10		10	8	1						39	
	Kullu WL	20											0	20	20	1	19	10	5						75	
Lahaul & Spiti	Spiti(W/L)	20											0	20	18	6	19	4	4						71	
	Karsog	20	10	10	4	9	4	1					38	10	9		6	5	1						31	
	Mandi	20	9	6	4	3	3	1					27	10	10	1	5	2	2						30	
	Kotgarh	20	10	7	1	6	5	2					31	10	10	2	10	8	3						43	
	Rampur	21	10	10		7	1	2					30	11	8		2	2	2				1		26	
Shimla	Theog	20	11	11	2	11	9	3	2				49	8	9	2	9	5	2						35	
Total of Territorial		341	138	124	21	100	53	26	2	3	1	0	468	198	192	27	168	84	38	1	1	4	4	1	718	
Kangra	Baijnath	3											3	3	1	2	1	1							11	
	Kullu	11											10	10	4	9	9	5							47	
	Mandi	3											3	1											4	
	Kangra Palampur	1											1	1	1	1									4	
	Kullu Parvati	10											7	8	3	6	2	2							28	
	Kinnaur	21											19	18	4	21	5	6							73	
	Shimla Theog	1																							0	
	Solan Nalagarh	5											1			1		1							3	
	Shimla Kotgarh	2																							0	
	Solan Baddi	2											2				2								4	
Total of Graziers/ Grassland		59											0	46	41	14	39	20	14	0	0	0	0	0	174	
Grand Total		400	138	124	21	100	53	26	2	3	1	0	468	244	233	41	207	104	52	1	1	4	4	1	892	

Source: Livelihood Survey, JICA Study Team (2017)

Household Items (2)

District	Division	No of Respondents Interviewed	Total											% to Total												
			1	2	3	4	5	6	7	8	9	10	11	Total	1	2	3	4	5	6	7	8	9	10	11	Total
			Bed	TV	Stereo/ Radio	Stove (LPG/ Kerosene)	Refrigerator	Improved Chulla (Energy Efficient)	Washing Machine	Mobile Phone	Induction Cooker	Heater	Mixer/ Blender		Bed	TV	Stereo/ Radio	Stove (LPG/ Kerosene)	Refrigerator	Improved Chulla (Energy Efficient)	Washing Machine	Mobile Phone	Induction Cooker	Heater	Mixer/ Blender	
Bilaspur	Bilaspur	60	60	58	7	45	42	14	0	4	1	0	1	232	25.9	25.0	3.0	19.4	18.1	6.0	0.0	1.7	0.4	0.0	0.4	100.0
	Bharmour	20	18	18	3	10	2	2	0	0	2	1	0	56	32.1	32.1	5.4	17.9	3.6	3.6	0.0	0.0	3.6	1.8	0.0	100.0
	Chamba WL	20	20	19	2	18	9	2	0	0	0	0	0	70	28.6	27.1	2.9	25.7	12.9	2.9	0.0	0.0	0.0	0.0	0.0	100.0
	Pangi	20	19	20	2	17	0	0	0	0	0	0	0	58	32.8	34.5	3.4	29.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Kinnaur	40	40	36	5	38	11	12	1	0	1	1	0	145	27.6	24.8	3.4	26.2	7.6	8.3	0.7	0.0	0.7	0.7	0.0	100.0
	Sarahan WL	20	20	19	6	16	7	4	0	0	0	1	0	73	27.4	26.0	8.2	21.9	9.6	5.5	0.0	0.0	0.0	1.4	0.0	100.0
	Kullu	20	20	18	0	18	8	2	0	0	0	0	0	66	30.3	27.3	0.0	27.3	12.1	3.0	0.0	0.0	0.0	0.0	0.0	100.0
	Kullu WL	20	20	20	1	19	10	5	0	0	0	0	0	75	26.7	26.7	1.3	25.3	13.3	6.7	0.0	0.0	0.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20	20	18	6	19	4	4	0	0	0	0	0	71	28.2	25.4	8.5	26.8	5.6	5.6	0.0	0.0	0.0	0.0	0.0	100.0
	Karsog	20	20	19	4	15	9	2	0	0	0	0	0	69	29.0	27.5	5.8	21.7	13.0	2.9	0.0	0.0	0.0	0.0	0.0	100.0
	Mandi	20	19	16	5	8	5	3	0	0	1	0	0	57	33.3	28.1	8.8	14.0	8.8	5.3	0.0	0.0	1.8	0.0	0.0	100.0
	Kotgarh	20	20	17	3	16	13	5	0	0	0	0	0	74	27.0	23.0	4.1	21.6	17.6	6.8	0.0	0.0	0.0	0.0	0.0	100.0
	Rampur	21	21	18	0	9	3	4	0	0	0	1	0	56	37.5	32.1	0.0	16.1	5.4	7.1	0.0	0.0	0.0	1.8	0.0	100.0
Shimla	Theog	20	19	20	4	20	14	5	2	0	0	0	0	84	22.6	23.8	4.8	23.8	16.7	6.0	2.4	0.0	0.0	0.0	0.0	100.0
Total of Territorial		341	336	316	48	268	137	64	3	4	5	4	1	1,186	28.3	26.6	4.0	22.6	11.6	5.4	0.3	0.3	0.4	0.3	0.1	100.0
Kangra	Baijnath	3	3	3	1	2	1	1	0	0	0	0	0	11	27.3	27.3	9.1	18.2	9.1	9.1	0.0	0.0	0.0	0.0	0.0	100.0
	Kullu	11	10	10	4	9	9	5	0	0	0	0	0	47	21.3	21.3	8.5	19.1	19.1	10.6	0.0	0.0	0.0	0.0	0.0	100.0
	Mandi	3	3	1	0	0	0	0	0	0	0	0	0	4	75.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Kangra Palampur	1	1	1	0	1	0	0	0	0	0	0	0	4	25.0	25.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Kullu Parvati	10	7	8	3	6	2	2	0	0	0	0	0	28	25.0	28.6	10.7	21.4	7.1	7.1	0.0	0.0	0.0	0.0	0.0	100.0
	Kinnaur	21	19	18	4	21	5	6	0	0	0	0	0	73	26.0	24.7	5.5	28.8	6.8	8.2	0.0	0.0	0.0	0.0	0.0	100.0
	Shimla Theog	1	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0.0	
	Solan Nalagarh	5	1	0	1	0	1	0	0	0	0	0	0	3	33.3	0.0	33.3	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Shimla Kotgarh	2	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	0.0	
	Solan Baddi	2	2	0	0	0	2	0	0	0	0	0	0	4	50.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Total of Graziers/ Grassland		59	46	41	14	39	20	14	0	0	0	0	0	174	26.4	23.6	8.0	22.4	11.5	8.0	0.0	0.0	0.0	0.0	0.0	100.0
Grand Total		400	382	357	62	307	157	78	3	4	5	4	1	1,360	28.1	26.3	4.6	22.6	11.5	5.7	0.2	0.3	0.4	0.3	0.1	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Vehicle(s) (1)

District	Division	No of Respondents Interviewed	JFM						Non JFM							
			1 Cycle	2 Moped/ Scooter	3 Motor Cycle	4 Car/ Jeep/ Taxi etc	5 Truck	6 Heavy Machiner ies	Total	1 Cycle	2 Moped/ Scooter	3 Motor Cycle	4 Car/ Jeep/ Taxi etc	5 Truck	6 Heavy Machiner ies	Total
Bilaspur	Bilaspur	60		2	3	8			13		2	7	1	1		11
	Bharmour	20				1			1							0
	Chamba WL	20							0			3	2			5
Chamba	Pangi	20				1			1				1			1
	Kinnaur	40					6		6				9			9
Kinnaur	Sarahan WL	20							0				7	1		8
	Kullu	20			1				1			2	3			5
Kullu	Kullu WL	20							0				10			10
Lahaul & Spiti	Spiti(W/L)	20							0	1		3	3			7
	Karsog	20		1	3	2			6			1	2			3
Mandi	Mandi	20		2	1				3			1	1			2
	Kotgarh	20		1	1				2			3	5	1		9
	Rampur	21	1				2		4				3			3
Shimla	Theog	20			3	5	1		9				2			2
Total of Territorial		341	1	6	12	25	1	1	46	1	2	20	49	3	0	75
Kangra	Bajinath	3										2				2
Kullu	Kullu	11									1	1	3			5
Mandi	Mandi	3														0
Kangra	Palampur	1										1				1
Kullu	Parvati	10											2			2
Kinnaur	Kinnaur	21											3			3
Shimla	Theog	1														0
Solan	Nalagarh	5								1		2				3
Shimla	Kotgarh	2								2						2
Solan	Baddi	2										2				2
Total of Graziers/ Grassland		59								3	3	6	8	0	0	20
Grand Total		400	1	6	12	25	1	1	46	4	5	26	57	3	0	95

Source: Livelihood Survey, JICA Study Team (2017)

Vehicle(s) (2)

District	Division	No of Respondents Interviewed	Total						% to Total							
			1 Cycle	2 Moped/ Scooter	3 Motor Cycle	4 Car/ Jeep/ Taxi etc	5 Truck	6 Heavy Machiner ies	Total	1 Cycle	2 Moped/ Scooter	3 Motor Cycle	4 Car/ Jeep/ Taxi etc	5 Truck	6 Heavy Machiner ies	Total
Bilaspur	Bilaspur	60	0	4	10	9	1	0	24	0.0	16.7	41.7	37.5	4.2	0.0	100.0
	Bharmour	20	0	0	0	1	0	0	1	0.0	0.0	0.0	100.0	0.0	0.0	100.0
	Chamba WL	20	0	0	3	2	0	0	5	0.0	0.0	60.0	40.0	0.0	0.0	100.0
Chamba	Pangi	20	0	0	0	2	0	0	2	0.0	0.0	0.0	100.0	0.0	0.0	100.0
	Kinnaur	40	0	0	0	15	0	0	15	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Kinnaur	Sarahan WL	20	0	0	0	7	1	0	8	0.0	0.0	0.0	87.5	12.5	0.0	100.0
	Kullu	20	0	0	3	3	0	0	6	0.0	0.0	50.0	50.0	0.0	0.0	100.0
Kullu	Kullu WL	20	0	0	0	10	0	0	10	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20	1	0	3	3	0	0	7	14.3	0.0	42.9	42.9	0.0	0.0	100.0
	Karsog	20	0	1	4	4	0	0	9	0.0	11.1	44.4	44.4	0.0	0.0	100.0
Mandi	Mandi	20	0	2	2	1	0	0	5	0.0	40.0	40.0	20.0	0.0	0.0	100.0
	Kotgarh	20	0	1	4	5	1	0	11	0.0	9.1	36.4	45.5	9.1	0.0	100.0
	Rampur	21	1	0	0	5	0	1	7	14.3	0.0	0.0	71.4	0.0	14.3	100.0
Shimla	Theog	20	0	0	3	7	1	0	11	0.0	0.0	27.3	63.6	9.1	0.0	100.0
Total of Territorial		341	2	8	32	74	4	1	121	1.7	6.6	26.4	61.2	3.3	0.8	100.0
Kangra	Bajinath	3	0	2	0	0	0	0	2	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Kullu	Kullu	11	0	1	1	3	0	0	5	0.0	20.0	20.0	60.0	0.0	0.0	100.0
Mandi	Mandi	3	0	0	0	0	0	0	0	-	-	-	-	-	-	0.0
Kangra	Palampur	1	0	0	1	0	0	0	1	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Kullu	Parvati	10	0	0	0	2	0	0	2	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Kinnaur	Kinnaur	21	0	0	0	3	0	0	3	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Shimla	Theog	1	0	0	0	0	0	0	0	-	-	-	-	-	-	0.0
Solan	Nalagarh	5	1	0	2	0	0	0	3	33.3	0.0	66.7	0.0	0.0	0.0	100.0
Shimla	Kotgarh	2	2	0	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Solan	Baddi	2	0	0	2	0	0	0	2	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Total of Graziers/ Grassland		59	3	3	6	8	0	0	20	15.0	15.0	30.0	40.0	0.0	0.0	100.0
Grand Total		400	5	11	38	82	4	1	141	3.5	7.8	27.0	58.2	2.8	0.7	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Agricultural Equipments (1)

District	Division	No of Respondents Interviewed	JFM											Non JFM										
			1	2	3	4	5	6	7	8	9	10	Total	1	2	3	4	5	6	7	8	9	10	Total
			Bullock Cart	Treddie/ Pedal Pump	Thresher	Diesel Pump	Power Tiller	Pruning Knives	Apple Harvester	Power Sprayer	Tractor	Foot Sprayer		Bullock Cart	Treddie/ Pedal Pump	Thresher	Diesel Pump	Power Tiller	Pruning Knives	Apple Harvester	Power Sprayer	Tractor	Foot Sprayer	
Bilaspur	Bilaspur	60			1						3		4											0
	Bharmour	20											0		3									3
	Chamba WL	20											0		2									2
Chamba	Pangi	20		2						1		3						1					1	2
	Kinnaur	40		4				1	1		5		11		6		3	4	2			3	1	19
	Sarahan WL	20										0		3							2		1	6
	Kullu	20		3				1			3		7		1						3		1	5
	Kullu WL	20										0		3				1				5	1	10
Lahaul & Spiti	Spiti(W/L)	20										0		1								3	4	4
	Karsog	20										0				1							4	5
Mandi	Mandi	20		1							1		2		1								1	2
	Kotgarh	20										0		4							1			5
	Rampur	21		1							1		2		2							1		3
Shimla	Theog	20		1				1			3		5					1	1			1		3
Total of Territorial		341	0	12	1	0	3	1	0	11	6	0	34	0	26	1	3	7	3	1	15	12	1	69
Kangra	Bajmath	3												1										1
Kullu	Kullu	11													2	1	1			6		3		13
Mandi	Mandi	3												1										1
Kangra	Palampur	1																						0
Kullu	Parvati	10																						0
Kinnaur	Kinnaur	21													1					8	2	4	2	20
Shimla	Theog	1																						0
Solan	Nalagarh	5												2										2
Shimla	Kotgarh	2																						0
Solan	Baddi	2																						0
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	0	0	0	4	3	1	1	0	14	2	7	2	3	37
Grand Total		400	0	12	1	0	3	1	0	11	6	0	34	4	29	2	4	7	17	3	22	14	4	106

Source: Livelihood Survey, JICA Study Team (2017)

Agricultural Equipments (2)

District	Division	No of Respondents Interviewed	Total											% to Total											
			1	2	3	4	5	6	7	8	9	10	Total	1	2	3	4	5	6	7	8	9	10	Total	
			Bullock Cart	Treddie/ Pedal Pump	Thresher	Diesel Pump	Power Tiller	Pruning Knives	Apple Harvester	Power Sprayer	Tractor	Foot Sprayer		Bullock Cart	Treddie/ Pedal Pump	Thresher	Diesel Pump	Power Tiller	Pruning Knives	Apple Harvester	Power Sprayer	Tractor	Foot Sprayer		
Bilaspur	Bilaspur	60	0	0	1	0	0	0	0	0	3	0	4	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	0.0	100.0
	Bharmour	20	0	3	0	0	0	0	0	0	0	0	3	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Chamba WL	20	0	2	0	0	0	0	0	0	0	0	2	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Chamba	Pangi	20	0	2	0	0	1	0	0	0	1	1	5	0.0	40.0	0.0	0.0	20.0	0.0	0.0	0.0	20.0	20.0	0.0	100.0
	Kinnaur	40	0	10	0	3	5	3	0	8	1	0	30	0.0	33.3	0.0	10.0	16.7	10.0	0.0	26.7	3.3	0.0	0.0	100.0
	Sarahan WL	20	0	3	0	0	0	0	0	2	1	0	6	0.0	50.0	0.0	0.0	0.0	0.0	0.0	33.3	16.7	0.0	0.0	100.0
	Kullu	20	0	4	0	0	1	0	0	6	1	0	12	0.0	33.3	0.0	0.0	8.3	0.0	0.0	50.0	8.3	0.0	0.0	100.0
	Kullu WL	20	0	3	0	0	1	0	0	5	1	0	10	0.0	30.0	0.0	0.0	10.0	0.0	0.0	50.0	10.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20	0	1	0	0	0	0	0	0	3	0	4	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	0.0	0.0	100.0
	Karsog	20	0	0	1	0	0	0	0	0	4	0	5	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	80.0	0.0	0.0	100.0
Mandi	Mandi	20	0	2	0	0	0	0	0	0	2	0	4	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	100.0
	Kotgarh	20	0	4	0	0	0	0	1	0	0	0	5	0.0	80.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	100.0
	Rampur	21	0	3	0	0	0	0	0	1	1	0	5	0.0	60.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	0.0	0.0	100.0
Shimla	Theog	20	0	1	0	0	2	1	0	4	0	0	8	0.0	12.5	0.0	0.0	25.0	12.5	0.0	50.0	0.0	0.0	0.0	100.0
Total of Territorial		341	0	38	2	3	10	4	1	26	18	1	103	0.0	36.9	1.9	2.9	9.7	3.9	1.0	25.2	17.5	1.0	100.0	
Kangra	Bajmath	3	1	0	0	0	0	0	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Kullu	Kullu	11	0	2	1	1	0	6	0	3	0	0	13	0.0	15.4	7.7	7.7	0.0	46.2	0.0	23.1	0.0	0.0	0.0	100.0
Mandi	Mandi	3	1	0	0	0	0	0	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	0.0
Kullu	Parvati	10	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	0.0
Kinnaur	Kinnaur	21	0	1	0	0	8	2	4	2	3	0	20	0.0	5.0	0.0	0.0	40.0	10.0	20.0	10.0	15.0	0.0	0.0	100.0
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	0.0
Solan	Nalagarh	5	2	0	0	0	0	0	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	0.0
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	0.0
Total of Graziers/ Grassland		59	4	3	1	1	8	8	4	5	3	0	37	10.8	8.1	2.7	2.7	21.6	21.6	10.8	13.5	8.1	0.0	100.0	
Grand Total		400	4	41	3	4	18	12	5	31	21	1	140	2.9	29.3	2.1	2.9	12.9	8.6	3.6	22.1	15.0	0.7	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

6.6 FRA

District	Division	Villages they were interviewed	No of Respondents Interviewed	Land Title Received			Claim Submitted		
				JFM	Non JFM	Total	JFM	Non JFM	Total
Bilaspur	Bilaspur		60			0			0
	Bharmour		20			0			0
	Chamba WL		20			0			0
Chamba	Pangi		20			0			0
	Kinnaur		40	1		1			0
Kinnaur	Sarahan WL		20			0			0
	Kullu		20			0			0
Kullu	Kullu WL		20			0			0
	Lahaul & Spiti		20			0			0
Mandi	Karsog		20			0			0
	Mandi		20			0			0
	Kotgarh		20			0			0
	Rampur		21			0			0
	Theog		20			0			0
Total of Territorial			341	1	0	1	0	0	0
Kangra	Bajinath	Thrass	3			0			0
Kullu	Kullu	Thrass	11			0			0
Mandi	Mandi	Thrass	3			0			0
Kangra	Palampur	Thrass	1			0			0
Kullu	Parvati	Malana, Kullu	10			0			0
Kinnaur	Kinnaur	Lippa, Kinnaur	21		1	1		7	7
Shimla	Theog	Lippa, Kinnaur	1			0			0
Solan	Nalagarh	Hatu	5			0		1	1
Shimla	Kotgarh	Hatu	2			0			0
Solan	Baddi	Hatu	2			0			0
Total of Graziers/ Grassland			59	0	1	1	0	8	8
Grand Total			400	1	1	2	0	8	8

* 1 bigha = 800 sq. m 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

6.7 Irrigation
Sources of Irrigation

District	Division	Villages they were interviewed	No of Respondents Interviewed	Sources of Irrigation											%										
				Dug Well (Own)	Dug Well (Common)	Bore Well (Own)	Bore Well (Common)	Pond/ Water Harvesting (Own)	Pond/ Water Harvesting (Common)	Natural/ Rain	Irrigation Pipe/ Channel	Mix	Total	Dug Well (Own)	Dug Well (Common)	Bore Well (Own)	Bore Well (Common)	Pond/ Water Harvesting (Own)	Pond/ Water Harvesting (Common)	Natural/ Rain	Irrigation Pipe/ Channel	Mix	Total		
Bilaspur	Bilaspur		60	1				1							3	33.3	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Bharmour		20										2	2	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	
	Chamba WL		20										7	7	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0		
Chamba	Pangi		20											0	-	-	-	-	-	-	-	-	-	0.0	
	Kinnaur		40				1	1	1	2			5	5	0.0	0.0	0.0	20.0	20.0	20.0	40.0	0.0	0.0	100.0	
Kinnaur	Sarahan WL		20							1			1	1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	
	Kullu		20							2	1		3	3	0.0	0.0	0.0	0.0	0.0	66.7	33.3	0.0	100.0		
Kullu	Kullu WL		20							2			2	2	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0		
	Lahaul & Spiti		20							4			4	4	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0		
Mandi	Karsog		20				1	1	1	2			5	5	0.0	0.0	0.0	20.0	20.0	40.0	0.0	0.0	100.0		
	Mandi		20							4			4	4	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0		
	Kotgarh		20							1			1	1	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0		
	Rampur		21							2			2	2	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0		
	Theog		20						1			1	2	2	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	150.0		
Total of Territorial			341	1	0	1	2	4	2	30	1	1	41	2.4	0.0	2.4	4.9	9.8	4.9	73.2	2.4	2.4	102.4		
Kangra	Bajinath	Thrass	3			1							2	2	0.0	50.0	0.0	0.0	0.0	0.0	50.0	0.0	100.0		
Kullu	Kullu	Thrass	11	1					1				2	2	50.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	100.0		
Mandi	Mandi	Thrass	3										0	-	-	-	-	-	-	-	-	-	0.0		
Kangra	Palampur	Thrass	1										0	-	-	-	-	-	-	-	-	-	0.0		
Kullu	Parvati	Malana, Kullu	10							1			1	1	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0		
Kinnaur	Kinnaur	Lippa, Kinnaur	21	2						2	1		5	5	40.0	0.0	0.0	0.0	0.0	40.0	20.0	0.0	100.0		
Shimla	Theog	Lippa, Kinnaur	1										0	-	-	-	-	-	-	-	-	-	0.0		
Solan	Nalagarh	Hatu	5				2						2	2	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0		
Shimla	Kotgarh	Hatu	2										0	-	-	-	-	-	-	-	-	-	0.0		
Solan	Baddi	Hatu	2						1				1	1	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0		
Total of Graziers/ Grassland			59	3	1	2	1	0	1	3	2	0	13	23.1	7.7	15.4	7.7	0.0	7.7	23.1	15.4	0.0	100.0		
Grand Total			400	4	1	3	3	4	3	35	3	1	54	7.4	1.9	5.6	5.6	7.4	5.6	61.1	5.6	1.9	101.9		

* 1 bigha = 800 sq. m 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

Methods of Irrigation

District	Division	Villages they were interviewed	No of Respondents Interviewed	Sources of Irrigation							% to Total									
				Gravity	Pump Up	Drip Irrigation	Lift Irrigation	Mix	Irrigation Canal	Total	Gravity	Pump Up	Drip Irrigation	Lift Irrigation	Mix	Irrigation Canal	Total			
Bilaspur	Bilaspur		60		1						2	0.0	50.0	0.0			50.0	0.0	0.0	100.0
	Bharmour		20								0	-	-	-	-	-	-	-	-	0.0
	Chamba WL		20								0	-	-	-	-	-	-	-	-	0.0
Chamba	Pangi		20	16							16	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Kinnaur		40	9							9	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Sarahan WL		20								0	-	-	-	-	-	-	-	-	0.0
	Kullu		20	3	4			1	1		9	33.3	44.4	0.0	11.1	11.1	0.0	0.0	0.0	100.0
	Kullu WL		20	2							2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)		20	10				2			12	83.3	0.0	0.0	16.7	0.0	0.0	0.0	0.0	100.0
	Karsog		20	2							2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Mandi	Mandi		20	1		1					2	50.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0
	Kotgarh		20	3				1			4	75.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	100.0
	Rampur		21								0	-	-	-	-	-	-	-	-	0.0
Shimla	Theog		20	1							1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Total of Territorial			341	47	5	1	5	1	0	59	79.7	8.5	1.7	8.8	1.7	0.0	8.3	16.7	100.0	
Kangra	Bajjnath	Thrass	3								0	-	-	-	-	-	-	-	-	0.0
	Kullu	Thrass	11		1				1		2	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	100.0
Mandi	Mandi	Thrass	3								0	-	-	-	-	-	-	-	-	0.0
Kangra	Palampur	Thrass	1								0	-	-	-	-	-	-	-	-	0.0
	Kullu	Parvati	10								0	-	-	-	-	-	-	-	-	0.0
Kinnaur	Kinnaur	Lippa, Kinnaur	21	3				2		2	7	42.9	0.0	0.0	28.6	0.0	28.6	0.0	0.0	100.0
Shimla	Theog	Lippa, Kinnaur	1								0	-	-	-	-	-	-	-	-	0.0
Solan	Nalagarh	Hatu	5	2				1			3	66.7	0.0	0.0	33.3	0.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	Hatu	2								0	-	-	-	-	-	-	-	-	0.0
Solan	Baddi	Hatu	2								0	-	-	-	-	-	-	-	-	0.0
Total of Graziers/ Grassland			59	5	1	0	3	1	2	12	41.7	8.3	0.0	25.0	8.3	16.7	0.0	16.7	100.0	
Grand Total			400	82	6	1	8	2	2	71	73.2	8.5	1.4	11.3	2.8	2.8	0.0	2.8	100.0	

* 1 bigha = 600 sq. m 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

6.8 Homestead (1)

Size of Plot and Owners

District	Division	they were interviewed	Respondents	Average Areas for Homestead in Biswas				Owner																		
				House	Yard for Cattle	Home Garden	Total Average	JFM					Non JFM													
								Male Head of Household	Spouse of the Male Head of Household	Female Head of Household	Other Male Member of the Family	Other Female Member of the Family	Joint Ownership of Male Head of Household and Spouse	Joint Ownership of Male Member of the Family	Joint Ownership by all family members	Total	Male Head of Household	Spouse of the Male Head of Household	Female Head of Household	Other Male Member of the Family	Other Female Member of the Family	Joint Ownership of Male Head of Household and Spouse	Joint Ownership of Male Member of the Family	Joint Ownership by all family members	Total	
Bilaspur	Bilaspur		60	3.6	1.8	1.9	6.0	22	1	3	1			2			29	14		2			1			17
	Bharmour		20	3.1	1.1	1.3	4.1	9									9	8								8
	Chamba WL		20	2.4	1.0	2.0	2.8										0	11		3						14
Chamba	Pangi		20	2.6	0.9	1.5	3.2	4	1	1	1						7	5		2						7
	Kinnaur		40	3.5	1.8	3.1	5.4	13			1	2					16	13		1						14
	Sarahan WL		20	3.7	1.6	5.7	5.6										0	16			2					18
	Kullu		20	3.2	1.2	4.0	4.0	8								1	9	9		1						10
	Kullu WL		20	3.4	1.3	1.5	3.5										0	9		1	1			1		12
Lahaul & Spiti	Spiti(W/L)		20	3.6	1.1	1.3	4.0										0	11	2	2		1				16
	Karsog		20	2.6	1.1	2.1	4.3	7									8	8							2	10
Mandi	Mandi		20	2.5	1.2	1.8	4.5	6			1						7	7					2			9
	Kotgarh		20	2.8	0.8	1.0	3.6	8		2							8	8						1		9
	Rampur		21	2.9	1.1	1.8	3.8	5		4							9	7		2						9
Shimla	Theog		20	3.3	1.2	2.8	4.7	5	1	4							10	5		3						8
Total of Territorial			341	3.2	1.4	2.1	4.5	87	3	15	6	0	2	1	114	131	2	17	3	1	2	3	2	2	2	161
Kangra	Bajjnath	Thrass	3	4.0	1.0	1.5	5.7										2	2								2
	Kullu	Thrass	11		6.0	6.0											8									8
Mandi	Mandi	Thrass	3	1.7	1.0	2.0	4.0										1									1
Kangra	Palampur	Thrass	1	3.0			3.0										1									1
	Kullu	Parvati	10	4.0	1.5	15.7	8.9										7									7
Kinnaur	Kinnaur	Lippa, Kinnaur	21	1.8	0.8	2.2	2.8										18		1							19
Shimla	Theog	Lippa, Kinnaur	1			0.0																				0
Solan	Nalagarh	Hatu	5	1.5	1.8		2.9										4									4
Shimla	Kotgarh	Hatu	2			0.0																				0
Solan	Baddi	Hatu	2	5.0	1.9		6.9																			2
Total of Graziers/ Grassland			59	2.8	1.2	5.4	4.9										0	41	0	1	0	2	0	0	44	
Grand Total			400	3.12565445	1.35709593	2.6652401	4.5683	87	3	15	6	0	2	1	114	172	2	18	3	1	4	3	2	2	205	

* 1 bigha = 600 sq. m 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

6. Homestead (2)

Size of Plot and Owners

District	Division	they were interviewed	respondents	Inte	Total										% to Total									
					Male Head of Household	Spouse of the Male Head of Household	Female Head of Household	Other Male Member of the Family	Other Female Member of the Family	Joint Onwershi- of Male Head of Household and Spouse	Joint Onwership of Male Head of Household and other Male Member of the Family	Joint Ownership by all family members	Total	Male Head of Household	Spouse of the Male Head of Household	Female Head of Household	Other Male Member of the Family	Other Female Member of the Family	Joint Onwershi- of Male Head of Household and Spouse	Joint Onwership of Male Head of Household and other Male Member of the Family	Joint Ownership by all family members	Total		
Bilaspur	Bilaspur		60	36	1	5	1	0	0	0	3	0	46	78.3	2.2	10.9	2.2	0.0	0.0	6.5	0.0	100.0		
	Bharmour		20	17	0	0	0	0	0	0	0	0	17	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
	Chamba WL		20	11	0	3	0	0	0	0	0	0	14	78.6	0.0	21.4	0.0	0.0	0.0	0.0	0.0	100.0		
Chamba	Pangi		20	9	1	3	1	0	0	0	0	0	14	64.3	7.1	21.4	7.1	0.0	0.0	0.0	0.0	100.0		
	Kinnaur		40	26	0	2	2	0	0	0	0	0	30	86.7	0.0	6.7	6.7	0.0	0.0	0.0	0.0	100.0		
Kinnaur	Sarahan WL		20	16	0	0	2	0	0	0	0	0	18	88.9	0.0	0.0	11.1	0.0	0.0	0.0	0.0	100.0		
	Kullu		20	17	0	1	0	0	0	0	1	19	89.5	0.0	5.3	0.0	0.0	0.0	0.0	0.0	5.3	100.0		
Kullu	Kullu WL		20	9	0	1	1	0	0	1	0	12	75.0	0.0	8.3	8.3	0.0	0.0	8.3	0.0	0.0	100.0		
Lahaul & Spiti	Spiti(W/L)		20	11	2	2	0	1	0	0	0	16	68.8	12.5	12.5	0.0	6.3	0.0	0.0	0.0	0.0	100.0		
	Karsog		20	15	0	0	1	0	0	0	2	18	83.3	0.0	0.0	5.6	0.0	0.0	0.0	0.0	11.1	100.0		
Mandi	Mandi		20	13	0	0	1	0	2	0	0	16	81.3	0.0	0.0	6.3	0.0	12.5	0.0	0.0	0.0	100.0		
	Kotgarh		20	16	0	2	0	0	0	1	0	19	84.2	0.0	10.5	0.0	0.0	0.0	5.3	0.0	0.0	100.0		
	Rampur		21	12	0	6	0	0	0	0	0	18	66.7	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Shimla	Theog		20	10	1	7	0	0	0	0	0	18	55.6	5.6	38.9	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Total of Territorial			341	218	5	32	9	1	2	5	3	275	79.3	1.8	11.6	3.3	0.4	0.7	1.8	1.1	100.0			
Kangra	Bajinath	Thrass	3	2	0	0	0	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Kullu	Kullu	Thrass	11	8	0	0	0	0	0	0	0	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Mandi	Mandi	Thrass	3	1	0	0	0	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Kangra	Palampur	Thrass	1	1	0	0	0	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Kullu	Parvati	Malana, Kullu	10	7	0	0	0	0	0	0	0	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Kinnaur	Kinnaur	Lippa, Kinnaur	21	18	0	1	0	0	0	0	0	19	94.7	0.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Shimla	Theog	Lippa, Kinnaur	1	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	0.0			
Solan	Nalagarh	Hatu	5	4	0	0	0	0	0	0	0	4	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Shimla	Kotgarh	Hatu	2	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	0.0			
Solan	Baddi	Hatu	2	0	0	0	0	0	2	0	0	2	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0		
Total of Graziers/ Grassland			59	41	0	1	0	0	2	0	0	44	93.2	0.0	2.3	0.0	0.0	4.5	0.0	0.0	100.0			
Grand Total			400	259	5	33	9	1	4	5	3	319	81.2	1.6	10.3	2.8	0.3	1.3	1.6	0.9	100.0			

* 1 bigha = 800 sq. m/ 1 biswa=40 sq. m

Source: Livelihood Survey, JICA Study Team (2017)

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

7. Livestock

7.1 Cow

Adult

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60	4	1.5		1.5	1	1.0		1.0	5	1.4		1.3
Chamba	Bharmour	20	8	1.3	1.2	1.3	7	1.3	1.4	1.3	15	1.3	1.3	1.3
	Chamba WL	20					16	1.4	1.5	1.5	16	1.4	1.5	1.5
	Pangi	20	8	1.4	1.4	1.4	9	1.2	1.2	1.2	17	1.3	1.3	1.3
Kinnaur	Kinnaur	40	9	1.6	1.7	1.6	15	1.5	1.5	1.5	24	1.5	1.6	1.5
	Sarahan WL	20					16	1.6	1.4	1.4	16	1.6	1.4	1.4
Kullu	Kullu	20	9	1.1	1.1	1.0	5	1.2	1.2	1.2	14	1.1	1.2	1.1
	Kullu WL	20					11	1.5	1.6	1.4	11	1.5	1.6	1.4
Lahaul & Spiti	Spiti(W/L)	20					15	1.6	2.0	1.6	15	1.6	2.0	1.6
Mandi	Karsog	20	7	1.7	2.5	1.4	8	1.1	1.7	1.1	15	1.4	2.0	1.3
	Mandi	20	8	1.6	2.3	1.3	7	1.7	1.7	1.4	15	1.7	2.0	1.4
Shimla	Kotgarh	20	6	1.0	1.0	1.0	3	1.3		1.3	9	1.1	1.0	1.1
	Rampur	21	8	1.3	2.0	1.0	8	1.1	1.5	1.0	16	1.2	1.8	1.0
	Theog	20	10	1.9	1.8	1.9	6	1.3	2.0	1.3	16	1.7	1.9	1.6
Total of Territorial		341	77	1.4	1.6	1.4	127	1.4	1.5	1.4	204	1.4	1.5	1.4
Kangra	Bajinath	3					3	1.7	2.0	2.0	3	1.7	2.0	2.0
Kullu	Kullu	11					11	1.7	1.5	1.9	11	1.7	1.5	1.9
Mandi	Mandi	3					2	1.0	1.0		2	1.0	1.0	
Kangra	Palampur	1					1	1.0	1.0	1.0	1	1.0	1.0	1.0
Kullu	Parvati	10					2	1.5	2.0	1.0	2	1.5	2.0	1.0
Kinnaur	Kinnaur	21					13	1.4	2.1	1.4	13	1.4	2.1	1.4
Shimla	Theog	1					1	5.0		2.0	1	5.0		2.0
Solan	Nalagarh	5					5	2.8	2.6		5	2.8	2.6	
Shimla	Kotgarh	2					2	1.5		1.5	2	1.5		1.5
Solan	Baddi	2					2	1.5		1.5	2	1.5		1.5
Total of Graziers/		59					40	1.8	2.1	1.6	40	1.8	2.1	1.6
Grand Total		400	77	1.4	1.6	1.4	167	1.5	1.6	1.4	244	1.5	1.6	1.4

Source: Livelihood Survey, JICA Study Team (2017)

Young

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60	2	1.0	1.3	2.0	1	1.0	1.0	1.0	5	1.0	1.2	1.6
Chamba	Bharmour	20	3	1.0	1.3	2.0	2	1.0	1.0	1.0	5	1.0	1.2	1.6
	Chamba WL	20					4	1.0	1.0	1.0	4	1.0	1.0	1.0
	Pangi	20					3	1.0	1.0	1.0	3	1.0	1.0	1.0
Kinnaur	Kinnaur	40	5	1.0	1.0	1.0	5	1.6	1.3	1.6	10	1.3	1.2	1.3
	Sarahan WL	20					4	1.0	1.0	1.0	4	1.0	1.0	1.0
Kullu	Kullu	20	3	1.0	1.0	1.3	2	1.5		1.5	5	1.2	1.0	1.3
	Kullu WL	20					6	1.3	1.5	1.3	6	1.3	1.5	1.3
Lahaul & Spiti	Spiti(W/L)	20					4	1.5	1.7	1.7	4	1.5	1.7	1.7
Mandi	Karsog	20	2	1.0		1.0	5	1.2	1.0	1.0	7	1.1	1.0	1.0
	Mandi	20	5	1.4	2.7	2.0	3	1.3	2.0	1.2	8	1.4	2.5	1.6
Shimla	Kotgarh	20	1	1.0	1.0	1.0	1	2.0		1.5	2	1.5		1.3
	Rampur	21	5	1.2	1.0	1.0	5	1.2	2.0	1.3	10	1.2	1.3	1.1
	Theog	20	5	1.4	1.0	1.4	3	1.3		1.5	8	1.4	1.0	1.5
Total of Territorial		341	31	1.2	1.4	1.3	48	1.3	1.3	1.3	79	1.2	1.3	1.3
Kangra	Bajinath	3												
Kullu	Kullu	11					6	1.5	1.0	1.8	6	1.5	1.0	1.8
Mandi	Mandi	3					1	1.0	1.0		1	1.0	1.0	
Kangra	Palampur	1												
Kullu	Parvati	10					1	1.0		1.0	1	1.0		1.0
Kinnaur	Kinnaur	21					5	1.2	1.5	1.3	5	1.2	1.5	1.3
Shimla	Theog	1								3.0				3.0
Solan	Nalagarh	5					3	1.7	3.0		3	1.7	3.0	
Shimla	Kotgarh	2												
Solan	Baddi	2					2	2.0	1.0	1.5	2	2.0	1.0	1.5
Total of Graziers/ Grassland		59					18	1.4	1.7	1.5	18	1.4	1.7	1.5
Grand Total		400	31	1.2	1.4	1.3	66	1.3	1.4	1.3	97	1.3	1.4	1.3

Source: Livelihood Survey, JICA Study Team (2017)

7.2 Buffalo

Adult

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60	24	1.4		1.4	14	1.4	2.0	1.3	38	1.4	2.0	1.3
Chamba	Bharmour	20												
	Chamba WL	20												
	Pangi	20												
Kinnaur	Kinnaur	40												
	Sarahan WL	20												
Kullu	Kullu	20												
	Kullu WL	20												
Lahaul & Spiti	Spiti(W/L)	20												
Mandi	Karsog	20	1	4.0	3.0						1	4.0	3.0	
	Mandi	20	3	10.3	8.0	4.0	1	2.0	2.0	1.0	4	8.3	6.0	2.5
Shimla	Kotgarh	20												
	Rampur	21												
	Theog	20												
Total of Territorial		341	28	2.5	6.3	1.5	15	1.4	2.0	1.3	43	2.1	4.6	1.4
Kangra	Bajinath	3												
Kullu	Kullu	11					3	1.7	1.0	3.0	3	1.7	1.0	3.0
Mandi	Mandi	3												
Kangra	Palampur	1												
Kullu	Parvati	10												
Kinnaur	Kinnaur	21												
Shimla	Theog	1					1	60.0		40.0	1	60.0		40.0
Solan	Nalagarh	5					5	33.8	7.6	9.5	5	33.8	7.6	9.5
Shimla	Kotgarh	2					2	37.5	30.0	21.5	2	37.5	30.0	21.5
Solan	Baddi	2					2	10.0	8.5	1.5	2	10.0	8.5	1.5
Total of Graziers/ Grassland		59					13	25.3	8.7	13.5	13	25.3	8.7	13.5
Grand Total		400	28	2.5	6.3	1.5	28	12.5	7.6	5.3	56	7.5	7.3	3.2

Source: Livelihood Survey, JICA Study Team (2017)

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

7.3 Young

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60	6	1.2		1.3	5	1.0		1.0	11	1.1		1.2
Chamba	Bharmour	20												
	Chamba WL	20												
	Pang	20												
Kinnaur	Kinnaur	40												
	Sarahan WL	20												
Kullu	Kullu	20												
	Kullu WL	20												
Lahaul & Spiti	Spiti(W/L)	20												
	Karsog	20												
Mandi	Mandi	20	1	2.0	2.0					1	2.0	2.0		
	Kotgarh	20												
Shimla	Rampur	21												
	Theog	20												
Total of Territorial		341	7	1.3	2.0	1.3	5	1.0		1.0	12	1.2	2.0	1.2
Kangra	Bajmath	3												
Kullu	Kullu	11					2	1.0	1.0		2	1.0	1.0	
Mandi	Mandi	3												
Kangra	Palampur	1												
Kullu	Parvati	10												
Kinnaur	Kinnaur	21												
Shimla	Theog	1					1	20.0		20.0	1	20.0		20.0
Solan	Nalagarh	5					5	13.2	7.0	16.0	5	13.2	7.0	16.0
Shimla	Kotgarh	2					1	20.0		16.0	1	20.0		16.0
Solan	Baddi	2					2	4.5	3.0	1.5	2	4.5	3.0	1.5
Total of Graziers/ Grassland		59					11	10.6	4.8	11.8	11	10.6	4.8	11.8
Grand Total		400	7	1.3	2.0	1.3	16	7.6	4.8	6.4	23	5.7	4.5	4.1

Source: Livelihood Survey, JICA Study Team (2017)

7.4 Poultry

Adult

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60					1	3.0	3.0	5.0	1	3.0	3.0	5.0
Chamba	Bharmour	20												
	Chamba WL	20												
	Pang	20												
Kinnaur	Kinnaur	40					1	10.0	10.0		1	10.0	10.0	
	Sarahan WL	20												
Kullu	Kullu	20												
	Kullu WL	20												
Lahaul & Spiti	Spiti(W/L)	20												
	Karsog	20												
Mandi	Mandi	20	1	4.0	1.0						1	4.0	1.0	
	Kotgarh	20												
Shimla	Rampur	21	1	1.0	1.0		1	3.0	3.0	3.0	2	2.0	2.0	3.0
	Theog	20												
Total of Territorial		341	2	2.5	1.0		4	6.0	6.0	5.3	6	4.8	4.3	5.3
Kangra	Bajmath	3												
Kullu	Kullu	11												
Mandi	Mandi	3					1	1.0			1	1.0		
Kangra	Palampur	1												
Kullu	Parvati	10												
Kinnaur	Kinnaur	21												
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2												
Total of Graziers/ Grassland		59					1	1.0			1	1.0		
Grand Total		400	2	2.5	1.0		5	5.0	6.0	5.3	7	4.3	4.3	5.3

Source: Livelihood Survey, JICA Study Team (2017)

Young

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60												
Chamba	Bharmour	20												
	Chamba WL	20												
	Pang	20												
Kinnaur	Kinnaur	40												
	Sarahan WL	20												
Kullu	Kullu	20												
	Kullu WL	20												
Lahaul & Spiti	Spiti(W/L)	20												
	Karsog	20												
Mandi	Mandi	20												
	Kotgarh	20	1	4.0	4.0					1	4.0	4.0		
Shimla	Rampur	21												
	Theog	20												
Total of Territorial		341	1	4.0	4.0						1	4.0	4.0	
Kangra	Bajmath	3												
Kullu	Kullu	11												
Mandi	Mandi	3												
Kangra	Palampur	1												
Kullu	Parvati	10												
Kinnaur	Kinnaur	21					1	20.0		20.0	1	20.0		20.0
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2												
Total of Graziers/ Grassland		59					1	20.0		20.0	1	20.0		20.0
Grand Total		400	1	4.0	4.0		1	20.0		20.0	2	12.0		4.0

Source: Livelihood Survey, JICA Study Team (2017)

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

7.5 Goat
Adult

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed	Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed	Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed
Bilaspur	Bilaspur	60	20	2.0	1.7	1.8	8	2.9	3.8	1.0	28	2.2	3.1	1.8
Chamba	Bharmour	20	5	2.0	2.0	2.0	4	2.3	2.3	1.0	9	2.1	2.1	1.5
	Chamba WL	20												
	Pangi	20	2	2.5	2.5	2.5	4	5.3	5.3	4.5	6	4.3	4.3	3.5
Kinnaur	Kinnaur	40	2	200.0	151.5		3	6.0	6.0	4.0	5	83.6	64.2	4.0
	Sarahan WL	20					9	11.9	11.9	6.2	9	11.9	11.9	6.2
Kullu	Kullu	20	1	15.0	15.0						1	15.0	15.0	
	Kullu WL	20					3	30.3	30.3	1.0	3	30.3	30.3	1.0
Lahaul & Spiti	Spiti(W/L)	20												
Mandi	Karsog	20												
	Mandi	20	2	11.5	11.5		1	1.0		1.0	3	8.0	11.5	1.0
Shimla	Kotgarh	20	1	1.0	1.0	1.0					1	1.0	1.0	1.0
	Rampur	21	1	20.0	20.0	25.0	4	19.8	19.8	30.0	5	19.8	19.8	27.5
	Theog	20												
Total of Territorial		341	34	15.1	22.5	2.9	40	11.3	12.2	5.3	74	13.0	15.4	3.9
Kangra	Bajjnath	3					3	80.0	67.5		3	80.0	67.5	
Kullu	Kullu	11					1	100.0	100.0		1	100.0	100.0	
Mandi	Mandi	3					3	38.3	40.0		3	38.3	40.0	
Kangra	Palampur	1					1	150.0	150.0		1	150.0	150.0	
Kullu	Parvati	10					3	58.0	39.7	90.0	3	58.0	39.7	90.0
Kinnaur	Kinnaur	21					5	6.0	3.8		5	6.0	3.8	
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2												
Total of Graziers/ Grassland		59					16	50.6	43.3	90.0	16	50.6	43.3	90.0
Grand Total		400	34	15.1	22.5	2.9	56	22.5	20.3	10.3	90	19.7	20.8	6.0

Source: Livelihood Survey, JICA Study Team (2017)

Young

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed	Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed	Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed
Bilaspur	Bilaspur	60	3	2.0	1.0	1.8	3	2.0	2.7		6	2.0	2.3	1.8
Chamba	Bharmour	20	1	2.0	2.0	3.0					1	2.0	2.0	3.0
	Chamba WL	20												
	Pangi	20					2	2.0	2.0	2.0	2	2.0	2.0	2.0
Kinnaur	Kinnaur	40												
	Sarahan WL	20					1	4.0	4.0		1	4.0	4.0	
Kullu	Kullu	20												
	Kullu WL	20												
Lahaul & Spiti	Spiti(W/L)	20												
Mandi	Karsog	20												
	Mandi	20												
Shimla	Kotgarh	20												
	Rampur	21												
	Theog	20												
Total of Territorial		341	4	2.0	1.5	2.0	6	2.3	2.7	2.0	10	2.2	2.4	2.0
Kangra	Bajjnath	3					2	15.0	14.0		2	15.0	14.0	
Kullu	Kullu	11							15.0				15.0	
Mandi	Mandi	3					3	11.7	10.0		3	11.7	10.0	
Kangra	Palampur	1					1	50.0	50.0		1	50.0	50.0	
Kullu	Parvati	10					2	17.5	8.0	2.0	2	17.5	8.0	2.0
Kinnaur	Kinnaur	21					2	3.5	3.5		2	3.5	3.5	
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2												
Total of Graziers/ Grassland		59					10	15.7	14.7	2.0	10	15.7	14.7	2.0
Grand Total		400	4	2.0	1.5	2.0	16	10.7	9.9	2.0	20	9.0	8.9	2.0

Source: Livelihood Survey, JICA Study Team (2017)

7.6 Sheep
Adult

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed	Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed	Counts of Responses	Average No of Animal	Average No of Animal going Grazing	Stall Fed
Bilaspur	Bilaspur	60												
Chamba	Bharmour	20	3	4.7	4.7	2.0	2	5.5	5.5		5	5.0	5.0	2.0
	Chamba WL	20					2	50.0	50.0		2	50.0	50.0	
	Pangi	20	2	5.0	5.0	5.0	4	5.5	5.5	3.0	6	5.3	5.3	4.0
Kinnaur	Kinnaur	40	1	30.0	30.0		7	14.4	11.7	4.5	8	16.4	14.0	4.5
	Sarahan WL	20					4	16.5	9.0	12.0	4	16.5	9.0	12.0
Kullu	Kullu	20	4	19.0	19.0	10.0					4	19.0	19.0	10.0
	Kullu WL	20					2	8.5	8.5	2.0	2	8.5	8.5	2.0
Lahaul & Spiti	Spiti(W/L)	20												
Mandi	Karsog	20					1	2.0	3.0	2.0	1	2.0	3.0	2.0
	Mandi	20	4	8.00	7.75		3	4.3	1.0	4.0	7	6.4	6.4	4.0
Shimla	Kotgarh	20												
	Rampur	21	3	8.3	8.3		4	23.8	23.8	10.0	7	17.1	17.1	10.0
	Theog	20												
Total of Territorial		341	17	11.0	10.9	6.4	29	14.7	13.6	5.5	46	13.3	12.6	5.8
Kangra	Bajjnath	3					3	81.7	56.7	20.0	3	81.7	56.7	20.0
Kullu	Kullu	11					3	37.7	56.0		3	37.7	56.0	
Mandi	Mandi	3					3	41.7	60.0		3	41.7	60.0	
Kangra	Palampur	1					1	90.0	90.0		1	90.0	90.0	
Kullu	Parvati	10					3	55.0	36.7	70.0	3	55.0	36.7	70.0
Kinnaur	Kinnaur	21					8	13.1	8.3	20.0	8	13.1	8.3	20.0
Shimla	Theog	1												
Solan	Nalagarh	5					1	3.0	3.0		1	3.0	3.0	
Shimla	Kotgarh	2												
Solan	Baddi	2					1	2.0	2.0		1	2.0	2.0	
Total of Graziers/ Grassland		59					23	36.9	30.7	36.7	23	36.9	30.7	36.7
Grand Total		400	17	11	10.9	6.4	52	24.5	20.9	12.7	69	21.2	18.2	10.9

Source: Livelihood Survey, JICA Study Team (2017)

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

Young

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60												
Chamba	Bharmour	20	1	2.0	2.0	2.0					1	2.0	2.0	2.0
	Chamba WL	20												
Kinnaur	Pangi	20					2	1.5	1.5	1	2	1.5	1.5	1.0
	Kinnaur	40	1	20.0	20.0						1	20.0	20.0	
Kullu	Sarahan WL	20					1	3.0	3.0		1	3.0	3.0	
	Kullu	20												
Lahaul & Spiti	Kullu WL	20					1	2.0	1.0	1.0	1	2.0	1.0	1.0
	Spiti(W/L)	20												
Mandi	Karsog	20												
	Mandi	20							7				7.0	
Shimla	Kotgarh	20												
	Rampur	21	1	3.0	3.0						1	3.0	3.0	
	Theog	20												
Total of Territorial		341	5	6.0	5.8	1.5	2	1.5	3.3	1.0	7.0	4.7	4.9	1.3
Kangra	Bajinath	3					1	15.0	15.0		1.0	15.0	15.0	
Kullu	Kullu	11					1	3.0	11.5		1.0	3.0	11.5	
Mandi	Mandi	3					3	7.7	8.0		3.0	7.7	8.0	
Kangra	Palampur	1					1	10.0	10.0		1.0	10.0	10.0	
Kullu	Parvati	10					2	52.5	10.0	10.0	2.0	52.5	10.0	10.0
Kinnaur	Kinnaur	21					2	4.0	8.0		2.0	4.0	8.0	
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2												
Total of Graziers/ Grassland		59					10.0	16.4	10.5	10.0	10.0	16.4	10.5	10.0
Grand Total		400	5	6.0	5.8	1.5	12.0	13.9	8.8	4.0	17.0	11.6	8.0	3.0

Source: Livelihood Survey, JICA Study Team (2017)

7.7 Ox

Adult

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60	4	1.8		2.4	6	1.8	2.0	2.1	10	1.8	2.0	2.2
Chamba	Bharmour	20	6	1.7	1.7	1.8	2	1.5	1.5	1.5	8	1.6	1.6	1.7
	Chamba WL	20					7	1.1	1.1	1.8	7	1.1	1.1	1.8
Kinnaur	Pangi	20	1	1.0	1.0	1.0	1	1.0	1.0	1.0	2	1.0	1.0	1.0
	Kinnaur	40												
Kullu	Sarahan WL	20					1	1.0	1.0		1	1.0	1.0	
	Kullu	20	1	2.0	2.0	2.0					1	2.0	2.0	2.0
Lahaul & Spiti	Kullu WL	20												
	Spiti(W/L)	20												
Mandi	Karsog	20	2	2.0	2.0	2.0	2	2.0	2.0	2.0	4	2.0	2.0	2.0
	Mandi	20	4	2.0	1.7	2.0	4	2.0	1.7	2.0	8	2.0	1.7	2.0
Shimla	Kotgarh	20												
	Rampur	21	2	1.0	1.0	1.0	3	1.0	1.0	1.0	5	1.0	1.0	1.0
	Theog	20	1	1.0							1	1.0		
Total of Territorial		341	21	1.7	1.6	2.2	26	1.5	1.4	2.0	47	1.6	1.5	2.1
Kangra	Bajinath	3												
Kullu	Kullu	11												
Mandi	Mandi	3												
Kangra	Palampur	1												
Kullu	Parvati	10												
Kinnaur	Kinnaur	21												
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2												
Total of Graziers/ Grassland		59												
Grand Total		400	21	1.7	1.6	2.2	26	1.5	1.4	2.0	47	1.6	1.5	2.1

Source: Livelihood Survey, JICA Study Team (2017)

7.8 Horse

Adult

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal	Counts of Responses	Average No of Animal	Grazing No of Animal going Grazing	Stall Fed No of animal
Bilaspur	Bilaspur	60												
Chamba	Bharmour	20	1	2.0	2.0	2.0					1	2.0	2.0	2.0
	Chamba WL	20					1	3.0	3.0	3.0	1	3.0	3.0	3.0
Kinnaur	Pangi	20												
	Kinnaur	40												
Kullu	Sarahan WL	20												
	Kullu	20												
Lahaul & Spiti	Kullu WL	20												
	Spiti(W/L)	20												
Mandi	Karsog	20					1	1.0	1.0	1.0	1	1.0	1.0	1.0
	Mandi	20												
Shimla	Kotgarh	20												
	Rampur	21												
	Theog	20												
Total of Territorial		341	1	2	2	2	2	2.0	3.0	2.0	3	2.0	2.7	2.0
Kangra	Bajinath	3												
Kullu	Kullu	11												
Mandi	Mandi	3												
Kangra	Palampur	1												
Kullu	Parvati	10												
Kinnaur	Kinnaur	21												
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2					2	1.5	2.0	1.0	2	1.5	2.0	1.0
Total of Graziers/ Grassland		59					2	1.5	2.0	1.0	2	1.5	2.0	1.0
Grand Total		400	1	2	2	2	4	1.8	2.7	1.7	5	1.8	2.5	1.8

Source: Livelihood Survey, JICA Study Team (2017)

7.9 Sources of Feed

Cow
Adult (1)

District	Division	Herd Size	JFM										Non JFM							Total										
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total				
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source					
Bilaspur	Bilaspur	60	3	1		3			3							10	2			2				6	5	1		3	2	16
	Bharmour	20	4		7											13	5							11	9	0	12	2	0	24
	Chamba WL	20														0	11	1	13	2				27	11	1	13	2	0	27
Chamba	Pangi	20	6		5	2										13	8	8					16	14	0	13	2	0	29	
	Kinnaur	40	8	1	5	1			1							16	10	4	7	7			28	18	1	9	8	0	44	
Kinnaur	Sarahan WL	20														0	11	9					30	11	0	9	9	1	30	
	Kullu	20	6		7	1										14	5		1	3			9	11	0	7	2	0	23	
Kullu	Kullu WL	20														0	12	1	8	1			25	12	1	8	1	0	25	
Lahaul & Spiti	Spiti(W/L)	20														0	10	7	4				22	10	0	7	4	0	22	
	Karsog	20	5		1	3			4							13	6	5		2			13	11	0	6	3	0	26	
Mandi	Mandi	20	4		6	3										13	6	2	8	4	1	1	22	10	2	14	7	0	35	
	Kotgarh	20	2		6	5			1	1						15	2	6	5		1	1	15	4	0	12	10	2	30	
	Rampur	21	7		2	2				1						12	7	2	2				12	14	0	4	4	0	24	
Shimla	Theog	20	9		4	8			1	3						25	9	4	8		2	3	26	18	0	8	16	3	51	
Total of Territorial		341	54	2	43	30	0	10	5	144	104	4	81	43	0	21	9	262	158	6	124	73	0	31	14	0	406			
Kangra	Bajnath	3														0	2						2	2	0	0	0	0	2	
Kullu	Kullu	11														0	9	2					1	12	9	0	2	0	12	
Mandi	Mandi	3														0	0						0	0	0	0	0	0	0	
Kangra	Palampur	1														0	1	1					2	1	0	1	0	0	2	
Kullu	Parvati	10														0		2					2	0	2	0	0	0	2	
Kinnaur	Kinnaur	21														0	3	1	3				7	3	1	3	0	0	7	
Shimla	Theog	1														0		1					1	0	1	0	0	0	1	
Solan	Nalagarh	5														0	0						0	0	0	0	0	0	0	
Shimla	Kotgarh	2														0	0						0	0	0	0	0	0	0	
Solan	Baddi	2														0							2	0	0	0	0	0	2	
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	15	3	7	0	0	2	2	1	28	15	3	7	0	0	2	1	28			
Grand Total		400	54	2	43	30	0	10	5	144	119	7	88	43	0	23	10	290	173	9	131	73	0	33	15	434				

Source: Livelihood Survey, JICA Study Team (2017)

Cow
Adult (2)

District	Division	Herd Size	% to Total							Total
			1	2	3	4	5	6	7	
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	31.3	6.3	12.5	18.8	0.0	18.8	12.5	100.0
	Bharmour	20	37.5	0.0	50.0	8.3	0.0	4.2	0.0	100.0
	Chamba WL	20	40.7	3.7	48.1	7.4	0.0	0.0	0.0	100.0
Chamba	Pangi	20	48.3	0.0	44.8	6.9	0.0	0.0	0.0	100.0
	Kinnaur	40	40.9	2.3	20.5	18.2	0.0	18.2	0.0	100.0
Kinnaur	Sarahan WL	20	36.7	0.0	30.0	30.0	0.0	3.3	0.0	100.0
	Kullu	20	47.8	0.0	30.4	8.7	0.0	13.0	0.0	100.0
Kullu	Kullu WL	20	48.0	4.0	32.0	4.0	0.0	12.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20	45.5	0.0	31.8	18.2	0.0	0.0	4.5	100.0
	Karsog	20	42.3	0.0	23.1	11.5	0.0	23.1	0.0	100.0
Mandi	Mandi	20	28.6	5.7	40.0	20.0	0.0	2.9	2.9	100.0
	Kotgarh	20	13.3	0.0	40.0	33.3	0.0	6.7	6.7	100.0
	Rampur	21	58.3	0.0	16.7	16.7	0.0	0.0	8.3	100.0
Shimla	Theog	20	35.3	0.0	15.7	31.4	0.0	5.9	11.8	100.0
Total of Territorial		341	38.9	1.5	30.5	18.0	0.0	7.6	3.4	100.0
Kangra	Bajnath	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Kullu	Kullu	11	75.0	0.0	16.7	0.0	0.0	0.0	8.3	100.0
Mandi	Mandi	3	-	-	-	-	-	-	-	0.0
Kangra	Palampur	1	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0
Kullu	Parvati	10	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Kinnaur	Kinnaur	21	42.9	14.3	42.9	0.0	0.0	0.0	0.0	100.0
Shimla	Theog	1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Solan	Nalagarh	5	-	-	-	-	-	-	-	0.0
Shimla	Kotgarh	2	-	-	-	-	-	-	-	0.0
Solan	Baddi	2	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0
Total of Graziers/ Grassland		59	53.6	10.7	25.0	0.0	0.0	7.1	3.6	100.0
Grand Total		400	39.9	2.1	30.2	16.8	0.0	7.6	3.5	100.0

Source: Livelihood Survey, JICA Study Team (2017)

Cow Young (1)

District	Division	Holders	JFM							Non JFM							Total									
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60							0	1						1	3	1	0	1	0	0	0	1	3	
	Bharmour	20	1		3				4	2		1				1	4	3	0	4	0	0	1	0	8	
	Chamba WL	20							0	3		3					6	3	0	3	0	0	0	0	6	
Chamba	Pangi	20							0	3		3					6	3	0	3	0	0	0	0	6	
	Kinnaur	40	2		5	2			9	4		3	1		2	10	6	0	8	3	0	2	0	19		
Kinnaur	Sarahan WL	20							0	2		3	3			8	2	0	3	3	0	0	0	8		
	Kullu	20	3		3				6	2		1		2	5	5	0	3	1	0	2	0	0	11		
Kullu	Kullu WL	20							0	6		3			3	12	6	0	3	0	0	3	0	12		
Lahaul & Spiti	Spiri(W/L)	20							0	3		3	1			7	3	0	3	1	0	0	0	7		
	Karsog	20	2			1		2	5	6		4	1	2	13	8	0	4	2	0	4	0	0	18		
Mandi	Mandi	20	3		4	1			8	4		5	5	1	15	7	0	9	6	1	0	0	0	23		
	Kotgarh	20	1		1	1			3	2		1			3	3	0	2	1	0	0	0	0	6		
	Rampur	21	3			1			4	3		4	2		9	6	0	4	3	0	0	0	0	13		
Shimla	Theog	20	5		3	5		1	16	3		2		2	7	8	0	5	5	0	3	2	0	23		
Total of Territorial		341	20	0	19	11	0	3	55	44	0	36	14	1	12	1	108	64	0	55	25	1	15	3	163	
Kangra	Bajjnath	3							0	0						0	0	0	0	0	0	0	0	0	0	
Kullu	Kullu	11							0	6	1	2			1	10	6	1	2	0	0	0	1	10		
Mandi	Mandi	3							0	0					0	0	0	0	0	0	0	0	0	0	0	
Kangra	Palampur	1							0	0					0	0	0	0	0	0	0	0	0	0	0	
Kullu	Parvati	10							0	1	2				3	1	2	0	0	0	0	0	0	3	0	
Kinnaur	Kinnaur	21							0	3	1	3			7	3	1	3	0	0	0	0	0	0	7	
Shimla	Theog	1							0			1			1	0	0	1	0	0	0	0	0	1	0	
Solan	Nalagarh	5							0	0					0	0	0	0	0	0	0	0	0	0	0	
Shimla	Kotgarh	2							0	0					0	0	0	0	0	0	0	0	0	0	0	
Solan	Baddi	2							0	0				2	2	0	0	0	0	0	0	2	0	0	2	
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	10	4	6	0	0	2	1	23	10	4	6	0	0	2	1	23	
Grand Total		400	20	0	19	11	0	3	55	54	4	42	14	1	14	2	131	74	4	61	25	1	17	4	186	

Source: Livelihood Survey, JICA Study Team (2017)

Cow Young (2)

District	Division	Holders	% to Total							Total
			1	2	3	4	5	6	7	
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	33.3	0.0	33.3	0.0	0.0	0.0	33.3	100.0
	Bharmour	20	37.5	0.0	50.0	0.0	0.0	12.5	0.0	100.0
	Chamba WL	20	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0
Chamba	Pangi	20	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0
	Kinnaur	40	31.6	0.0	42.1	15.8	0.0	10.5	0.0	100.0
Kinnaur	Sarahan WL	20	25.0	0.0	37.5	37.5	0.0	0.0	0.0	100.0
	Kullu	20	45.5	0.0	27.3	9.1	0.0	18.2	0.0	100.0
Kullu	Kullu WL	20	50.0	0.0	25.0	0.0	0.0	25.0	0.0	100.0
Lahaul & Spiti	Spiri(W/L)	20	42.9	0.0	42.9	14.3	0.0	0.0	0.0	100.0
	Karsog	20	44.4	0.0	22.2	11.1	0.0	22.2	0.0	100.0
Mandi	Mandi	20	30.4	0.0	39.1	26.1	4.3	0.0	0.0	100.0
	Kotgarh	20	50.0	0.0	33.3	16.7	0.0	0.0	0.0	100.0
	Rampur	21	46.2	0.0	30.8	23.1	0.0	0.0	0.0	100.0
Shimla	Theog	20	34.8	0.0	21.7	21.7	0.0	13.0	8.7	100.0
Total of Territorial		341	39.3	0.0	33.7	15.3	0.6	9.2	1.8	100.0
Kangra	Bajjnath	3	-	-	-	-	-	-	-	0.0
Kullu	Kullu	11	60.0	10.0	20.0	0.0	0.0	0.0	10.0	100.0
Mandi	Mandi	3	-	-	-	-	-	-	-	0.0
Kangra	Palampur	1	-	-	-	-	-	-	-	0.0
Kullu	Parvati	10	33.3	0.0	66.7	0.0	0.0	0.0	0.0	100.0
Kinnaur	Kinnaur	21	42.9	0.0	33.3	14.3	0.0	0.0	0.0	100.0
Shimla	Theog	1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Solan	Nalagarh	5	-	-	-	-	-	-	-	0.0
Shimla	Kotgarh	2	-	-	-	-	-	-	-	0.0
Solan	Baddi	2	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0
Total of Graziers/ Grassland		59	43.5	17.4	26.1	0.0	0.0	8.7	4.3	100.0
Grand Total		400	39.8	2.2	32.8	13.4	0.5	9.1	2.2	100.0

Source: Livelihood Survey, JICA Study Team (2017)

7.10 Buffalo Adult (1)

District	Division	Herd Size	JFM										Non JFM							Total						
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	24	2	7	15	1	10	1	60	11			11	9		2	35	35	2	18	24	1	12	3	95
	Bharnour	20								0								0	0	0	0	0	0	0	0	0
	Chamba WL	20								0								0	0	0	0	0	0	0	0	0
Chamba	Pangi	20								0								0	0	0	0	0	0	0	0	0
	Kinnaur	40								0								0	0	0	0	0	0	0	0	0
	Sarahan WL	20								0								0	0	0	0	0	0	0	0	0
	Kullu	20								0								0	0	0	0	0	0	0	0	0
Kullu	Kullu WL	20								0								0	0	0	0	0	0	0	0	0
Lahaul & Spiti	Spiri(W/L)	20								0								0	0	0	0	0	0	0	0	0
	Karsog	20								0								0	0	0	0	0	0	0	0	0
Mandi	Mandi	20	1		3				4	1	1						2	2	1	3	0	0	0	0	6	
	Kotgarh	20							0								0	0	0	0	0	0	0	0	0	
	Rampur	21							0								0	0	0	0	0	0	0	0	0	
	Theog	20							0								0	0	0	0	0	0	0	0	0	
Total of Territorial		341	25	2	10	15	1	10	1	64	12	1	11	9	0	2	2	37	37	3	21	24	1	12	3	101
Kangra	Bajinath	3								0								0	0	0	0	0	0	0	0	0
Kullu	Kullu	11								2			1					3	2	0	1	0	0	0	0	3
Mandi	Mandi	3								0								0	0	0	0	0	0	0	0	0
Kangra	Palampur	1								0								0	0	0	0	0	0	0	0	0
Kullu	Parvati	10								0								0	0	0	0	0	0	0	0	0
Kinnaur	Kinnaur	21								0								0	0	0	0	0	0	0	0	0
Shimla	Theog	1								0			1					1	0	0	1	0	0	0	0	1
Solan	Nalagarh	5								2			1					3	2	0	1	0	0	0	0	3
Shimla	Kotgarh	2								0			2					2	0	0	2	0	0	0	0	2
Solan	Baddi	2								0						2		2	0	0	0	0	0	2	0	2
Total of Graziers/ Grassland		59									4	0	5	0	0	2	0	11	4	0	5	0	0	2	0	11
Grand Total		400									16	1	16	9	0	4	2	48	41	3	26	24	1	14	3	112

Source: Livelihood Survey, JICA Study Team (2017)

7.10 Buffalo Adult (2)

District	Division	Herd Size	Total %							Total
			1	2	3	4	5	6	7	
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	36.8	2.1	18.9	25.3	1.1	12.6	3.2	100.0
	Bharnour	20	-	-	-	-	-	-	-	0.0
	Chamba WL	20	-	-	-	-	-	-	-	0.0
Chamba	Pangi	20	-	-	-	-	-	-	-	0.0
	Kinnaur	40	-	-	-	-	-	-	-	0.0
	Sarahan WL	20	-	-	-	-	-	-	-	0.0
	Kullu	20	-	-	-	-	-	-	-	0.0
	Kullu WL	20	-	-	-	-	-	-	-	0.0
Lahaul & Spiti	Spiri(W/L)	20	-	-	-	-	-	-	-	0.0
	Karsog	20	-	-	-	-	-	-	-	0.0
Mandi	Mandi	20	33.3	16.7	50.0	0.0	0.0	0.0	0.0	100.0
	Kotgarh	20	-	-	-	-	-	-	-	0.0
	Rampur	21	-	-	-	-	-	-	-	0.0
	Theog	20	-	-	-	-	-	-	-	0.0
Total of Territorial		341	36.6	3.0	20.8	23.8	1.0	11.9	3.0	100.0
Kangra	Bajinath	3	-	-	-	-	-	-	-	0.0
Kullu	Kullu	11	66.7	0.0	33.3	0.0	0.0	0.0	0.0	100.0
Mandi	Mandi	3	-	-	-	-	-	-	-	0.0
Kangra	Palampur	1	-	-	-	-	-	-	-	0.0
Kullu	Parvati	10	-	-	-	-	-	-	-	0.0
Kinnaur	Kinnaur	21	-	-	-	-	-	-	-	0.0
Shimla	Theog	1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Solan	Nalagarh	5	66.7	0.0	33.3	0.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	2	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Solan	Baddi	2	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0
Total of Graziers/ Grassland		59	36.4	0.0	45.5	0.0	0.0	18.2	0.0	100.0
Grand Total		400	36.6	2.7	23.2	21.4	0.9	12.5	2.7	100.0

Source: Livelihood Survey, JICA Study Team (2017)

7.10 Buffalo Young (1)

District	Division	Herd	JFM							Non JFM							Total									
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	9		1	6		4									11	12	0	6	8	0	5	0	31	
	Bharmour	20															0	0	0	0	0	0	0	0	0	
	Chamba WL	20															0	0	0	0	0	0	0	0	0	
Chamba	Pangi	20															0	0	0	0	0	0	0	0	0	
	Kinnaur	40															0	0	0	0	0	0	0	0	0	
	Sarahan WL	20															0	0	0	0	0	0	0	0	0	
	Kullu	20															0	0	0	0	0	0	0	0	0	
Kullu	Kullu WL	20															0	0	0	0	0	0	0	0	0	
Lahaul & Spiti	Spiti(W/L)	20															0	0	0	0	0	0	0	0	0	
	Karsog	20															0	0	0	0	0	0	0	0	0	
Mandi	Mandi	20															0	0	0	0	0	0	0	0	0	
	Kotgarh	20															0	0	0	0	0	0	0	0	0	
	Rampur	21															0	0	0	0	0	0	0	0	0	
	Theog	20															0	0	0	0	0	0	0	0	0	
Total of Territorial		341	9	0	1	6	0	4	0	20	3	0	5	2	0	1	11	12	0	6	8	0	5	0	31	
Kangra	Bajinath	3															0	0	0	0	0	0	0	0	0	
Kullu	Kullu	11									1						1	1	0	0	0	0	0	0	1	
Mandi	Mandi	3															0	0	0	0	0	0	0	0	0	
Kangra	Palampur	1															0	0	0	0	0	0	0	0	0	
Kullu	Parvati	10															0	0	0	0	0	0	0	0	0	
Kinnaur	Kinnaur	21															0	0	0	0	0	0	0	0	0	
Shimla	Theog	1											1				1	0	0	1	0	0	0	0	1	
Solan	Nalagarh	5									1		1				2	1	0	1	0	0	0	0	2	
Shimla	Kotgarh	2											2				2	0	0	2	0	0	0	0	2	
Solan	Baddi	2															2	0	0	0	0	0	2	0	2	
Total of Graziers/ Grassland		59									2	0	4	0	0	2	8	2	0	4	0	0	2	0	8	
Grand Total		400									5	0	9	2	0	3	19	14	0	10	8	0	7	0	39	

Source: Livelihood Survey, JICA Study Team (2017)

7.10 Buffalo Young (2)

District	Division	Herd	Total %							Total
			1	2	3	4	5	6	7	
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	38.7	0.0	19.4	25.8	0.0	16.1	0.0	100.0
	Bharmour	20	-	-	-	-	-	-	-	0.0
	Chamba WL	20	-	-	-	-	-	-	-	0.0
Chamba	Pangi	20	-	-	-	-	-	-	-	0.0
	Kinnaur	40	-	-	-	-	-	-	-	0.0
	Sarahan WL	20	-	-	-	-	-	-	-	0.0
	Kullu	20	-	-	-	-	-	-	-	0.0
	Kullu WL	20	-	-	-	-	-	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20	-	-	-	-	-	-	-	0.0
	Karsog	20	-	-	-	-	-	-	-	0.0
Mandi	Mandi	20	-	-	-	-	-	-	-	0.0
	Kotgarh	20	-	-	-	-	-	-	-	0.0
	Rampur	21	-	-	-	-	-	-	-	0.0
	Theog	20	-	-	-	-	-	-	-	0.0
Total of Territorial		341	38.7	0.0	19.4	25.8	0.0	16.1	0.0	100.0
Kangra	Bajinath	3	-	-	-	-	-	-	-	0.0
Kullu	Kullu	11	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Mandi	Mandi	3	-	-	-	-	-	-	-	0.0
Kangra	Palampur	1	-	-	-	-	-	-	-	0.0
Kullu	Parvati	10	-	-	-	-	-	-	-	0.0
Kinnaur	Kinnaur	21	-	-	-	-	-	-	-	0.0
Shimla	Theog	1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Solan	Nalagarh	5	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	2	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Solan	Baddi	2	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Total of Graziers/ Grassland		59	25.0	0.0	50.0	0.0	0.0	25.0	0.0	100.0
Grand Total		400	35.9	0.0	25.6	0.0	17.9	0.0	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

7.11 Goat Adult (1)

District	Division	Herd	JFM							Non JFM							Total									
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	15	2	4	12	1	3	37	1							4	16	2	5	14	1	3	0	41	
	Bharmour	20	3		5				8	1			2				3	4	0	7	0	0	0	0	11	
	Chamba WL	20							0	1			1				2	1	0	1	0	0	0	0	2	
Chamba	Pangi	20	1		1	2			4	2		2					4	3	0	3	2	0	0	0	8	
	Kinnaur	40							0	1		1	1				3	1	0	1	1	0	0	0	3	
Kinnaur	Sarahan WL	20							0	3		4	3				10	3	0	4	3	0	0	0	10	
	Kullu	20							0								0	0	0	0	0	0	0	0	0	
Kullu	Kullu WL	20							0	2		2					4	2	0	2	0	0	0	0	4	
Lahaul & Spiti	Spiti(W/L)	20							0								0	0	0	0	0	0	0	0	0	
	Karsog	20							0								0	0	0	0	0	0	0	0	0	
Mandi	Mandi	20	1		2				3				1				1	1	0	2	1	0	0	0	4	
	Kotgarh	20			1	1			2								0	0	0	1	1	0	0	0	2	
	Rampur	21			1				1	1		2					3	1	0	3	0	0	0	0	4	
Shimla	Theog	20							0								0	0	0	0	0	0	0	0	0	
Total of Territorial		341	20	2	14	15	1	3	55	12	0	15	7	0	0	0	34	32	2	29	22	1	3	0	89	
Kangra	Bajnath	3										1					1	0	0	1	0	0	0	0	1	
Kullu	Kullu	11										1					1	0	0	1	0	0	0	0	1	
Mandi	Mandi	3															0	0	0	0	0	0	0	0	0	
Kangra	Palampur	1															0	0	0	0	0	0	0	0	0	
Kullu	Parvati	10											1				4	0	3	1	0	0	0	0	4	
Kinnaur	Kinnaur	21										1					1	0	1	0	0	0	0	0	1	
Shimla	Theog	1															0	0	0	0	0	0	0	0	0	
Solan	Nalagarh	5															0	0	0	0	0	0	0	0	0	
Shimla	Kotgarh	2															0	0	0	0	0	0	0	0	0	
Solan	Baddi	2															0	0	0	0	0	0	0	0	0	
Total of Graziers/ Grassland		59								0	4	3	0	0	0	0	7	0	4	3	0	0	0	0	7	
Grand Total		400								12	4	18	7	0	0	0	41	32	6	32	22	1	3	0	96	

Source: Livelihood Survey, JICA Study Team (2017)

7.11 Goat Adult (2)

District	Division	Herd	% to Total							Total
			1	2	3	4	5	6	7	
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	39.0	4.9	12.2	34.1	2.4	7.3	0.0	100.0
	Bharmour	20	36.4	0.0	63.6	0.0	0.0	0.0	0.0	100.0
	Chamba WL	20	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0
Chamba	Pangi	20	37.5	0.0	37.5	25.0	0.0	0.0	0.0	100.0
	Kinnaur	40	33.3	0.0	33.3	33.3	0.0	0.0	0.0	100.0
Kinnaur	Sarahan WL	20	30.0	0.0	40.0	30.0	0.0	0.0	0.0	100.0
	Kullu	20	-	-	-	-	-	-	-	0.0
Kullu	Kullu WL	20	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20	-	-	-	-	-	-	-	0.0
	Karsog	20	-	-	-	-	-	-	-	0.0
Mandi	Mandi	20	25.0	0.0	50.0	25.0	0.0	0.0	0.0	100.0
	Kotgarh	20	0.0	0.0	50.0	50.0	0.0	0.0	0.0	100.0
	Rampur	21	25.0	0.0	75.0	0.0	0.0	0.0	0.0	100.0
Shimla	Theog	20	-	-	-	-	-	-	-	0.0
Total of Territorial		341	36.0	2.2	32.6	24.7	1.1	3.4	0.0	100.0
Kangra	Bajnath	3	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Kullu	Kullu	11	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Mandi	Mandi	3	-	-	-	-	-	-	-	0.0
Kangra	Palampur	1	-	-	-	-	-	-	-	0.0
Kullu	Parvati	10	0.0	75.0	25.0	0.0	0.0	0.0	0.0	100.0
Kinnaur	Kinnaur	21	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Shimla	Theog	1	-	-	-	-	-	-	-	0.0
Solan	Nalagarh	5	-	-	-	-	-	-	-	0.0
Shimla	Kotgarh	2	-	-	-	-	-	-	-	0.0
Solan	Baddi	2	-	-	-	-	-	-	-	0.0
Total of Graziers/ Grassland		59	0.0	57.1	42.9	0.0	0.0	0.0	0.0	100.0
Grand Total		400	33.3	6.3	33.3	22.9	1.0	3.1	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

7.11 Goat Young (1)

District	Division	Herd/Stocks	JFM							Non JFM							Total									
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	4			1			5								0	4	0	0	1	0	0	0	5	
	Bharmour	20	1		1				2								0	1	0	1	0	0	0	0	2	
	Chamba WL	20							0							0	0	0	0	0	0	0	0	0	0	
Chamba	Pangi	20							0	2		2					4	2	0	2	0	0	0	0	4	
	Kinnaur	40							0								0	0	0	0	0	0	0	0	0	
	Sarahan WL	20							0								0	0	0	0	0	0	0	0	0	
	Kullu	20							0								0	0	0	0	0	0	0	0	0	
Kullu	Kullu WL	20							0								0	0	0	0	0	0	0	0	0	
Lahaul & Spiti	Spiti(W/L)	20							0								0	0	0	0	0	0	0	0	0	
	Karsog	20							0								0	0	0	0	0	0	0	0	0	
Mandi	Mandi	20							0								0	0	0	0	0	0	0	0	0	
	Kotgarh	20							0								0	0	0	0	0	0	0	0	0	
	Rampur	21							0								0	0	0	0	0	0	0	0	0	
	Theog	20							0								0	0	0	0	0	0	0	0	0	
Total of Territorial		341	5	0	1	1	0	0	7	2	0	2	0	0	0	0	4	7	0	3	1	0	0	11		
Kangra	Bajinath	3							1			1					1	0	0	1	0	0	0	0	1	
	Kullu	11							1			1					1	0	0	1	0	0	0	0	1	
Mandi	Mandi	3							0			0					0	0	0	0	0	0	0	0	0	
Kangra	Palampur	1							0			0					0	0	0	0	0	0	0	0	0	
	Parvati	10							2			2					2	0	2	0	0	0	0	0	2	
Kinnaur	Kinnaur	21							0			0					0	0	0	0	0	0	0	0	0	
Shimla	Theog	1							0			0					0	0	0	0	0	0	0	0	0	
Solan	Nalagarh	5							0			0					0	0	0	0	0	0	0	0	0	
Shimla	Kotgarh	2							0			0					0	0	0	0	0	0	0	0	0	
Solan	Baddi	2							0			0					0	0	0	0	0	0	0	0	0	
Total of Graziers/ Grassland		59							0	2	2	0	0	0	0	0	4	0	2	2	0	0	0	4		
Grand Total		400							2	2	4	0	0	0	0	0	8	7	2	5	1	0	0	15		

Source: Livelihood Survey, JICA Study Team (2017)

7.11 Goat Young (2)

District	Division	Herd/Stocks	% to Total							Total
			1	2	3	4	5	6	7	
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	80.0	0.0	0.0	20.0	0.0	0.0	0.0	100.0
	Bharmour	20	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0
	Chamba WL	20	-	-	-	-	-	-	-	0.0
Chamba	Pangi	20	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0
	Kinnaur	40	-	-	-	-	-	-	-	0.0
	Sarahan WL	20	-	-	-	-	-	-	-	0.0
	Kullu	20	-	-	-	-	-	-	-	0.0
	Kullu WL	20	-	-	-	-	-	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20	-	-	-	-	-	-	-	0.0
	Karsog	20	-	-	-	-	-	-	-	0.0
Mandi	Mandi	20	-	-	-	-	-	-	-	0.0
	Kotgarh	20	-	-	-	-	-	-	-	0.0
	Rampur	21	-	-	-	-	-	-	-	0.0
	Theog	20	-	-	-	-	-	-	-	0.0
Total of Territorial		341	63.6	0.0	27.3	9.1	0.0	0.0	0.0	100.0
Kangra	Bajinath	3	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
	Kullu	11	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Mandi	Mandi	3	-	-	-	-	-	-	-	0.0
Kangra	Palampur	1	-	-	-	-	-	-	-	0.0
	Parvati	10	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Kinnaur	Kinnaur	21	-	-	-	-	-	-	-	0.0
Shimla	Theog	1	-	-	-	-	-	-	-	0.0
Solan	Nalagarh	5	-	-	-	-	-	-	-	0.0
Shimla	Kotgarh	2	-	-	-	-	-	-	-	0.0
Solan	Baddi	2	-	-	-	-	-	-	-	0.0
Total of Graziers/ Grassland		59	0.0	50.0	50.0	0.0	0.0	0.0	0.0	100.0
Grand Total		400	46.7	13.3	33.3	6.7	0.0	0.0	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

7.12 Sheep Adult (1)

District	Division	Herd Size	JFM							Non JFM							Total									
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60							0								0									0
	Bharmour	20	1		3				4								0		1	0	3	0	0	0	0	4
	Chamba WL	20							0								0		0	0	0	0	0	0	0	0
Chamba	Pangi	20	1		1	2			4	2	1	2					5	3	1	3	2	0	0	0	9	
	Kinnaur	40							0								0		0	0	0	0	0	0	0	0
Kinnaur	Sarahan WL	20							0	1		1	1				3	1	0	1	1	0	0	0	3	
	Kullu	20	2		2				4								4	2	0	2	0	0	0	0	4	
Kullu	Kullu WL	20							0	1		2					3	1	0	2	0	0	0	0	3	
Lahaul & Spiti	Spiri(W/L)	20							0								0	0	0	0	0	0	0	0	0	0
	Karsog	20							0								0	0	0	0	0	0	0	0	0	0
Mandi	Mandi	20	1		2	1			4	1	1	2	2				6	2	1	4	3	0	0	0	10	
	Kotgarh	20							0								0	0	0	0	0	0	0	0	0	0
	Rampur	21							0	1		3	1				5	1	0	3	1	0	0	0	5	
Shimla	Theog	20							0								0	0	0	0	0	0	0	0	0	0
Total of Territorial		341	5	0	8	3	0	0	16	6	2	10	4	0	0	0	22	11	2	18	7	0	0	0	38	
Kangra	Bajinath	3										1					1	0	0	1	0	0	0	0	1	
Kullu	Kullu	11										1					1	0	0	1	0	0	0	0	1	
Mandi	Mandi	3															0	0	0	0	0	0	0	0	0	
Kangra	Palampur	1															0	0	0	0	0	0	0	0	0	
Kullu	Parvati	10										3	1				4	0	3	1	0	0	0	0	4	
Kinnaur	Kinnaur	21								1	1	2					4	1	1	2	0	0	0	0	4	
Shimla	Theog	1															0	0	0	0	0	0	0	0	0	
Solan	Nalagarh	5															0	0	0	0	0	0	0	0	0	
Shimla	Kotgarh	2															0	0	0	0	0	0	0	0	0	
Solan	Baddi	2															0	0	0	0	0	0	0	0	0	
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	1	4	5	0	0	0	0	10	1	4	5	0	0	0	0	10	
Grand Total		400	5	0	8	3	0	0	16	7	6	15	4	0	0	0	32	12	6	23	7	0	0	0	48	

Source: Livelihood Survey, JICA Study Team (2017)

7.12 Sheep Adult (2)

District	Division	Herd Size	% to Total							Total																
			1	2	3	4	5	6	7																	
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source																	
Bilaspur	Bilaspur	60																								0
	Bharmour	20	25.0			75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Chamba WL	20																								0.0
Chamba	Pangi	20	33.3	11.1		33.3	22.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Kinnaur	40																								0.0
Kinnaur	Sarahan WL	20	33.3	0.0		33.3	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Kullu	20	50.0	0.0		50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu WL	20	33.3	0.0		66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Lahaul & Spiti	Spiri(W/L)	20																								0.0
	Karsog	20																								0.0
Mandi	Mandi	20	20.0	10.0		40.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
	Kotgarh	20																								0.0
	Rampur	21	20.0	0.0		60.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Theog	20																								0.0
Total of Territorial		341	28.9	5.3	47.4	18.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	1	4	5	0	0	0	0	100.0	
Kangra	Bajinath	3	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu	11	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Mandi	Mandi	3																								0.0
Kangra	Palampur	1																								0.0
Kullu	Parvati	10	0.0			75.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Kinnaur	Kinnaur	21	25.0	25.0		50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Theog	1																								0.0
Solan	Nalagarh	5																								0.0
Shimla	Kotgarh	2																								0.0
Solan	Baddi	2																								0.0
Total of Graziers/ Grassland		59	10.0	4.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	1	4	5	0	0	0	0	100.0	
Grand Total		400	25.0	12.5	47.9	14.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	12	6	23	7	0	0	0	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

7.12 Sheep Young (1)

District	Division	Herd Size	JFM							Non JFM							Total									
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60							0								0									0
	Bharmour	20	1						1								0									1
	Chamba WL	20							0								0									0
Chamba	Pangi	20							0	1			1				2	1			1					2
	Kinnaur	40							0								0									0
Kinnaur	Sarahan WL	20							0								0									0
	Kullu	20							0								0									0
Kullu	Kullu WL	20							0	1							1	1			0					1
Lahaul & Spiti	Spiri(W/L)	20							0								0									0
	Karsog	20							0								0									0
Mandi	Mandi	20							0								1							1		1
	Kotgarh	20							0								0									0
	Rampur	21							0								0									0
Shimla	Theog	20							0								0									0
Total of Territorial		341	1	0	0	0	0	0	1	2	0	1	0	1	0	0	4	3	0	1	0	1	0	0	5	
Kangra	Bajnath	3							0								0									0
Kullu	Kullu	11							0								0									0
Mandi	Mandi	3							0								0									0
Kangra	Palampur	1							0								0									0
Kullu	Parvati	10							0								1			1						1
Kinnaur	Kinnaur	21							0								0									0
Shimla	Theog	1							0								0									0
Solan	Nalagarh	5							0								0									0
Shimla	Kotgarh	2							0								0									0
Solan	Baddi	2							0								0									0
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	
Grand Total		400	1	0	0	0	0	0	1	2	1	1	0	1	0	0	5	3	1	1	0	1	0	0	6	

Source: Livelihood Survey, JICA Study Team (2017)

7.12 Sheep Young (2)

District	Division	Herd Size	% to Total							Total																	
			1	2	3	4	5	6	7																		
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source																		
Bilaspur	Bilaspur	60																								0.0	
	Bharmour	20	100.0						0.0								0.0										100.0
	Chamba WL	20																									0.0
Chamba	Pangi	20	50.0			50.0			0.0								0.0										100.0
	Kinnaur	40																									0.0
Kinnaur	Sarahan WL	20																									0.0
	Kullu	20																									0.0
Kullu	Kullu WL	20	100			0			0							0											100.0
Lahaul & Spiti	Spiri(W/L)	20																									0.0
	Karsog	20																									0.0
Mandi	Mandi	20	0.0		0.0		0.0		100.0							0.0											100.0
	Kotgarh	20																									0.0
	Rampur	21																									0.0
Shimla	Theog	20																									0.0
Total of Territorial		341	60.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	5.0	3.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	100.0	
Kangra	Bajnath	3																									0.0
Kullu	Kullu	11																									0.0
Mandi	Mandi	3																									0.0
Kangra	Palampur	1																									0.0
Kullu	Parvati	10	0.0		100.0		0.0		0.0						0.0												100.0
Kinnaur	Kinnaur	21																									0.0
Shimla	Theog	1																									0.0
Solan	Nalagarh	5																									0.0
Shimla	Kotgarh	2																									0.0
Solan	Baddi	2																									0.0
Total of Graziers/ Grassland		59	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	5.0	3.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	100.0	
Grand Total		400	50.0	16.7	16.7	0.0	16.7	0.0	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	5.0	3.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

7.13 Ox Adult (1)

District	Division	Herd Size	JFM							Non JFM							Total									
			1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total	1	2	3	4	5	6	7	Total
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source		Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	3	2	1	3			9	5	5	4	1			15	8	7	5	4	0	0	0	0	24	
	Bharmour	20	3	3	5	2			13	3	1	1			5	6	4	6	2	0	0	0	0	0	18	
	Chamba WL	20							0	11	1	5	1		18	11	1	5	1	0	0	0	0	0	18	
Chamba	Pangi	20	1			1			2	2		1			3	3	0	1	1	0	0	0	0	0	5	
	Kinnaur	40							0						0	0	0	0	0	0	0	0	0	0	0	
Kinnaur	Sarahan WL	20							0						0	0	0	0	0	0	0	0	0	0	0	
	Kullu	20	1	1	1				3						0	1	1	1	0	0	0	0	0	0	3	
Kullu	Kullu WL	20							0						0	0	0	0	0	0	0	0	0	0	0	
Lahaul & Spiti	Spiri(W/L)	20							0						0	0	0	0	0	0	0	0	0	0	0	
	Karsog	20	5	5	1			1	12	2	2	2			6	7	7	3	0	0	1	0	0	0	18	
Mandi	Mandi	20	4	3	2	2			11	4	4	3	1		14	8	7	5	3	0	1	1	0	0	25	
	Kotgarh	20							0						0	0	0	0	0	0	0	0	0	0	0	
	Rampur	21	1		1				2	4		3	2		9	5	0	4	2	0	0	0	0	0	11	
Shimla	Theog	20	1		1				3						0	1	0	1	0	0	1	0	0	0	3	
Total of Territorial		341	19	14	12	8	0	2	0	55	31	13	19	5	0	1	1	70	50	27	31	13	0	3	1	125
Kangra	Bajnath	3							0						0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Kullu	11							0						0	0	0	0	0	0	0	0	0	0	0	0
Mandi	Mandi	3							0						0	0	0	0	0	0	0	0	0	0	0	0
Kangra	Palampur	1							0						0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10							0						0	0	0	0	0	0	0	0	0	0	0	0
Kinnaur	Kinnaur	21							0						0	0	0	0	0	0	0	0	0	0	0	0
Shimla	Theog	1							0						0	0	0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5							0						0	0	0	0	0	0	0	0	0	0	0	0
Shimla	Kotgarh	2							0						0	0	0	0	0	0	0	0	0	0	0	0
Solan	Baddi	2							0						0	0	0	0	0	0	0	0	0	0	0	0
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total		400	19	14	12	8	0	2	0	55	31	13	19	5	0	1	1	70	50	27	31	13	0	3	1	125

Source: Livelihood Survey, JICA Study Team (2017)

7.13 Ox Adult (2)

District	Division	Herd Size	% to Total							Total
			1	2	3	4	5	6	7	
			Agriculture Field	Own Forest	Government Forest	Own Grassland	Revenue Pasture (Common Land)	Purchased	Mixed Source	
Bilaspur	Bilaspur	60	33.3	29.2	20.8	16.7	0.0	0.0	0.0	100.0
	Bharmour	20	33.3	22.2	33.3	11.1	0.0	0.0	0.0	100.0
	Chamba WL	20	61.1	5.6	27.8	5.6	0.0	0.0	0.0	100.0
Chamba	Pangi	20	60.0	0.0	20.0	20.0	0.0	0.0	0.0	100.0
	Kinnaur	40	-	-	-	-	-	-	-	0.0
Kinnaur	Sarahan WL	20	-	-	-	-	-	-	-	0.0
	Kullu	20	33.3	33.3	33.3	0.0	0.0	0.0	0.0	100.0
Kullu	Kullu WL	20	-	-	-	-	-	-	-	0.0
Lahaul & Spiti	Spiri(W/L)	20	-	-	-	-	-	-	-	0.0
	Karsog	20	38.9	38.9	16.7	0.0	0.0	5.6	0.0	100.0
Mandi	Mandi	20	32.0	28.0	20.0	12.0	0.0	4.0	4.0	100.0
	Kotgarh	20	-	-	-	-	-	-	-	0.0
	Rampur	21	45.5	0.0	36.4	18.2	0.0	0.0	0.0	100.0
Shimla	Theog	20	33.3	0.0	33.3	0.0	0.0	33.3	0.0	100.0
Total of Territorial		341	40.0	21.6	24.8	10.4	0.0	2.4	0.8	100.0
Kangra	Bajnath	3	-	-	-	-	-	-	-	0.0
Kullu	Kullu	11	-	-	-	-	-	-	-	0.0
Mandi	Mandi	3	-	-	-	-	-	-	-	0.0
Kangra	Palampur	1	-	-	-	-	-	-	-	0.0
Kullu	Parvati	10	-	-	-	-	-	-	-	0.0
Kinnaur	Kinnaur	21	-	-	-	-	-	-	-	0.0
Shimla	Theog	1	-	-	-	-	-	-	-	0.0
Solan	Nalagarh	5	-	-	-	-	-	-	-	0.0
Shimla	Kotgarh	2	-	-	-	-	-	-	-	0.0
Solan	Baddi	2	-	-	-	-	-	-	-	0.0
Total of Graziers/ Grassland		59	40.0	21.6	24.8	10.4	0.0	2.4	0.8	100.0
Grand Total		400	40.0	21.6	24.8	10.4	0.0	2.4	0.8	100.0

Source: Livelihood Survey, JICA Study Team (2017)

7.14 Weekly Expenditure on Purchased Feed (1)

District	Division	Households	JFM																	
			Cow		Buffalo		Poultry		Goat		Sheep		Pig		Yak		Ox		Horse	
			No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)
Bilaspur	Bilaspur	60	3	878	26	445			5	76							1	115		
	Bharmour	20	3	162																
	Chamba WL	20																		
	Pangi	20	4	650																
	Kinnaur	40	8	287																
	Sarahan WL	20																		
	Kullu	20	4	88						1	192						1	288		
	Kullu WL	20																		
	Lahaul & Spiti	20																		
	Spiti(W/L)	20																		
	Karsog	20	8	103	1	50											1	96		
	Mandi	20	4	247	3	333	1	38			1	19					1	138		
	Kotgarh	20	5	777			1	25												
	Rampur	21	4	103													1	50		
	Shimla	20	10	277																
	Theog	20																		
	Total of Territorial	341	53	325	30	421	2	32	5	76	2	106	0	0	0	0	5	137	0	0
	Kangra	Baijnath	3																	
	Kullu	Kullu	11																	
	Mandi	Mandi	3																	
	Kangra	Palampur	1																	
	Kullu	Parvati	10																	
	Kinnaur	Kinnaur	21																	
	Shimla	Theog	1																	
	Solan	Nalagarh	5																	
	Shimla	Kotgarh	2																	
	Solan	Baddi	2																	
	Total of Graziers/ Grassland	59																		
	Grand Total	400	53	325	30	421	2	32	5	76	2	106	0	0	0	0	5	137	0	0

Source: Livelihood Survey, JICA Study Team (2017)

7.14 Weekly Expenditure on Purchased Feed (2)

District	Division	Households	Non JFM																	
			Cow		Buffalo		Poultry		Goat		Sheep		Pig		Yak		Ox		Horse	
			No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)
Bilaspur	Bilaspur	60	2	144	16	340	1	3	2	2,050										
	Bharmour	20	7	249																
	Chamba WL	20	5	4,042					2	5,000	2	5,000								
	Pangi	20	7	145			1	25												
	Kinnaur	40	12	348					1	500	4	214								
	Sarahan WL	20	9	233					1	288										
	Kullu	20	4	187																
	Kullu WL	20	8	1,324					1	115	1	57								
	Lahaul & Spiti	20	11	215										1	38					
	Karsog	20	6	201																
	Mandi	20	7	223	1	115					1	200					2	165		
	Kotgarh	20	3	4,404																
	Rampur	21	1	48																
	Shimla	Theog	20	6	1,104															
	Total of Territorial	341	88	749	17	327	2	14	7	1,890	8	1,389	0	1	38	2	165	0	0	
	Kangra	Baijnath	3	3	223				3	383	3	383								
	Kullu	Kullu	11	8	496	1	278		1	500	2	750								
	Mandi	Mandi	3	1	500				1	8,000	1	12,000								
	Kangra	Palampur	1	1	500															
	Kullu	Parvati	10	1	2,000				2	1,100	2	950								
	Kinnaur	Kinnaur	21	10	685			1	300	2	200	4	488							
	Shimla	Theog	1	1	2,000	1	14,000													
	Solan	Nalagarh	5	5	1,795	2	20,000				1	150								
	Shimla	Kotgarh	2	2	13,500															
	Solan	Baddi	2	2	1,890	2	18,270				1	150							2	805
	Total of Graziers/ Grassland	59	32	914	8	14,727	1	300	9	1,361	14	1,343	0	1	38	2	165	0	2	805
	Grand Total	400	120	793	25	4,935	3	109	16	1,610	22	1,360	0	1	38	2	165	0	2	805

Source: Livelihood Survey, JICA Study Team (2017)

7.14 Weekly Expenditure on Purchased Feed (3)

District	Division	Households	Total																	
			Cow		Buffalo		Poultry		Goat		Sheep		Pig		Yak		Ox		Horse	
			No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)	No of Household	Average (INR)
Bilaspur	Bilaspur	60	5	584	42	405	1	3	7	640	0		0		0		1	115	0	
	Bharmour	20	10	223	0		0		0		0		0		0		0		0	
	Chamba WL	20	5	4,042	0		0		2	5,000	2	5,000	0		0		0		0	
Chamba	Pangi	20	11	328	0		1	25	0		0		0		0		0		0	
	Kinnaur	40	20	323	0		0		1	500	4	214	0		0		0		0	
Kinnaur	Sarahan WL	20	9	233	0		0		1	288	0		0		0		0		0	
	Kullu	20	11	137	0		0		1	192	1	192	0		0		1	288	0	
Kullu	Kullu WL	20	8	1,324	0		0		1	115	1	57	0		0		0		0	
Lahaul & Spiti	Spiti(W/L)	20	11	215	0		0		0		0		0		1	38	0		0	
	Karsog	20	14	145	1	50	0		0		0		0		0		1	96	0	
Mandi	Mandi	20	11	231	4	278	1	38	0		2	110	0		0		3	156	0	
	Kotgarh	20	8	2,137	0		1	25	0		0		0		0		0		0	
	Rampur	21	5	92	0		0		0		0		0		0		1	50	0	
Shimla	Theog	20	16	587	0		0		0		0		0		0		0		0	
Total of Territorial		341	144	590	47	387	4	23	13	1,192	10	1,133	0		1	38	7	145	0	
Kangra	Bainath	3	3	223					3	383	3	383								
Kullu	Kullu	11	8	496	1	278			1	500	2	750								
Mandi	Mandi	3	1	500					1	8,000	1	12,000								
Kangra	Palampur	1	1	500																
Kullu	Parvati	10	1	2,000					2	1,100	2	950								
Kinnaur	Kinnaur	21	10	685			1	300	2	200	4	488								
Shimla	Theog	1	1	2,000	1	14,000														
Solan	Nalagarh	5	5	1,795	2	20,000					1	150								
Shimla	Kotgarh	2	2	13,500																
Solan	Baddi	2	2	1,890	2	18,270					1	150							2	805
Total of Graziers/ Grassland		59	32	914	8	14,727	1	300	9	1,361	14	1,343	0		0		0		2	805
Grand Total		400	176	650	55	2,473	5	78	22	1,261	24	1,255	0		1	38	7	145	2	805

Source: Livelihood Survey, JICA Study Team (2017)

8. Grazing

Average duration of grazing between April 2016 - March 2017 (1)

District	Division	No of Respondent s Interviewed (a)	JFM								Non JFM							
			Forest Land (including Pastures)		Agricultural Fields (Private/ Own)		Revenue Pasture (Common Land)		Around Homestead		Forest Land (including Pastures)		Agricultural Fields (Private/ Own)		Revenue Pasture (Common Land)		Around Homestead	
			Counts of Responses	No of months	Counts of Responses	No of months	Counts of Responses	No of months	Counts of Responses	No of months	Counts of Responses	No of months	Counts of Responses	No of months	Counts of Responses	No of months	Counts of Responses	No of months
Bilaspur	Bilaspur	60	3	6.3	8	5.1					7	8.4	1	2.0				
	Bharmour	20	9	7.3	5	3.0					9	7.9	3	3.0				
	Chamba WL	20									19	7.5	8	3.7				
Chamba	Pangi	20	9	5.9	4	2.5					9	7.1	3	2.7				
	Kinnaur	40	7	7.7	1	1.0					8	6.5	5	4.8				
Kinnaur	Sarahan WL	20									9	8.4	4	2.3				
	Kullu	20	7	7.6	3	2.3							1	2.0				
Kullu	Kullu WL	20									10	6.2	2	3.0				
Lahaul & Spiti	Spiti(W/L)	20									10	6.3	4	4.5			1	12
	Karsog	20	2	12.0	1	2.0					5	4.4	5	4.0				
Mandi	Mandi	20	8	10.1	4	4.3					6	6.7	5	2.4				
	Kotgarh	20	2	7.5	2	2.5												
	Rampur	21	4	9.0	2	4.5					5	8.2	2	3.0	1	2.0		
Shimla	Theog	20	4	5.3	4	4.8					1	2.0	1	1.0				
Total of Territorial		341	55	7.7	34	3.7					98	7.1	44	3.3	2	2.0	1	12
Kangra	Bainath	3									3	4.7	1	6.0	1	6.0		
Kullu	Kullu	11									5	4.6	1	4.0				
Mandi	Mandi	3									3	4.0	2	5.5				
Kangra	Palampur	1									1	12.0						
Kullu	Parvati	10									3	5.5	2	6.5	1	8.0		
Kinnaur	Kinnaur	21									15	7.5	9	5.1	2	2.5		
Shimla	Theog	1									1	4.0	1	8.0				
Solan	Nalagarh	5									3	4.3	1	7.0				
Shimla	Kotgarh	2									2	5.0	2	7.0				
Solan	Baddi	2									2	6.0	2	6.0				
Total of Graziers/ Grassland		59									38	5.4	21	6.5	4	7.0		
Grand Total		400	55	7.7	34	3.7					136	6.8	65	4.1	6	3.8	1	12

Source: Livelihood Survey, JICA Study Team (2017)

Average duration of grazing between April 2016 - March 2017 (2)

District	Division	No of Respondent s Interviewed (a)	Total															
			Forest Land (including Pastures)		Agricultural Fields (Private/ Own)		Revenue Pasture (Common Land)		Around Homestead									
			Counts of Responses	No of months	Counts of Responses	No of months	Counts of Responses	No of months	Counts of Responses	No of months								
Bilaspur	Bilaspur	60	10	7.8	9	4.8	1	2.0										
	Bharmour	20	18	7.6	8	3.0												
	Chamba WL	20	19	7.5	8	3.7												
Chamba	Pangi	20	18	6.5	7	2.6												
	Kinnaur	40	15	7.0	6	4.2												
Kinnaur	Sarahan WL	20	9	8.4	4	2.3												
	Kullu	20	7	7.6	4	2.3												
Kullu	Kullu WL	20	10	6.2	2	3.0												
Lahaul & Spiti	Spiti(W/L)	20	10	6.3	4	4.5							1	12.0				
	Karsog	20	7	6.6	6	3.7												
Mandi	Mandi	20	14	8.6	9	3.2												
	Kotgarh	20	2	7.5	2	2.5												
	Rampur	21	9	8.6	4	3.8	1	2.0										
Shimla	Theog	20	5	4.6	5	4.0												
Total of Territorial		341	153	7.3	78	3.5	2	2.0	1	12.0								
Kangra	Bainath	3	3	4.7	1	6.0	1	6.0										
Kullu	Kullu	11	5	4.6	1	4.0												
Mandi	Mandi	3	3	4.0	2	5.5												
Kangra	Palampur	1	1	12.0														
Kullu	Parvati	10	3	5.5	2	6.5	1	8.0										
Kinnaur	Kinnaur	21	15	7.5	9	5.1	2	2.5										
Shimla	Theog	1	1	4.0	1	8.0												
Solan	Nalagarh	5	3	4.3	1	7.0												
Shimla	Kotgarh	2	2	5.0	2	7.0												
Solan	Baddi	2	2	6.0	2	6.0												
Total of Graziers/ Grassland		59	38	5.4	21	6.5	4	7.0										
Grand Total		400	191	7.0	99	4.0	6	3.8	1	12.0								

Source: Livelihood Survey, JICA Study Team (2017)

9. Household Energy

9.1 Types of Household Energies Used (Multiple Response)

District	Division	No of Respondents Interviewed (a)	JFM							Non JFM							Total							% to the Total Number of Respondents (n=a)								
			Fuelwood	Biogas	LPG	Kerosene	Solar	Electricity (Grid Connection)	Total	Fuelwood	Biogas	LPG	Kerosene	Solar	Electricity (Grid Connection)	Total	Fuelwood	Biogas	LPG	Kerosene	Solar	Electricity (Grid Connection)	Total	Fuelwood	Biogas	LPG	Kerosene	Solar	Electricity (Grid Connection)			
Bilaspur	Bilaspur	60	38			30	5		3	76	21			17	2		42	59	0		47	7		1	4	118	98.3	0.0	78.3	11.7	1.7	6.7
	Bharmour	20	10			4	1		1	16	8			5	3		17	18	0		9	4		0	2	33	90.0	0.0	45.0	20.0	0.0	10.0
	Chamba WL	20								0	19			17	5		42	19	0		17	5		0	1	42	95.0	0.0	85.0	25.0	0.0	5.0
Chamba	Pangi	20	10			7	6		1	24	10			10	4		24	20	0		17	10		0	1	48	100.0	0.0	85.0	50.0	0.0	5.0
	Kinnaur	40	18			17	5		2	42	21			19	6		49	39	0		36	11		0	5	91	97.5	0.0	90.0	27.5	0.0	12.5
	Sarahan WL	20								0	19			17	2		41	19	0		17	2		1	2	41	95.0	0.0	85.0	10.0	5.0	10.0
Kullu	Kullu	20	10			9	4			23	9			10			19	19	0		19	4		0	0	42	95.0	0.0	95.0	20.0	0.0	0.0
	Kullu WL	20								0	17			20	5		44	17	0		20	5		0	2	44	85.0	0.0	100.0	25.0	0.0	10.0
	Spirit(WL)	20								0	14			20	9		45	14	0		20	9		1	11	45	70.0	0.0	100.0	45.0	5.0	5.0
Lahaul & Spiti	Karsog	20	6			10				16	8			7	2		17	14	0		17	2		0	0	33	70.0	0.0	85.0	10.0	0.0	0.0
	Mandi	20	9			4			1	14	11			5			16	20	0		9	0		0	1	30	100.0	0.0	45.0	0.0	0.0	5.0
	Kotgarh	20	9			7			1	17	6			10	2		23	15	0		17	2		1	5	40	75.0	0.0	88.0	10.0	5.0	25.0
Mandi	Rampur	21	8			6	1		1	17	11			2			13	19	0		8	1		1	1	30	90.5	0.0	38.1	4.8	4.8	4.8
	Theog	20	9			10			2	21	8			9			18	17	0		19	0		3	39	85.0	0.0	95.0	0.0	0.0	15.0	
	Total of Territorial	341	127	0	104	22	1	12	266	182	0	168	40	4	16	410	309	0	272	62	5	28	676	96.6	0.0	79.8	18.2	1.5	8.2			
Kangra	Bajinath	3								3				3			6	3	0		3	0		0	0	6	100.0	0.0	100.0	0.0	0.0	0.0
	Kullu	11								10			3			26	10	0		10	3		0	3	26	90.9	0.0	90.9	27.3	0.0	27.3	
	Mandi	3								3			1			7	3	0		0	1		1	1	2	7	100.0	0.0	0.0	33.3	33.3	66.7
Kangra	Palampur	1								1			1			2	3	1	0		1	1		0	0	3	100.0	0.0	100.0	100.0	0.0	0.0
	Kullu	10								10			7	5		22	10	0		7	5		0	0	22	100.0	0.0	70.0	50.0	0.0	0.0	
	Kinnaur	21								20		19	15			54	20	0		19	15		0	0	54	95.2	0.0	90.5	71.4	0.0	0.0	
Shimla	Theog	1								1						1	1	0		0	0		0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	
	Solan	5								5						5	5	0		0	0		0	0	5	100.0	0.0	0.0	0.0	0.0	0.0	
	Shimla	2								2						2	2	0		0	0		0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	
Solan	Baidi	2								2						2	2	0		0	0		0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	
	Total of Graziers/ Grassland	59	0	0	0	0	0	0	0	57	0	40	25	1	5	128	57	0	40	25	1	5	128	96.6	0.0	67.8	42.4	1.7	8.5			
	Grand Total	400	127	0	104	22	1	12	266	239	0	208	65	5	21	538	366	0	312	87	6	33	804	91.5	0.0	78.0	21.8	1.5	8.3			

Source: Livelihood Survey, JICA Study Team (2017)

9.2 Average Consumption of Fuel

District	Division	Respondents Int	JFM							Non JFM							Total						
			Fuelwood	Biogas	LPG	Kerosene	Solar	Electricity (Grid Connection)	Total	Fuelwood	Biogas	LPG	Kerosene	Solar	Electricity (Grid Connection)	Total	Fuelwood	Biogas	LPG	Kerosene	Solar	Electricity (Grid Connection)	Total
Unit			Kg per week (Bundle = 20 kg)	Hours per day	Cylinder per year	Litre per week	Hours per day	Hours per day	Kg per week (Bundle = 20 kg)	Hours per day	Cylinder per year	Litre per week	Hours per day	Hours per day	Kg per week (Bundle = 20 kg)	Hours per day	Cylinder per year	Litre per week	Hours per day	Hours per day	Hours per day	Hours per day	Hours per day
Bilaspur	Bilaspur	60	135.1		4.0	1.0		1.0	107.4		4.1	0.8		4.0	125.4		4.0	0.9		4.0		4.0	1.0
	Bharmour	20	120.5		5.5	1.0		1.0	92.5		3.4	10.0		2.0	108.1		4.3	5.5					1.5
	Chamba WL	20							124.2		3.9	14.0		3.0	124.2		3.9	14.0					3.0
Chamba	Pangi	20	62.0		4.0	10.5		1.0	82.0		5.3	20.0		1.0	72.0		4.7	15.3					1.0
	Kinnaur	40	80.0		6.3	15.0		0.8	101.0		5.5	7.2		1.0	91.6		5.9	11.1					0.9
	Sarahan WL	20							107.4		3.8		0.5	0.4	107.4		3.8	-		0.5			0.4
Kullu	Kullu	20	100.0		3.6	7.5			66.7		6.3				84.2		4.9	7.5					
	Kullu WL	20							93.3		6.9	9.3		2.0	93.3		6.9	9.3					2.0
	Spirit(WL)	20							96.1		7.0	10.7	3.0	2.0	96.1		7.0	10.7	3.0				2.0
Lahaul & Spiti	Karsog	20	71.4		6.6				72.5		4.8	1.0			72.0		5.9	1.0					
	Mandi	20	124.4		3.8			0.5	103.6		3.6				113.0		3.7						0.5
	Kotgarh	20	86.7		5.4				36.67		7.0	10.0	2.0	1.4	66.7		6.4	10.0	2.0				1.4
Mandi	Rampur	21	75.0		4.0	10.0	2.0		167.3		2.0				128.4		3.7	10.0	2.0				2.0
	Theog	20	88.0		8.1			0.5	82.5		8.6			0.3	85.6		8.3						0.4
	Total of Territorial	341	103.4		5.2	8.8	2.0	0.8	100.7		5.4	10.6	2.4	1.3	101.8		5.3	10.0	2.3	1.1			1.1
Kangra	Bajinath	3							160.0		9.3				160.0		9.3						
	Kullu	11							90.7		6.6	0.7		1.0	90.7		6.6	0.7					1.0
	Mandi	3							146.7		3.0				146.7		3.0						
Kangra	Palampur	1							100.0		6.0	0.5			100.0		6.0	0.5					
	Kullu	10							100.0		4.0	1.5			100.0		4.0	1.5					
	Kinnaur	21							160.0		5.5	9.5			160.0		5.5	9.5					
Shimla	Theog	1							250.0						250.0								
	Solan	5							100.0						100.0								
	Shimla	2							50.0						50.0								
Solan	Baidi	2							40.0						40.0								
	Total of Graziers/ Grassland	59							111.1		5.8	6.3		1	111.1		5.8	6.3					1.

9.3 Source of Fuelwood (1)

District	Division	Respondents Int	JFM										Non JFM										Division Total										
			Purchase	From Own Forest	From Government Forest	Agriculture Field	Grass land	Own Land	Forest Department	Common Land	Total	Purchase	From Own Forest	From Government Forest	Agriculture Field	Grass land	Own Land	Forest Department	Common Land	Total	Purchase	From Own Forest	From Government Forest	Agriculture Field	Grass land	Own Land	Forest Department	Common Land	Total				
Bilaspur	Bilaspur	60	5	4	16	29						54	2	1	16	15							34	7	5	32	44	0	0	0	0	0	88
	Bharmour	20			10	3					13				8	3							11	0	0	18	6	0	0	0	0	24	
	Chamba WL	20										3			19	3							25	3	0	19	3	0	0	0	0	25	
Chamba	Pangj	20	1		9	5					15				10	2							12	1	0	19	7	0	0	0	0	27	
	Kinnaur	40	2		13	9					24				19	14							36	4	0	32	23	0	0	0	1	60	
	Surabhan WL	20	0								0	1		15	12	1							29	1	0	15	12	1	0	0	29		
	Kullu	20	2		9	4					15	3	1		6								10	5	1	9	10	0	0	0	25		
	Kullu WL	20									0	3		9	9			1					22	3	0	9	9	0	1	0	22		
Lahaul & Spiti	Spiti(W/L)	20									0	10			1				4			15	10	0	0	1	0	0	4	0	15		
	Karsog	20			4	7					11	1		8	6								15	1	0	12	13	0	0	0	26		
Mandi	Mandi	20			5	8					13			10	8								18	0	0	15	16	0	0	0	31		
	Kotgarh	20			7	4	2				13		1		6								7	0	1	7	10	2	0	0	20		
	Rampur	21		1	2	5					11			11	0								17	0	1	16	11	0	0	0	28		
Shimla	Theog	20		3	3	5	1	1			13			4	6	1			1				12	0	3	7	11	2	1	0	25		
Total of Territorial		341	10	8	81	79	3	1	0	0	182	25	3	129	97	2	1	5	1	263	35	11	210	176	5	2	5	1	448				
Kangra	Bajinath	3										1	1	2	1							5	1	1	2	1	0	0	5	10			
	Kullu	11											4	3	3							10	0	4	3	3	0	0	10	20			
Mandi	Mandi	3											2									2	0	0	2	0	0	0	2	4			
Kangra	Palampur	1											1									1	0	0	1	0	0	0	1	2			
	Parvati	10											8	1								9	0	8	1	0	0	0	9	18			
Kinnaur	Kinnaur	21										1	22									23	0	1	22	0	0	0	23	46			
Shimla	Theog	1											1									1	0	0	1	0	0	0	1	2			
Solan	Nalagarh	5											1									5	1	3	1	0	0	0	5	10			
Shimla	Kotgarh	2											3	2								2	0	0	2	0	0	0	2	4			
Solan	Baddi	2											2									2	0	0	2	0	0	0	2	4			
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	0	2	17	37	4	0	0	0	0	0	60	2	17	37	4	0	0	0	60	120			
Grand Total		400	10	8	81	79	3	1	0	0	182	27	20	166	101	2	1	5	1	323	37	28	247	180	5	2	65	1	565				

Source: Livelihood Survey, JICA Study Team (2017)

9.3 Source of Fuelwood (1)

District	Division	No of Respondents Interviewed	% to Division Total									
			Purchase	From Own Forest	From Government Forest	Agriculture Field	Grass land	Own Land	Forest Department	Common Land	Total	
Bilaspur	Bilaspur	60	8.0	5.7	36.4	50.0	0.0	0.0	0.0	0.0	100.0	
	Bharmour	20	0.0	0.0	75.0	25.0	0.0	0.0	0.0	0.0	100.0	
	Chamba WL	20	12.0	0.0	76.0	12.0	0.0	0.0	0.0	0.0	100.0	
Chamba	Pangj	20	3.7	0.0	70.4	25.9	0.0	0.0	0.0	0.0	100.0	
	Kinnaur	40	6.7	0.0	53.3	38.3	0.0	0.0	1.7	0.0	100.0	
	Surabhan WL	20	3.4	0.0	51.7	41.4	3.4	0.0	0.0	0.0	100.0	
	Kullu	20	20.0	4.0	36.0	40.0	0.0	0.0	0.0	0.0	100.0	
	Kullu WL	20	13.6	0.0	40.9	40.9	0.0	4.5	0.0	0.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20	66.7	0.0	0.0	6.7	0.0	0.0	26.7	0.0	100.0	
	Karsog	20	3.8	0.0	46.2	50.0	0.0	0.0	0.0	0.0	100.0	
Mandi	Mandi	20	0.0	0.0	48.4	51.6	0.0	0.0	0.0	0.0	100.0	
	Kotgarh	20	0.0	5.0	35.0	50.0	10.0	0.0	0.0	0.0	100.0	
	Rampur	21	0.0	3.6	57.1	39.3	0.0	0.0	0.0	0.0	100.0	
Shimla	Theog	20	0.0	12.0	28.0	44.0	8.0	4.0	0.0	4.0	100.0	
Total of Territorial		341	7.9	2.5	47.2	39.6	1.1	0.4	1.1	0.2	100.0	
Kangra	Bajinath	3	10.0	10.0	20.0	10.0	0.0	0.0	50.0	0.0	100.0	
	Kullu	11	0.0	20.0	15.0	15.0	0.0	0.0	50.0	0.0	100.0	
Mandi	Mandi	3	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	100.0	
Kangra	Palampur	1	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	100.0	
	Parvati	10	0.0	44.4	5.6	0.0	0.0	0.0	50.0	0.0	100.0	
Kinnaur	Kinnaur	21	0.0	2.2	47.8	0.0	0.0	0.0	50.0	0.0	100.0	
Shimla	Theog	1	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	100.0	
Solan	Nalagarh	5	10.0	30.0	10.0	0.0	0.0	0.0	50.0	0.0	100.0	
Shimla	Kotgarh	2	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	100.0	
Solan	Baddi	2	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	100.0	
Total of Graziers/ Grassland		59	1.7	14.2	30.8	3.3	0.0	0.0	50.0	0.0	100.0	
Grand Total		400	6.5	5.0	43.7	31.9	0.9	0.4	11.5	0.2	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

9.4 Fuel Consumption at Household during Winter
 No of Household Using Different Types of Fuel and Average Volume
 * Winter season was assumed to be November - April/6 Months/24 weeks)

District	Division	No of Respondents Interviewed	JFM						Non JFM						Total					
			Fuelwood		Solar		Electricity Grid Connection		Fuelwood		Solar		Electricity Grid Connection		Fuelwood		Solar		Electricity Grid Connection	
			No of Household Using	Average (Unit: Quintal per season)	No of Household Using	Average (Hours per season)	No of Household Using	Average (Hours per season)	No of Household Using	Average (Unit: Quintal per season)	No of Household Using	Average (Hours per day)	No of Household Using	Average (Hours per day)	No of Household Using	Average (Unit: Quintal per season)	No of Household Using	Average (Hours per day)	No of Household Using	Average (Hours per day)
Bilaspur	Bilaspur	60	39	44.2	1	900	2	10	21	50.1	1	1.0	60	46.2	1	3	7.8			
	Bharmour	20	11	48.0			1	4.0	9	48.5	2	2.0	20	48.2		3	2.7			
	Chamba WL	20							20	49.2	1	5.0	20	49.2		1	5.0			
Chamba	Pangi	20	10	37.9					10	53.8			20	45.8						
	Kinnaur	40	19	49.8					21	37.9	3	1.0	40	43.6		3	1.0			
Kinnaur	Sarahan WL	20							20	44.7	2	1.5	20	44.7		2	1.5			
	Kullu	20	10	44.2					10	32.3			30	38.2						
	Kullu WL	20							19	41.7			19	41.7						
Lahaul & Spiti	Spiti(WL)	20							20	49.3	1		20	49.3	1					
	Karsog	20	9	24.7			1		10	23.5			19	24.1			1			
Mandi	Mandi	20	9	35.2					11	36.7			20	36.0						
	Kotgarh	20	10	35.5			1		8	20.1	4	21.7	18	27.8		5	21.7			
	Rampur	21	10	39.4			2	2.5	11	47.6			21	43.7		2	2.5			
Shimla	Theog	20	11	37.5			1	0.5	9	26.1	1	2.0	20	32.4		2	1.3			
Total of Territorial		341	138	41.3	1	900	8	5.6	199	41.6	14	7.4	337	41.5	2	22	6.7			
Kangra	Bajmath	3							2	19.2			2	19.2						
Kullu	Kullu	11							11	48.9	1	6.0	11	48.9		1	6.0			
Mandi	Mandi	3							3	24.0	1	2	3	24.0	1	2				
Kangra	Palampur	1							1	9.6			1	9.6						
Kullu	Parvati	10							10	49.9			10	49.9						
Kinnaur	Kinnaur	21							21	34.3			21	34.3						
Shimla	Theog	1							1	192.0			1	192.0						
Solan	Nalagarh	5							5	122.9			5	122.9						
Shimla	Kotgarh	2							2	7.2			2	7.2						
Solan	Baddi	2							2	30.6			2	30.6						
Total of Graziers/ Grassland		59							58	49.7	1	3	58	49.7	1	3	6.0			
Grand Total		400	138	41.3	1	900	8	5.6	257	43.2	2	17	395	42.5	3	25	6.7			

Source: Livelihood Survey, JICA Study Team (2017)

** Quintal=100kg

9.4 Fuel Consumption at Household during Winter

Source of Fuelwood (1)

District	Division	No of Respondents Interviewed	JFM									Non JFM									Total								
			Purchase	From Own Forest	From Government Forest	Agriculture Field	Grass land	Forest Department Depot	Total	Purchase	From Own Forest	From Government Forest	Agriculture Field	Grass land	Forest Department Depot	Total	Purchase	From Own Forest	From Government Forest	Agriculture Field	Grass land	Forest Department Depot	Total						
Bilaspur	Bilaspur	60	6	3	19	31					59	1	1	16	16							34	7	4	35	47	0	0	93
	Bharmour	20			10	4					14			9	3							12	0	0	19	7	0	0	26
	Chamba WL	20									0	3		20	3							26	3	0	20	3	0	0	26
Chamba	Pangi	20	1		10	8					19			10	4							14	1	0	20	12	0	0	33
	Kinnaur	40	2		17	12					31	3		15	13			1				32	5	0	32	25	0	1	63
Kinnaur	Sarahan WL	20									0	1		16	12		1					30	1	0	16	12	1	0	30
	Kullu	20	2		9	4					15	3	1		7		1				12	5	1	9	11	1	0	27	
Kullu	Kullu WL	20									0	4	1	14	10		1	1			31	4	1	14	10	1	1	31	
Lahaul & Spiti	Spiti(WL)	20									0	14		1	1			5			21	14	0	1	1	0	5	21	
	Karsog	20	2	2	5	8					17	1		10	6						17	3	2	15	14	0	0	34	
Mandi	Mandi	20		2	4	6					12			10	8						18	0	2	14	14	0	0	30	
	Kotgarh	20			10	6	2				18		1	1	8	1					11	0	1	11	14	3	0	29	
	Rampur	21		1	7	7					15		1	11	5						17	0	2	18	12	0	0	32	
Shimla	Theog	20		2	5	6	2				15	1		4	6	2					13	1	2	9	12	4	0	28	
Total of Territorial		341	13	10	96	92	4	0	215	31	5	137	102	6	7	288	44	15	233	194	10	7	503						
Kangra	Bajmath	3									1	1	1	1							3	0	1	1	1	0	0	3	
Kullu	Kullu	11									1	4	2	3							10	1	4	2	3	0	0	10	
Mandi	Mandi	3									1										1	1	0	0	0	0	0	1	
Kangra	Palampur	1									1		1								1	0	0	1	0	0	0	1	
Kullu	Parvati	10									6	4									10	0	6	4	0	0	0	10	
Kinnaur	Kinnaur	21									1	20	2								23	0	1	20	2	0	0	23	
Shimla	Theog	1									1		1								1	0	0	1	0	0	0	1	
Solan	Nalagarh	5									2	3									5	2	3	0	0	0	0	5	
Shimla	Kotgarh	2									1		1								2	1	0	1	0	0	0	2	
Solan	Baddi	2									2		2								2	0	0	2	0	0	0	2	
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	5	15	32	6	0	0	58	5	15	32	6	0	0	58	6	0	0	58		
Grand Total		400	13	10	96	92	4	0	215	36	20	169	108	6	7	346	49	30	265	200	10	7	561						

Source: Livelihood Survey, JICA Study Team (2017)

9.4 Fuel Consumption at Household during Winter
Source of Fuelwood (2)

District	Division	No of Respondents Interviewed	% to Total						
			Purchase	From Own Forest	From Government Forest	Agriculture Field	Grass land	Forest Department Depot	Total
Bilaspur	Bilaspur	60	7.5	4.3	37.6	50.5	0.0	0.0	100.0
Chamba	Bharmour	20	0.0	0.0	73.1	26.9	0.0	0.0	100.0
	Chamba WL	20	11.5	0.0	76.9	11.5	0.0	0.0	100.0
	Pangi	20	3.0	0.0	60.6	36.4	0.0	0.0	100.0
Kinnaur	Kinnaur	40	7.9	0.0	50.8	39.7	0.0	1.6	100.0
	Sarahan WL	20	3.3	0.0	53.3	40.0	3.3	0.0	100.0
Kullu	Kullu	20	18.5	3.7	33.3	40.7	3.7	0.0	100.0
	Kullu WL	20	12.9	3.2	45.2	32.3	3.2	3.2	100.0
Lahaul & Spiti	Spiti(W/L)	20	66.7	0.0	4.8	4.8	0.0	23.8	100.0
Mandi	Karsog	20	8.8	5.9	44.1	41.2	0.0	0.0	100.0
	Mandi	20	0.0	6.7	46.7	46.7	0.0	0.0	100.0
Shimla	Kotgarh	20	0.0	3.4	37.9	48.3	10.3	0.0	100.0
	Rampur	21	0.0	6.3	56.3	37.5	0.0	0.0	100.0
	Theog	20	3.6	7.1	32.1	42.9	14.3	0.0	100.0
Total of Territorial		341	8.7	3.0	46.3	38.6	2.0	1.4	100.0
Kangra	Bajjnath	3	0.0	33.3	33.3	33.3	0.0	0.0	100.0
Kullu	Kullu	11	10.0	40.0	20.0	30.0	0.0	0.0	100.0
Mandi	Mandi	3	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Kangra	Palampur	1	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Kullu	Parvati	10	0.0	60.0	40.0	0.0	0.0	0.0	100.0
Kinnaur	Kinnaur	21	0.0	4.3	87.0	8.7	0.0	0.0	100.0
Shimla	Theog	1	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Solan	Nalagarh	5	40.0	60.0	0.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	2	50.0	0.0	50.0	0.0	0.0	0.0	100.0
Solan	Baddi	2	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Total of Graziers/ Grassland		59	8.6	25.9	55.2	10.3	0.0	0.0	100.0
Grand Total		400	8.7	5.3	47.2	35.7	1.8	1.2	100.0

Source: Livelihood Survey, JICA Study Team (2017)

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

10.1 Sources of Income (4)

District	Division	No of Respondents Interviewed (a)	Count of Non JFM (FHM)																	
			Sale of Livestock	Poultry-Income earned	Fishery-Income earned	Salary-Income earned	Dairy-Income earned	Skill based jobs-Income earned	Handloom-Income earned	Handicrafts-Income earned	Trading-Income earned	Remittances-Income earned	O-Agriculture-Income earned	O-Carpentry-Income earned	O-Bee Keeping-Income earned	O-Blacksmith	O-Orchards	O-Pension	Others	Total
Bilaspur	Bilaspur	60	4	1		11	1					1		3				2	8	
	Bharmour	20				4	2							2			4		15	
	Chamba WL	20	2			5	4				3			3				4	21	
Chamba	Pangi	20				2								2			2	1	7	
	Kinnaur	40	5			12	3			1				7			7	1	38	
	Sarahan WL	20	2			11					2	4		6			6	6	40	
	Kullu	20	1			1	2							3			4	3	14	
	Kullu WL	20				8	4			2	1	5		3			1	5	32	
Lahaul & Spiti	Spiti(W/L)	20	1			12	2	1						10			4	3	38	
	Karsog	20				3	1					2		6			2	1	16	
Mandi	Mandi	20	1			2	3			1	1			1	4		2	1	15	
	Kotgarh	20				5	1							2			4	3	17	
	Rampur	21	1			3					1			1				2	8	
	Theog	20				3								3			3	2	11	
Total of Territorial		341	19	1	0	82	22	1	4	5	20	1	55	0	0	1	39	22	31	272
	Bijnath	3				3													5	
	Kullu	11				6				1									10	
	Mandi	3				3													3	
	Kangra	1				1													1	
	Kullu	10				3					1								2	
	Kinnaur	21	4			2	8			6	1		1	6			1	2	31	
	Shirala	1				1													1	
	Solan	5	3																8	
	Shirala	2				2													2	
	Solan	2	1																3	
Total of Graziers/ Grassland		59	21	0	0	2	26	0	7	1	1	1	6	1	1	1	2	0	1	71
Grand Total		400	40	1	0	84	48	1	11	6	21	2	61	1	1	2	41	22	32	343

Source: Livelihood Survey, JICA Study Team (2017)

10.1 Sources of Income (5)

District	Division	No of Respondents Interviewed (a)	Count of Non JFM (FHM)																	
			Sale of Livestock	Poultry-Income earned	Fishery-Income earned	Salary-Income earned	Dairy-Income earned	Skill based jobs-Income earned	Handloom-Income earned	Handicrafts-Income earned	Trading-Income earned	Remittances-Income earned	O-Agriculture-Income earned	O-Carpentry-Income earned	O-Bee Keeping-Income earned	O-Blacksmith	O-Orchards	O-Pension	Others	Total
Bilaspur	Bilaspur	60				2														2
	Bharmour	20				1														1
	Chamba WL	20					1	1			1			3				1	4	13
Chamba	Pangi	20				1		1										2	4	
	Kinnaur	40																	1	1
	Sarahan WL	20																	1	1
	Kullu	20				1				1				2			2	2	6	
	Kullu WL	20				1			1		1			1			2	1	7	
Lahaul & Spiti	Spiti(W/L)	20	1			1								2			1		5	
	Karsog	20																	0	
Mandi	Mandi	20	1			1					1			1				1	6	
	Kotgarh	20				1	1				1						1	1	5	
	Rampur	21				2												2	3	
	Theog	20				2					1			2				2	9	
Total of Territorial		341	4	0	1	16	1	2	0	0	4	0	7	0	0	0	6	11	4	62
	Bijnath	3																		0
	Kullu	11																		0
	Mandi	3																		0
	Kangra	1																		0
	Kullu	10									1									0
	Kinnaur	21						1												2
	Shirala	1																		0
	Solan	5																		0
	Shirala	2																		0
	Solan	2																		0
Total of Graziers/ Grassland		59	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
Grand Total		400	4	0	1	16	2	2	0	0	5	0	7	0	0	0	6	11	4	64

Source: Livelihood Survey, JICA Study Team (2017)

10.1 Sources of Income (6)

District	Division	No of Respondents Interviewed (a)	Total Count of Non JFM																	
			Sale of Livestock	Poultry-Income earned	Fishery-Income earned	Salary-Income earned	Dairy-Income earned	Skill based jobs-Income earned	Handloom-Income earned	Handicrafts-Income earned	Trading-Income earned	Remittances-Income earned	O-Agriculture-Income earned	O-Carpentry-Income earned	O-Bee Keeping-Income earned	O-Blacksmith	O-Orchards	O-Pension	Others	Total
Bilaspur	Bilaspur	60	4	1	0	13	1	0	0	0	1	0	3	0	0	0	2	8	33	
	Bharmour	20	2	0	0	5	2	0	0	0	0	2	0	0	0	4	0	1	16	
	Chamba WL	20	2	0	0	5	5	1	0	0	4	0	6	0	0	1	4	6	34	
Chamba	Pangi	20	0	0	0	3	0	1	0	0	0	2	0	0	0	0	4	1	11	
	Kinnaur	40	5	0	0	12	2	0	1	1	0	0	7	0	0	8	1	2	39	
	Sarahan WL	20	2	0	0	11	0	0	0	2	4	0	6	0	0	6	6	3	40	
	Kullu	20	1	0	0	11	2	0	0	0	0	0	5	0	0	6	2	3	20	
	Kullu WL	20	0	0	0	9	4	0	3	1	6	0	4	0	0	1	7	1	3	39
Lahaul & Spiti	Spiti(W/L)	20	2	0	0	13	2	1	0	0	3	0	12	0	0	5	3	2	43	
	Karsog	20	0	0	0	3	1	0	0	0	2	0	6	0	0	2	1	1	16	
Mandi	Mandi	20	2	0	0	2	3	0	1	1	1	1	5	0	0	0	3	1	21	
	Kotgarh	20	0	0	0	6	2	0	0	0	2	0	2	0	0	5	4	1	22	
	Rampur	21	1	0	0	5	0	0	0	0	1	0	1	0	0	0	0	3	11	
	Theog	20	0	0	0	4	0	0	0	0	1	0	5	0	0	3	4	1	20	
Total of Territorial		341	21	1	1	94	24	3	5	5	25	1	66	0	0	1	47	35	36	365
	Bijnath	3				0	0	0	0	0	0	0	0	0	0	0	0	0	3	
	Kullu	11				0	6	0	1	0	0	0	0	0	0	0	0	0	10	
	Mandi	3				0	0	0	0	0	0	0	0	0	0	0	0	0	3	
	Kangra	1				0	0	0	0	0	0	0	0	0	0	0	0	0	1	
	Kullu	10				0	0	0	0	0	1	0	0	1	1	0	0	0	7	
	Kinnaur	21	4			2	9	0	6	1	1	1	6	0	0	2	0	1	33	
	Shirala	1				0	1	0	0	0	0	0	0	0	0	0	0	0	1	
	Solan	5	3			0	5	0	0	0	0	0	0	0	0	0	0	0	8	
	Shirala	2				0	2	0	0	0	0	0	0	0	0	0	0	0	2	
	Solan	2	1			0	2	0	0	0	0	0	0	0	0	0	0	0	3	
Total of Graziers/ Grassland		59	21	0	0	2	27	0	7	1	2	1	6	1	1	2	0	1	73	
Grand Total		400	42	1	1	96	51	3	12	6	27	2	72	1	1	2	49	35	37	438

Source: Livelihood Survey, JICA Study Team (2017)

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

10.1 Sources of Income (7)

District	Division	No of Respondents Interviewed (a)	Total Count of JFM and Non JFM																	Total
			Sale of Livestock	Poultry- Income earned	Fishery- Income earned	Salary- Income earned	Dairy- Income earned	Skill based jobs- Income earned	Handloom- Income earned	Handicrafts- Income earned	Trading- Income earned	Remittances- Income earned	O- Agriculture- Income earned	O-Carpentry- Income earned	O-Bee Keeping- Income earned	O- Blacksmith	O- Orchards	O- Pension	Others	
Bilaspur	Bilaspur	60	11	1	0	32	3	2	0	0	8	0	8	0	0	0	0	11	14	90
	Bharmour	20	3	0	0	11	5	0	0	2	0	4	0	0	0	5	4	4	38	
	Chamba WL	20	2	0	0	8	7	1	0	0	7	0	8	0	0	1	4	9	47	
Chamba	Pangi	20	0	0	0	3	0	1	0	0	0	1	5	0	0	0	8	2	20	
	Kinnaur	40	7	0	0	18	3	1	1	1	2	0	12	0	0	0	17	6	71	
	Sarahan WL	20	2	0	0	11	0	0	0	2	4	0	6	0	0	6	3	40		
Kinnaur	Kullu	20	4	0	0	2	3	0	0	0	1	0	9	0	0	0	15	3	44	
	Kullu WL	20	0	0	0	9	4	0	3	1	6	0	4	0	0	1	7	1	39	
	Lahaul & Spiti	20	2	0	0	13	2	1	0	0	3	0	12	0	0	5	3	2	43	
Mandi	Karsog	20	0	0	0	8	3	0	0	0	4	0	11	0	0	2	2	2	32	
	Mandi	20	4	0	1	4	8	0	1	1	2	1	13	0	0	0	3	3	41	
	Kotgarh	20	1	0	0	9	2	0	0	0	3	0	5	1	0	8	6	2	37	
Shimla	Rampur	21	1	1	0	9	0	1	0	1	3	0	6	0	0	1	3	4	30	
	Theog	20	0	0	0	12	0	1	0	0	4	0	11	1	0	0	3	8	41	
	Total of Territorial	341	37	2	1	149	40	8	5	6	49	2	114	2	0	1	70	68	59	613
Kangra	Bajnath	3	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	5	
	Kullu	11	3	0	0	0	6	0	1	0	0	0	0	0	0	0	0	0	10	
	Mandi	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Kangra	Palampur	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
	Parvati	10	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	7	
	Kinnaur	21	4	0	0	2	9	0	6	1	1	1	6	0	0	0	2	0	1	33
Shimla	Theog	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
	Solan	5	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	8	
	Shimla	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
Total of Graziers/ Grassland	Baddi	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	
	Solan	59	21	0	0	2	27	0	7	1	2	1	6	1	1	1	2	0	73	
	Grand Total	400	58	2	1	151	67	8	12	7	51	3	120	3	1	2	72	68	60	686

Source: Livelihood Survey, JICA Study Team (2017)

10.1 Sources of Income (8)

District	Division	No of Respondents Interviewed (a)	% to the Total No of Respondents Interviewed (a)																
			Sale of Livestock	Poultry- Income earned	Fishery- Income earned	Salary- Income earned	Dairy- Income earned	Skill based jobs- Income earned	Handloom- Income earned	Handicrafts- Income earned	Trading- Income earned	Remittances- Income earned	O- Agriculture- Income earned	O-Carpentry- Income earned	O-Bee Keeping- Income earned	O- Blacksmith	O- Orchards	O- Pension	Others
Bilaspur	Bilaspur	60	18.3	1.7	0.0	53.3	5.0	3.3	0.0	0.0	13.3	0.0	13.3	0.0	0.0	0.0	0.0	18.3	23.3
	Bharmour	20	15.0	0.0	0.0	55.0	25.0	0.0	0.0	0.0	10.0	0.0	20.0	0.0	0.0	0.0	25.0	20.0	20.0
	Chamba WL	20	10.0	0.0	0.0	40.0	35.0	5.0	0.0	0.0	35.0	0.0	40.0	0.0	0.0	5.0	20.0	45.0	
Chamba	Pangi	20	0.0	0.0	0.0	15.0	0.0	5.0	0.0	0.0	0.0	5.0	25.0	0.0	0.0	0.0	40.0	10.0	
	Kinnaur	40	17.5	0.0	0.0	45.0	7.5	2.5	2.5	2.5	5.0	0.0	30.0	0.0	0.0	0.0	42.5	15.0	7.5
	Sarahan WL	20	10.0	0.0	0.0	55.0	0.0	0.0	0.0	10.0	20.0	0.0	30.0	0.0	0.0	0.0	30.0	15.0	
Kinnaur	Kullu	20	20.0	0.0	0.0	10.0	15.0	0.0	0.0	0.0	5.0	0.0	45.0	0.0	0.0	0.0	75.0	15.0	35.0
	Kullu WL	20	0.0	0.0	0.0	45.0	20.0	0.0	15.0	5.0	30.0	0.0	20.0	0.0	0.0	5.0	35.0	5.0	15.0
	Lahaul & Spiti	20	10.0	0.0	0.0	65.0	10.0	5.0	0.0	0.0	15.0	0.0	60.0	0.0	0.0	0.0	25.0	15.0	10.0
Mandi	Karsog	20	0.0	0.0	0.0	40.0	15.0	0.0	0.0	0.0	20.0	0.0	55.0	0.0	0.0	0.0	10.0	10.0	10.0
	Mandi	20	20.0	0.0	0.0	50.0	20.0	40.0	0.0	5.0	5.0	10.0	50.0	65.0	0.0	0.0	0.0	15.0	15.0
	Kotgarh	20	5.0	0.0	0.0	45.0	10.0	0.0	0.0	0.0	15.0	0.0	25.0	5.0	0.0	0.0	40.0	30.0	10.0
Shimla	Rampur	21	4.8	4.8	0.0	42.9	0.0	4.8	0.0	4.8	14.3	0.0	28.6	0.0	0.0	0.0	4.8	14.3	19.0
	Theog	20	0.0	0.0	0.0	60.0	0.0	5.0	0.0	0.0	20.0	0.0	55.0	5.0	0.0	0.0	15.0	40.0	5.0
	Total of Territorial	341	10.9	0.6	0.3	43.7	11.7	2.3	1.5	1.8	14.4	0.6	33.4	0.6	0.0	0.3	20.5	19.9	17.3
Kangra	Bajnath	3	100.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Kullu	11	27.3	0.0	0.0	0.0	54.5	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Mandi	3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Kangra	Palampur	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Parvati	10	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Kinnaur	21	19.0	0.0	0.0	9.5	42.9	0.0	28.6	4.8	4.8	4.8	28.6	0.0	0.0	0.0	9.5	0.0	4.8
Shimla	Theog	1	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Solan	5	60.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Shimla	2	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total of Graziers/ Grassland	Baddi	2	50.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Solan	59	35.6	0.0	0.0	3.4	45.8	0.0	11.9	1.7	3.4	1.7	10.2	1.7	1.7	1.7	3.4	0.0	1.7
	Grand Total	400	14.5	0.5	0.3	37.8	16.8	2.0	3.0	1.8	12.8	0.8	30.0	0.8	0.3	0.5	18.0	17.0	15.0

Source: Livelihood Survey, JICA Study Team (2017)

10.2 Average Household Income by sources (1)

District	Division	No of Respondents Interviewed (a)	Average of JFM (INR)																	
			Sale of Livestock	Poultry- Income earned	Fishery- Income earned	Salary- Income earned	Dairy- Income earned	Skill based jobs- Income earned	Handloom- Income earned	Handicrafts- Income earned	Trading- Income earned	Remittances- Income earned	O- Agriculture- Income earned	O-Carpentry- Income earned	O-Bee Keeping- Income earned	O- Blacksmith	O- Orchards	O- Pension	Others	
Bilaspur	Bilaspur	60	16,700			279,733	21,000	96,000			49,000		30,140					213,400	145,900	
	Bharmour	20	7,200			152,925	20,667			65,000		6,500				6,000		108,900	48,800	
	Chamba WL	20																		
Chamba	Pangi	20																		
	Kinnaur	40	20,000			454,400	36,000	48,000			170,000		23,225					8,400	20,000	
	Sarahan WL	20																		
Kinnaur	Kullu	20	23,833			21,600	30,000			50,000		31,000						88,889	15,000	25,955
	Kullu WL	20																		
	Lahaul & Spiti	20																		
Mandi	Karsog	20				126,880	18,000			21,000		23,222						180,000	3,000	
	Mandi	20	20,000			30,600	16,000			18,000		72,413						117,900		
	Kotgarh	20	24,000			66,000				7,000		9,375				14,000		8,100	80,000	
Shimla	Rampur	21		250		63,000		120,000		5,000		60,000						180,000	67,875	
	Theog	20				550,500														

10.3 Average of Total Household/ Per Capita Income

Unit: INR

District	Division	No of Respondents Interviewed (a)	JFM			Non JFM			Total			Per capita Income		
			MHH	FHH	Total	MHH	FHH	Total	MHH	FHH	Total	MHH	FHH	Total
Bilaspur	Bilaspur	60	245,432	123,936	221,133	204,285	228,000	206,782	229,888	147,061	216,083	37,079	27,011	35,575
	Bharmour	20	156,159		156,159	276,914	216,000	269,300	203,119	216,000	203,797	35,497	108,000	36,878
	Chamba WL	20				200,786	192,640	198,642	200,786	192,640	198,642	39,042	38,528	38,909
Chamba	Pangi	20	28,950	10,500	19,725	143,340	33,800	102,263	100,444	22,150	66,889	12,175	3,592	9,092
	Kinnaur	40	415,887	44,400	372,182	424,304	600,000	434,064	420,358	229,600	404,007	67,937	57,400	67,335
	Sarahan WL	20				235,287		235,287	235,287		235,287	39,214	0	38,209
	Kullu	20	121,592		121,592	168,993	121,400	154,715	141,110	121,400	138,154	30,755	30,350	30,701
	Kullu WL	20				148,909	92,667	140,029	148,909	92,667	140,029	29,414	17,375	27,428
Lahaul & Spiti	Spiti(W/L)	20				353,094	270,667	340,730	353,094	270,667	340,730	57,168	58,000	57,266
	Karsog	20	126,439		126,439	128,363		127,458		127,458	22,110	-		22,110
	Mandi	20	101,430		101,430	140,980	91,633	122,475	114,613	91,633	110,783	18,486	13,745	17,647
	Kotgarh	20	47,494	34,250	44,845	289,584	218,050	275,277	168,539	126,150	160,061	39,081	31,538	37,661
	Rampur	21	174,656	318,267	236,204	161,580	32,700	113,250	167,392	175,483	170,628	20,637	38,996	25,594
	Theog	20	463,113	228,800	377,908	256,300	46,550	163,078	376,941	137,675	281,235	66,519	25,032	50,220
	Total of Territorial	341	216,126	139,350	203,228	241,436	145,033	224,147	231,114	142,823	215,684	39,368	27,843	37,568
Kangra	Bajinath	3				58,333		58,333	58,333		58,333	9,722		9,722
	Kullu	11				31,925		31,925	31,925		31,925	4,119		4,119
	Mandi	3				10,000		10,000	10,000		10,000	2,143		2,143
	Kangra	1				50,000		50,000	50,000		50,000	16,667		16,667
	Kullu	10				61,875		61,875	61,875		61,875	4,484		4,484
	Kinnaur	21				141,925	7,500	135,204	141,925	7,500	135,204	22,471	1,875	21,807
	Shimla	1				288,000		288,000	288,000		288,000	57,600		57,600
	Solan	5				371,400		371,400	371,400		371,400	44,214		44,214
	Shimla	2				240,000		240,000	240,000		240,000	60,000		60,000
	Solan	2				243,000		243,000	243,000		243,000	44,182		44,182
	Total of Graziers/ Grassland	59				135,252	7,500	132,697	135,252	7,500	132,697	18,828	1,875	18,637
	Grand Total	400	216,126	139,350	203,228	215,421	140,988	204,606	215,662	140,363	204,126	35,458	27,473	34,404

Source: Livelihood Survey, JICA Study Team (2017) * Trimmed Mean@ 0.05

Household Income by Economic Status

Unit: INR

District	Division	No of Respondents Interviewed (a)	Economic Status		
			APL	BPL	Atyodaya
Bilaspur	Bilaspur	60	307,052	91,606	47,250
	Bharmour	20	259,950	104,167	127,750
	Chamba W	20	282,000	84,025	
Chamba	Pangi	20	100,613	29,833	
	Kinnaur	40	527,671	93,121	110,400
	Sarahan W	20	261,723	136,938	347,625
	Kullu	30	168,588	92,503	
	Kullu WL	10	145,597	84,000	185,000
Lahaul & Spiti	Spiti(W/L)	20	460,633	114,600	238,000
	Karsog	20	138,075	35,933	
	Mandi	20	93,288	142,319	54,625
	Kotgarh	20	184,227	36,140	312,785
	Rampur	21	271,682	99,092	31,550
	Theog	20	386,183	128,497	77,000
	Total of Territorial	341	286,447	90,372	145,253
Kangra	Bajinath	3	58,333		
	Kullu	11	35,880	23,000	
	Mandi	3		10,000	
	Kangra	1	50,000		
	Kullu	10	73,500	27,375	
	Kinnaur	21	104,150	19,175	
	Shimla	1		288,000	
	Solan	5	348,000	455,000	
	Shimla	2		180,000	
	Solan	2	336,000	150,000	
	Total of Graziers/ Gra	59	98,761	111,989	
	Grand Total	400	266,691	94,198	145,253

Source: Livelihood Survey, JICA Study Team (2017)

10.4 Itemised Average Expenditure (1)

Unit: INR

District	Division	No of Respondents Interviewed (a)	JFM													Non JFM												
			Food	Medicine/Health/Medical care	Clothes	Fodder/Livestock Feeds	Farm Inputs	Fuelwood	Gas connect	Education of Children	Cultural activities/festival	Maintenance of house	Marriage	Others (Unspecified)	Food	Medicine/Health/Medical care	Clothes	Fodder/Livestock Feeds	Farm Inputs	Fuelwood	Gas connect	Education of Children	Cultural activities/festival	Maintenance of house	Marriage	Others (Unspecified)		
Bilaspur	Bilaspur	60	51,900	25,108	8,866	21,141	4,113	2,300	2,539	15,018	5,454	7,067	11,250	14,000	2,400	50,460	30,294	9,510	15,105	96,463	181,578	42,000	3,122	40,167	4,465	18,733	24,000	4,967
Bilaspur	Bharmour	20	36,545	27,420	8,091	6,800	1,800	1,150	4,250	7,100	7,067	11,250	14,000	2,400	46,200	31,889	8,200	6,878	4,420	400	3,324	21,556	7,979	8,286	153,000	7,333	2,749	
Bilaspur	Chamba WL	20													46,200	31,889	8,200	6,878	4,420	400	3,324	21,556	7,979	8,286	153,000	7,333	2,749	
Chamba	Pangi	20	18,260	1,540	9,060	12,400	3,883	1,320	2,786	5,929	1,888	200,000			3,179	22,540	31,889	8,200	6,186	1,483	300	3,892	15,625	2,800	16,000		3,303	
Chamba	Kinnaur	40	54,000	15,967	10,053	14,825	106,913	1,000	4,567	41,718	3,382	4,540	67,700	14,492	44,190	8,300	8,490	12,453	42,969	10,000	3,695	54,846	55,190	11,800	6,000	1,180		
Chamba	Sarahan WL	20													43,140	19,706	8,020	10,600	13,089		2,936	34,171	5,658	19,833	220,000	14,150		
Kinnaur	Kullu	20	37,200	4,333	4,640	7,717	23,600		2,900	7,625	6,120	4,500	5,500	1,080	31,200	10,238	7,900	9,750	15,075	3,000	4,300	31,714	7,280	8,000	6,000	3,450		
Kinnaur	Kullu WL	20													39,420	5,729	8,225	12,714	24,924	5,000	6,995	21,182	5,674	84,125	70,333	5,838		
Lahaul & Spiti	Spiti(W/L)	20													43,895	15,060	10,650	10,117	71,482	9,711	5,574	90,360	5,774	10,750	8,667	2,147		
Lahaul & Spiti	Karsog	20	55,000	55,620	9,430	5,067	8,170	2,000	3,910	8,975	3,730	56,867	110,800		32,400	30,700	4,560	9,933	6,456		3,029	6,160	2,220	7,667	200,000	37,850		
Lahaul & Spiti	Mandi	20	37,200	12,111	8,720	14,157	24,030		2,540	7,472	5,860	42,880	121,920		38,280	5,456	5,580	7,843	4,757		2,900	8,640	23,300	8,400	240,133			
Mandi	Kotgarh	20	30,460	5,400	5,690	9,720	8,750		3,629	19,400	2,122	55,100	4,500	26,200	49,200	23,740	7,300	24,000	19,596		5,269	32,600	4,150	166,100	21,000	6,000		
Mandi	Rampur	21	43,440	3,543	6,430	3,333	10,850		2,557	20,043	2,230	43,667	3,500	88,600	20,364	2,291	2,164	2,500	15,667		2,000	5,600	1,940	1,050	125,605	600		
Mandi	Theog	20	65,636	13,364	10,182	13,840	29,585	#DIV/0!	5,693	42,771	6,573	137,833	8,000	18,000	42,000	27,743	8,667	14,667	16,125		5,000	18,467	9,733	34,000	2,000	4,000		
Total of Territorial		341	45,685	19,421	8,407	14,076	24,296	1,714	3,503	19,387	4,659	68,348	93,512	20,125	40,546	15,069	7,831	11,323	23,129	7,123	4,197	37,805	11,682	30,591	105,554	6,860		
Kangra	Bijnath	3													32,000	4,000	33,667	13,333	4,667		6,500	14,400	7,667	7,667	12,667	5,000		
Kullu	Kullu	11													47,455	12,200	22,100	17,089	49,909		16,633	30,244	19,545	13,182	16,667	5,000		
Mandi	Mandi	3													44,333	4,933	5,667	15,000	2,050			8,500	4,500	2,000	8,000			
Kangra	Palampur	1													25,000	10,000	15,000	6,000				3,600	150,000	7,000	5,000			
Kullu	Parvati	10													54,600	20,700	16,400	9,767	7,633	72,000	3,563	19,013	15,900	9,000	30,950	5,500		
Kinnaur	Kinnaur	21													60,095	8,467	18,971	7,423	32,309		8,450	3,819	46,435	12,383	20,920	46,667		
Shimla	Theog	1													60,000	36,000	14,400											
Solan	Nalagarh	5													84,000	31,920	24,540	583,200				6,034						
Shimla	Kotgarh	2													48,000	24,000	12,000	306,000				2,400						
Solan	Buddi	2													43,800	13,500	8,460	204,540				6,000						
Total of Graziers/ Grassland		59													55,044	14,634	18,869	102,547	31,513	12,031	6,702	35,328	14,120	11,321	25,146	5,286		
Grand Total		400	45,685	19,421	8,407	14,076	24,296	1,714	3,503	19,387	4,659	68,348	93,512	20,125	43,861	14,965	10,312	36,365	24,542	8,403	4,698	37,193	12,065	24,295	74,922	6,705		

Source: Livelihood Survey, JICA Study Team (2017)

10.4 Itemised Average Expenditure (2)

Unit: INR

District	Division	No of Respondents Interviewed (a)	Total Average												
			Food	Medicine/Health/Medical care	Clothes	Fodder/Livestock Feeds	Farm Inputs	Fuelwood	Gas connect	Education of Children	Cultural activities/festival	Maintenance of house	Marriage	Others (Unspecified)	
Bilaspur	Bilaspur	60	51,420	26,837	9,088	18,678	4,013	2,300	2,753	22,563	5,119	75,264	165,820	19,780	
Bilaspur	Bharmour	20	39,300	19,075	7,580	7,567	8,917	643	3,311	40,113	6,024	8,429	70,000	2,644	
Bilaspur	Chamba WL	20	46,200	3,918	8,000	6,878	4,420	400	3,324	21,556	7,979	8,286	153,000	7,333	
Chamba	Pangi	20	20,400	21,050	8,630	8,445	2,683	810	3,436	11,100	2,313	77,333		3,245	
Chamba	Kinnaur	40	48,850	11,494	9,233	13,278	72,035	7,750	4,108	48,829	31,386	9,380	26,567	11,164	
Chamba	Sarahan WL	20	43,140	19,706	8,020	10,600	13,089		2,936	34,171	5,658	19,833	220,000	14,150	
Kinnaur	Kullu	20	34,200	7,112	6,270	8,530	19,588	3,000	3,678	22,955	6,700	6,600	5,750	2,133	
Kinnaur	Kullu WL	20	39,420	5,729	8,225	12,714	24,924	5,000	6,995	21,182	5,674	84,125	70,333	5,838	
Lahaul & Spiti	Spiti(W/L)	20	43,895	15,060	10,650	10,117	71,482	9,711	5,574	90,360	5,774	10,750	8,667	2,147	
Lahaul & Spiti	Karsog	20	43,700	43,816	6,995	7,013	7,358	2,000	3,547	7,411	2,975	40,467	144,250	37,850	
Lahaul & Spiti	Mandi	20	37,740	8,783	7,150	11,000	16,094		2,700	8,056	14,580	29,950	166,250		
Mandi	Kotgarh	20	39,830	15,053	6,495	15,075	15,257		4,551	26,733	3,076	110,600	12,750	19,467	
Mandi	Rampur	21	31,352	2,778	4,195	3,125	12,164		2,433	16,833	2,085	19,314	64,553	53,400	
Mandi	Theog	20	55,000	18,956	9,500	14,150	23,603		5,381	29,100	7,995	90,636	6,000	9,200	
Total of Territorial		341	42,677	16,891	8,067	12,517	23,634	5,893	3,926	30,456	8,773	46,953	100,035	11,282	
Kangra	Bijnath	3	32,000	4,000	33,667	13,333	4,667		6,500	14,400	7,667	7,667	12,667	5,000	
Kullu	Kullu	11	47,455	12,200	22,100	17,089	49,909		16,633	30,244	19,545	13,182	16,667	5,000	
Mandi	Mandi	3	44,333	4,933	5,667	15,000	2,050			8,500	4,500	2,000	8,000		
Kangra	Palampur	1	25,000	10,000	15,000	6,000			3,600	150,000	7,000	5,000			
Kullu	Parvati	10	54,600	20,700	16,400	9,767	7,633	72,000	3,563	19,013	15,900	9,000	30,950	5,500	
Kinnaur	Kinnaur	21	60,095	8,467	18,971	7,423	32,309		8,450	3,819	46,435	12,383	20,920	46,667	
Shimla	Theog	1	60,000	36,000	14,400										
Solan	Nalagarh	5	84,000	31,920	24,540	583,200						6,034			
Shimla	Kotgarh	2	48,000	24,000	12,000	306,000						2,400			
Solan	Buddi	2	43,800	13,500	8,460	204,540						6,000			
Total of Graziers/ Grassland		59	55,044	14,634	18,869	102,547	31,513	12,031	6,702	35,328	14,120	11,321	25,146	5,286	
Grand Total		400	44,5												

10.5 Average Total Household/ Per Capita Expenditure

District	Division	No of Respondents	JFM			Non JFM			Total			Per Capita Expenditure		
			MHH	FHH	Total	MHH	FHH	Total	MHH	FHH	Total	MHH	FHH	Total
			Unit: INR											
Bilaspur	Bilaspur	60	225,623	98,700	203,411	150,783	91,600	144,865	199,209	97,122	183,896	36,415	17,839	33,639
	Bharmour	20	91,536		91,536	156,989	46,200	144,679	119,095	46,200	115,451	21,969	23,100	21,991
	Chamba WL	20				167,647	94,160	149,275	167,647	94,160	149,275	34,926	18,832	30,778
Chamba	Pangi	20	79,943	43,785	65,480	93,706	77,733	88,914	87,354	58,334	77,197	17,206	11,036	14,990
	Kinnaur	40	237,544	26,450	215,324	188,833	541,250	205,615	211,214	198,050	210,227	39,469	49,513	40,043
Kinnaur	Sarahan WL	20				170,578	8,300	162,464	170,578	8,300	162,464	28,430	2,767	27,772
	Kullu	30	85,640		85,640	109,921	85,550	102,610	95,638	85,550	94,125	20,844	21,388	20,917
Kullu	Kullu WL	10				154,805	128,833	150,909	154,805	128,833	150,909	32,490	24,156	31,115
Lahaul & Spiti	Spiti(W/L)	20				228,581	161,900	218,579	228,581	161,900	218,579	37,008	34,693	36,736
	Karsog	20	233,730		233,730	161,220		161,220	197,475		197,475	40,301	-	40,301
Mandi	Mandi	20	184,026		184,026	170,743	138,033	160,930	178,556	138,033	172,478	32,639	20,705	30,527
	Kotgarh	20	98,575	63,250	91,510	203,173	190,700	200,678	150,874	126,975	146,094	34,985	31,744	34,375
	Rampur	21	81,700	210,900	120,460	67,939	23,400	55,792	74,361	117,150	86,586	15,280	26,033	18,183
Shimla	Theog	20	320,957	120,468	248,052	207,200	75,700	148,756	273,558	98,084	203,369	48,275	17,833	36,316
Total of Territorial		341	181,609	98,182	168,592	165,407	111,185	156,189	172,172	106,077	161,318	32,778	21,445	31,009
Kangra	Bajinath	3				128,633		128,633	128,633		128,633	21,439	-	21,439
Kullu	Kullu	11				224,718		224,718	224,718		224,718	39,869	-	39,869
Mandi	Mandi	3				78,800		78,800	78,800		78,800	16,886	-	16,886
Kangra	Palampur	1				221,600		221,600	221,600		221,600	73,867	-	73,867
Kullu	Parvati	10				183,160		183,160	183,160		183,160	26,545	-	26,545
Kinnaur	Kinnaur	21				170,440	52,800	164,838	170,440	52,800	164,838	28,407	13,200	27,916
Shimla	Theog	1				110,400		110,400	110,400		110,400	22,080	-	22,080
Solan	Nalagarh	5				730,174		730,174	730,174		730,174	86,925	-	86,925
Shimla	Kotgarh	2				391,200		391,200	391,200		391,200	97,800	-	97,800
Solan	Baddi	2				282,300		282,300	282,300		282,300	51,327	-	51,327
Total of Graziers/ Grassland		59				235,594	52,800	232,496	235,594	52,800	232,496	38,820	13,200	38,532
Grand Total		400	181,609	98,182	168,592	183,581	109,517	173,572	182,897	105,142	171,817	33,928	21,328	32,266

Source: Livelihood Survey, JICA Study Team (2017)

Household Expenditure by the Economic Status

District	Division	No of Respondents	Economic Status		
			APL	BPL	Atyodaya
			Unit: INR		
Bilaspur	Bilaspur	60	248,603	100,236	121,180
	Bharmour	20	125,309	102,329	89,000
	Chamba WL	20	165,364	138,088	61,800
Chamba	Pangi	20	105,748	58,217	
	Kinnaur	40	267,529	76,341	78,500
Kinnaur	Sarahan WL	20	213,827	102,340	71,690
	Kullu	30	104,104	79,156	
Kullu	Kullu WL	10	168,474	96,250	64,000
Lahaul & Spiti	Spiti(W/L)	20	294,798	76,020	151,300
	Karsog	20	231,443	80,325	
Mandi	Mandi	20	101,706	184,523	436,750
	Kotgarh	20	194,222	43,680	89,300
	Rampur	21	136,344	50,256	46,303
Shimla	Theog	20	250,975	112,990	112,433
Total of Territorial		341	204,568	92,702	126,033
Kangra	Bajinath	3	128,633		
Kullu	Kullu	11	217,988	243,500	
Mandi	Mandi	3		78,800	
Kangra	Palampur	1	221,600		
Kullu	Parvati	10	121,033	132,700	
Kinnaur	Kinnaur	21	239,211	91,767	
Shimla	Theog	1		110,400	
Solan	Nalagarh	5	412,008	852,900	
Shimla	Kotgarh	2		446,400	
Solan	Baddi	2	405,600	159,000	
Total of Graziers/ Grassl		59	218,654	231,327	
Grand Total		400	206,210	115,633	126,033

Source: Livelihood Survey, JICA Study Team (2017)

11. Preferences of Tree Species

11.1 No of Households Planting Tree Species around Homestead and Agriculture Land including ridges

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total			
			Around Homestead		Agriculture Land including ridges in the farm		Around Homestead		Agriculture Land including ridges in the farm		Around Homestead		Agriculture Land including ridges in the farm	
			Counts of Responses	Average No of Species	Counts of Responses	Average No of Species	Counts of Responses	Average No of Species	Counts of Responses	Average No of Species	Counts of Responses	Average No of Species	Counts of Responses	Average No of Species
Bilaspur	Bilaspur	60	25	3	40	3	16	3	20	2	41	3	60	2
	Bharmour	20	8	4	11	1	5	3	9	1	13	3	20	1
	Chamba WL	20					12	2	20	1	12	2	20	1
Chamba	Panga	20	4	2	10	1	6	2	10	0	10	2	20	1
	Kinnaur	40	13	3	19	2	16	3	21	1	29	3	40	1
Kinnaur	Sarahan WL	20					17	3	20	2	17	3	20	2
	Kullu	20	5	3	10	2	7	2	10	3	12	3	20	2
Kullu	Kullu WL	20					14	2	20	1	14	2	20	1
Lahaul & Spiti	Spiti(W/L)	20					2	2	20	1	7	2	20	1
	Karsog	20	10	4	10	3	9	4	10	4	19	4	20	3
Mandi	Mandi	20	8	4	9	2	9	3	11	2	17	4	20	2
	Kotgarh	20	9	3	10	2	8	3	10	3	17	3	20	2
	Rampur	21	8	3	10	1	10	5	11	3	18	4	21	2
Shimla	Theog	20	10	4	11	2	7	4	9	2	17	4	20	2
Total of Territorial		341	100	3	140	2	143	3	201	2	243	3	341	2
Kangra	Bainath	3					1	2	3	0	1	2	3	0
Kullu	Kullu	11					10	1	11	0	10	1	11	0
Mandi	Mandi	3							3	1			3	1
Kangra	Palampur	1							1	2			1	2
Kullu	Parvati	10					2	1	10	1	2	1	10	1
Kinnaur	Kinnaur	21					10	3	21	1	10	3	21	1
Shimla	Theog	1							1	0			1	0
Solan	Nalagarh	5							5	0			5	0
Shimla	Kotgarh	2							2	0			2	0
Solan	Baddi	2							2	0			2	0
Total of Graziers/ Grassland		59					23	2	59	1	23	2	59	1
Grand Total		400	100	3	140	2	166	3	260	1	266	3	400	2

Source: Livelihood Survey, JICA Study Team (2017)

11.2 Purposes of Planting Various Species

1) Around Homestead

District	Division	No of Respondents Interviewed	For Selling							Home Consumption										Both for Selling and Home Consumption					
			Toon	Deodar	Walnut	Mango	Wild Apricot	Tota No of Responses	Ohi	Kachnar	Toon	Deodar	Walnut	Mango	Chirpine	Poplar	Willow	Bamboo	Wild Apricot	Marinoo	Horse Chestnut	Total No of Responses	Walnut	Mango	Total No of Responses
Bilaspur	Bilaspur	60	1				1		2	1	6	6		3	24		8	3				55			0
	Bharmour	20			1				1			2		3	6					1		15			0
	Chamba WL	20							0				4	7								11			0
Chamba	Panga	20							0				6									6			0
	Kinnaur	40							0			1	4	9						23	1	38			0
Kinnaur	Sarahan WL	20							0				1	7					8			16			0
	Kullu	20							0				2	1								3			0
Kullu	Kullu WL	20							0				1						2			3			0
Lahaul & Spiti	Spiti(W/L)	20							0													0			0
	Karsog	20							0			5		3								10		1	1
Mandi	Mandi	20							0	6	4		2	3	1			1				18			0
	Kotgarh	20						1	1					2	2							4			0
	Rampur	21							0				6				1		8			15	2		2
Shimla	Theog	20				1			1				1	2								4			0
Total of Territorial		341	1	0	2	2	0	5	7	12	13	17	56	27	5	1	9	44	1	1	198	2	1	3	
Kangra	Bainath	3							2						1							1			0
Kullu	Kullu	11		2					0				1			1			1			4			0
Mandi	Mandi	3							0													0			0
Kangra	Palampur	1							0													0			0
Kullu	Parvati	10							0													0			0
Kinnaur	Kinnaur	21						1	1				8		1				6			15			0
Shimla	Theog	1							0													0			0
Solan	Nalagarh	5							0													0			0
Shimla	Kotgarh	2							0													0			0
Solan	Baddi	2							0													0			0
Total of Graziers/ Grassland		59	0	2	0	0	1	3	0	0	0	0	9	1	1	0	0	7	0	1	20	0	0	0	
Grand Total		400	1	2	2	2	1	8	7	12	13	17	65	28	6	6	1	9	51	1	218	2	1	3	

Source: Livelihood Survey, JICA Study Team (2017)

12.Requirement of Timber

12.1 Number of Families Used Timber and Small Timber between April 2016 and March 2017

District	Division	No of Respondents	JFM					Non JFM				
			Timber	Small Timber	Total	Timber	Small Timber	Total	Timber	Small Timber	Total	
Bilaspur	Bilaspur	60	3	1	4			0	3	3	4	
	Bharmour	20			0			0	0	0	0	
	Chamba WL	20			0			0	0	0	0	
Chamba	Pangi	20	2	1	3			0	2	1	3	
	Kinnaur	40			0			0	0	0	0	
Kinnaur	Sarahan WL	20			0	1	1	2	1	1	2	
	Kullu	20			0	1	1	1	1	0	1	
Kullu	Kullu WL	20			0	2	1	3	2	1	3	
	Lahaul & Spiti	20			0			0	0	0	0	
Mandi	Spiri(W/L)	20			0			0	0	0	0	
	Karsog	20			0			0	0	0	0	
	Mandi	20			0			0	0	0	0	
Shimla	Kotgarh	20			0			0	0	0	0	
	Rampur	21			0	1	1	1	1	0	1	
	Theog	20	1	2	1			0	1	0	1	
Total of Territorial		341	6	2	8	5	2	7	11	4	15	
Kangra	Bajinath	3			0			0	0	0	0	
Kullu	Kullu	11			0			0	0	0	0	
Mandi	Mandi	3			0			0	0	0	0	
Kangra	Palampur	1			0			0	0	0	0	
Kullu	Parvati	10			0	1	1	1	1	0	1	
Kinnaur	Kinnaur	21			0	9	1	10	9	1	10	
Shimla	Theog	1			0			0	0	0	0	
Solan	Nalagarh	5			0			0	0	0	0	
Shimla	Kotgarh	2			0			0	0	0	0	
Solan	Baddi	2			0			0	0	0	0	
Total of Graziers/ Grassland		59	0	0	0	10	1	11	10	1	11	
Grand Total		400	6	2	8	15	3	18	21	5	26	

Source: Livelihood Survey, JICA Study Team (2017)

12.2 Volume of Timber Used between April 2016 and March 2017

District	Division	No of Respondents	JFM							Non JFM							Total									
			Average Annual Requirement in Slippers*	Nearby Forest (Forest Department)	Nearby Forest (Owner not known)	Village/ GP Forest	Own Forest	From Cultivated Land	Total	Average Expenses for Procuring in INR	Average Annual Requirement in Slippers*	Nearby Forest (Forest Department)	Nearby Forest (Owner not known)	Village/ GP Forest	Own Forest	From Cultivated Land	Total	Average Expenses for Procuring in INR	Annual Requirement in Slippers*	Nearby Forest (Forest Department)	Nearby Forest (Owner not known)	Village/ GP Forest	Own Forest	From Cultivated Land	Total	Average Expenses for Procuring in INR
Bilaspur	Bilaspur	60	9.3					1	1	100,150								9.3	0	0	0	0	1	1	100,150	
	Bharmour	20							0									0	0	0	0	0	0	0		
	Chamba WL	20							0									0	0	0	0	0	0	0		
Chamba	Pangi	20	12.5		2				2	1,200								12.5	2	0	0	0	2	1,200		
	Kinnaur	40							0									0	0	0	0	0	0	0		
Kinnaur	Sarahan WL	20							0	1.0								1.0	0	0	0	0	0	0		
	Kullu	20							0	10.0				1				10.0	0	0	0	0	1	1		
Kullu	Kullu WL	20							0	27.5		1						27.5	1	0	0	0	0	1	15,000	
	Lahaul & Spiti	20							0									0	0	0	0	0	0	0		
Mandi	Karsog	20							0									0	0	0	0	0	0	0		
	Mandi	20							0									0	0	0	0	0	0	0		
	Kotgarh	20							0									0	0	0	0	0	0	0		
Shimla	Rampur	21							0									20.0	0	0	0	0	0	0		
	Theog	20	10					1	1	3,000	20.0							10.0	0	0	0	0	1	1	3,000	
	Total of Territorial	341	10.5	2	0	0	0	2	4	51,125	17.2	1	0	0	0	1	2	15,000	13.5	3	0	0	0	3	6	43,900
Kangra	Bajinath	3							0									0	0	0	0	0	0	0		
Kullu	Kullu	11							0									0	0	0	0	0	0	0		
Mandi	Mandi	3							0									0	0	0	0	0	0	0		
Kangra	Palampur	1							0									0	0	0	0	0	0	0		
Kullu	Parvati	10							0	1.0		1						1.0	0	0	0	0	0	1		
Kinnaur	Kinnaur	21							0	37.8		9						37.8	9	0	0	0	0	9	31,000	
Shimla	Theog	1							0									0	0	0	0	0	0	0		
Solan	Nalagarh	5							0									0	0	0	0	0	0	0		
Shimla	Kotgarh	2							0									0	0	0	0	0	0	0		
Solan	Baddi	2							0									0	0	0	0	0	0	0		
Total of Graziers/ Grassland		59						2	4	51,125	34.1	10	0	0	0	0	10	31,000	34.1	10	0	0	0	0	10	31,000
Grand Total		400	10.5	2	0	0	0	2	4	51,125	28.5	11	0	0	0	1	12	29,000	23.3	13	0	0	0	3	16	36,375

* 1 Slipper = 0.029 cubic metre

Source: Livelihood Survey, JICA Study Team (2017)

12.3 Small Timber (i.e. Poles of different sizes, fencing materials, branches) Used between April 2016 and March 2017

District	Division	No of Respondents Interviewed	Annual Requirement in Slippers*	JFM							Average Expenses for Procuring in INR	Average Annual Requirement in Slippers*	Non JFM							Average Expenses for Procuring in INR	Average Annual Requirement in Slippers*	Total							Average Expenses for Procuring in INR
				Main Source						Total			Main Source						Total			Main Source						Total	
				Nearby Forest (Forest Department)	Nearby Forest (Owner not known)	Village/ GP Forest	Own Forest	From Cultivated Land	Total				Nearby Forest (Forest Department)	Nearby Forest (Owner not known)	Village/ GP Forest	Own Forest	From Cultivated Land	Total				Nearby Forest (Forest Department)	Nearby Forest (Owner not known)	Village/ GP Forest	Own Forest	From Cultivated Land	Total		
Bilaspur	Bilaspur	60	6.0						0							0					6.0							0	
	Bharmour	20							0							0						0						0	
	Chamba WL	20							0							0						0						0	
Chamba	Pang	20	15.0	1					0							0					15.0	1						1	
	Kinnaur	40							0							0						0						0	
	Sarahan WL	20							0							0						20.0						0	
	Kullu	20							0							0						0						0	
	Kullu WL	20							0							0						15.0						0	
Lahaul & Spiti	Spiti (W/L)	20							0							0						0						0	
	Karsog	20							0							0						0						0	
Mandi	Mandi	20							0							0						0						0	
	Kotgarh	20							0							0						0						0	
	Rampur	21							0							0						0						0	
Shimla	Theog	20							0							0						0						0	
Total of Territorial		341	13.7	1	0	0	0	0	1	15.0	0	0	0	0	0	14.0	1	0	0	0	0	14.0	1	0	0	0	1		
Kangra	Bainath	3														0						0						0	
	Kullu	11														0						0						0	
	Mandi	3														0						0						0	
	Palampur	1														0						0						0	
	Parvati	10														0						0						0	
	Kinnaur	21								20.0	1					1						20.0	1					1	
Shimla	Theog	1														0						0						0	
Solan	Nalagarh	5														0						0						0	
Shimla	Kotgarh	2														0						0						0	
Solan	Baddi	2														0						0						0	
Total of Graziers/ Grassland		59								20.0	1	0	0	0	0	1					20.0	1	0	0	0	0	1		
Grand Total		400	17.5	1	0	0	0	0	1	17.5	1	0	0	0	0	1					15.2	2	0	0	0	0	2		

* 1 Slipper = 0.029 cubic metre

Source: Livelihood Survey, JICA Study Team (2017)

13.2 Production (1)

District	Division	No of Respondents Interviewed	Maize										Wheat										Potato																		
			Gross Product on Area in Biswa	Per Househo Id Product on Area in Biswa	Gross Investment in INR	Per Househo Id Investme nt in INR	Gross Harvest in Kg	Per Househo Id Harvest in Kg	Gross Househo Id Consumption in Kg	Per Househo Id Consumption in Kg	Gross Volume Sold in Kg	Per Househo Id Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)	Gross Product on Area in Biswa	Per Househo Id Product on Area in Biswa	Gross Investment in INR	Per Househo Id Investme nt in INR	Gross Harvest in Kg	Per Househo Id Harvest in Kg	Gross Househo Id Consumption in Kg	Per Househo Id Consumption in Kg	Gross Volume Sold in Kg	Per Househo Id Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)	Gross Product on Area in Biswa	Per Househo Id Product on Area in Biswa	Gross Investment in INR	Per Househo Id Investme nt in INR	Gross Harvest in Kg	Per Househo Id Harvest in Kg	Gross Househo Id Consumption in Kg	Per Househo Id Consumption in Kg	Gross Volume Sold in Kg	Per Househo Id Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)			
Bilaspur	Bilaspur	60	4,374	76.7	111,900	2,111	18,244	325.8	15,649.9	295.3	2,000.0	333.3	15.6	4.2	4,243.5	78.6	107,550.0	2,151.0	11,197.0	219.5	10,997.0	219.9					2.6	20.0	20.0	1,000.0	1,000.0	50.0	50.0	50.0	50.0	10.0	4.6				
Bilaspur	Bilaspur	20	591	34.8	7,200	1,200	1,920	112.9	1,400.0	87.5	350.0	350.0	14.0	3.2	331.0	27.6	6,000.0	1,500.0	1,275.0	106.3	1,100.0	100.0					3.9	161.4	16.1	2,800.0	560.0	747.0	62.3	627.0	57.0	100.0	100.0	10.0	4.6		
Chamba	Chamba WL	20	272	34.0			735	91.9	735.0	91.9				2.7	40.0	40.0			300.0	300.0	300.0					7.5	327.0	20.4	1,100.0	366.7	3,260.0	217.3	1,460.0	97.3	1,900.0	475.0	22.5	10.0			
Chamba	Pangi	20	385	27.5	1,300	650	595	49.6	580.0	58.0				1.5	260.0	28.9	1,500.0	750.0	655.0	72.8	590.0	84.3					2.5	138.0	12.6	3,100.0	1,033.0	625.0	56.8	605.0	60.5			4.5			
Chamba	Kimnour	40	140	28.0	4,900	980	590	118.0	490.0	98.0	100.0	100.0	15.0	4.2	525.0	32.8	24,100.0	1,606.7	2,255.0	112.8	2,155.0	107.8	100.0	100.0	15.0	4.3	382.0	16.6	14,000.0	1,167.0	3,255.0	141.5	2,855.0	124.1	400.0	133.3	8.7	8.5			
Chamba	Kimnour	20	316	22.6	6,200	1,240	1,280	98.5	1,280.0	98.5				4.1	810.0	42.6	12,800.0	1,600.0	2,745.0	144.5	2,145.0	119.2					3.4	363.0	22.7	10,800.0	1,350.0	4,000.0	266.7	3,100.0	238.5	600.0	150.0	13.8	11.0		
Chamba	Kimnour	20	548	42.2	8,900	1,113	2,550	182.1	2,030.0	184.5				4.7	140.0	28.0	2,500.0	833.3	1,000.0	166.7	800.0	160.0					7.1	58.0	9.7	4,550.0	1,138.0	970.0	161.7	370.0	74.0	500.0	500.0	20.0	16.7		
Chamba	Kimnour	20	227	18.9	6,400	914	1,786	137.4	1,786.0	137.4	200.0	200.0	20.0	7.9	110.0	27.5	3,000.0	1,500.0	760.0	152.0	760.0	152.0					6.9	38.0	6.3	500.0	500.0	400.0	100.0	400.0	100.0			10.5			
Lahaul & Spiti	Spiti(W/L)	20																																					18.1		
Lahaul & Spiti	Karsog	20	1,040	52.0	30,300	1,683	8,200	410.0	4,200.0	221.1	3,700.0	336.4	14.0	7.9	880.0	44.0	26,600.0	1,477.8	4,075.0	203.8	2,925.0	172.1	100.0	100.0	15.0	4.6	7.1	73.0	10.4	2,900.0	1,100.0	1,320.0	188.6	1,070.0	178.3						
Mandi	Mandi	20	2,380	119.0	30,200	1,777	12,400	620.0	7,050.0	371.1	5,350.0	594.4	14.7	5.2	2,300.0	121.1	24,900.0	1,556.3	4,605.0	242.4	3,505.0	194.7	800.0	400.0	13.5	2.0	6.0	62.0	15.5	3,750.0	937.5	775.0	155.0	275.0	68.8	500.0	250.0	8.0	12.5		
Mandi	Kotgarh	20	63	15.8	700	350	75	25.0	75.0	25.0				1.2																											
Mandi	Bampur	21	265	33.3	4,000	2,000	1,050	150.0	1,050.0	150.0				4.0	458.1	30.5	5,000.0	1,666.7	4,680.0	334.3	4,680.0	334.3																			
Mandi	Theog	20	232	29.0	12,550	1,793	1,760	230.0	1,560.0	223.9				7.6	40.0	20.0	1,000.0	1,000.0	300.0	200.0	200.0	200.0					10.2	460.5	24.2	22,700.0	4,540.0	14,900.0	709.5	2,500.0	138.9	9,600.0	2,400.0	11.7	32.4		
Shimla	Theog	20	232	29.0	12,550	1,793	1,760	230.0	1,560.0	223.9				7.6	40.0	20.0	1,000.0	1,000.0	300.0	200.0	200.0	200.0					10.2	460.5	24.2	22,700.0	4,540.0	14,900.0	709.5	2,500.0	138.9	9,600.0	2,400.0	11.7	32.4		
Shimla	Total of Territorial	341	10,832	54.2	224,550	1,701	51,185	261.1	37,885.0	205.9	11,700.0	403.4	14.6	4.7	10,376.6	57.6	219,950.0	1,788.2	34,947.0	194.2	30,557.0	180.8	1,000.0	250.0	14.3	3.4	2,142.5	17.7	77,500.0	1,550.0	30,652.0	251.2	13,412.0	120.8	13,600.0	715.8	14.1	14.3			
Kangra	Bajnath	3	80	80.0	1,500	1,500	600	600.0	600.0	600.0				7.5	140.0	46.7	1,700.0	850.0	900.0	300.0	900.0	300.0					6.4														
Kangra	Kullu	11	90	30.0	1,500	1,500	700	233.3	200.0	60.0				7.8	100.0	50.0	2,500.0	1,250.0	400.0	200.0	100.0	100.0					6.0														
Mandi	Mandi	3	120	60.0	2,000	2,000	500	500.0	500.0	500.0				4.2	80.0	80.0	2,000.0	2,000.0	400.0	400.0	400.0	400.0					5.0														
Kangra	Palampur	1																																							
Kullu	Parvati	10	98	19.6	2,000	667	440	146.7	400.0	200.0				4.5	255.0	31.9	12,900.0	2,580.0	1,180.0	168.6	900.0	180.0					4.6	95.0	15.8	11,300.0	2,825.0	1,750.0	291.7	200.0	66.7	1,150.0	1,150.0	12.0	18.4		
Chamba	Kimnour	21	120	17.1	4,100	820	350	50.0	350.0	200.0				20.0	2.9	322.0	29.3	12,600.0	1,400.0	720.0	60.0	720.0	60.0					10.0	2.2	377.0	22.2	17,300.0	1,573.0	1,585.0	99.1	1,495.0	93.4	90.0	90.0	12.5	4.2
Shimla	Theog	1																																							
Solan	Nalagarh	5	100	100.0																																					
Shimla	Kotgarh	2																																							
Solan	Baddi	2																																							
Total of Graziers/Grassland		59	608	32.0	12,600	1,050	2,590	172.7	2,050.0	157.7				20.0	4.3	977.0	37.6	35,700.0	1,785.0	3,900.0	150.0	3,020.0	137.3			10.0	4.0	472.0	20.5	28,600.0	1,906.7	3,335.0	151.6	1,695.0	89.2	1,240.0	620.0	12.3	7.1		
Grand Total		400	11,440	52.2	237,150	1,647	53,775	254.9	39,935.0	202.7	11,700.0	403.4	14.8	4.7	11,284.6	55.0	255,650.0	1,787.8	38,847.0	188.6	33,577.0	175.8	1,000.0	250.0	13.4	3.4	2,615.0	18.2	106,100.0	1,632.0	33,987.0	236.0	15,107.0	116.2	14,840.0	706.7	13.8	13.0			

*1 Bigha = 800 sq. m/ 1 biswa=40 sq. m
Source: Livelihood Survey, JICA Study Team (2017)

13.2 Production (2)

District	Division	No of Respondents Interviewed	Cauliflower										Cabbage										Tomato																		
			Gross Product on Area in Biswa	Per Househo Id Product on Area in Biswa	Gross Investment in INR	Per Househo Id Investme nt in INR	Gross Harvest in Kg	Per Househo Id Harvest in Kg	Gross Househo Id Consumption in Kg	Per Househo Id Consumption in Kg	Gross Volume Sold in Kg	Per Househo Id Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)	Gross Product on Area in Biswa	Per Househo Id Product on Area in Biswa	Gross Investment in INR	Per Househo Id Investme nt in INR	Gross Harvest in Kg	Per Househo Id Harvest in Kg	Gross Househo Id Consumption in Kg	Per Househo Id Consumption in Kg	Gross Volume Sold in Kg	Per Househo Id Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)	Gross Product on Area in Biswa	Per Househo Id Product on Area in Biswa	Gross Investment in INR	Per Househo Id Investme nt in INR	Gross Harvest in Kg	Per Househo Id Harvest in Kg	Gross Househo Id Consumption in Kg	Per Househo Id Consumption in Kg	Gross Volume Sold in Kg	Per Househo Id Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)			
Bilaspur	Bilaspur	60	10.0	10.0	500.0	500.0	50.0	50.0	50.0	50.0				5.0	10.0	10.0	500.0	500.0	50.0	50.0	50.0	50.0					5.0	60.0	20.0	3,600.0	1,200.0	6,650.0	2,216.7	50.0	50.0	6,600.0	2,200.0	18.3	110.8		
Bilaspur	Bilaspur	20	5.0	5.0			10.0	10.0	10.0	10.0				2.0	5.0	5.0			10.0	10.0	10.0	10.0					2.0	6.0	3.0			20.0	10.0	20.0	10.0						3.3
Chamba	Chamba WL	20																																							
Chamba	Pangi	20	12.0	6.0	500.0	500.0	50.0	25.0	50.0																																

13.3 Where to Sell the Produce

District	Division	No of Respondents Interviewed	Maize		Wheat		Potato		Cauliflower		Cabbage		Tomato		Green Peas		French Beans		Rice		Pulses		Ginger		Garlic		Capsicum		Colocasia		Barley		Pulses (Mash/ Vigna Vadiata)		Total	
			Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village	Inside the Village	Outside the Village
Bilaspur	Bilaspur	60	3	2									1	1																					6	3
	Bharmour	20	1				1															2								2				8	0	
	Chamba WL	20					3	1														7												10	1	
Chamba	Pangi	20																																0	0	
	Kinnaur	40	1		1		1	2		2		2										2	3											5	9	
Kinnaur	Sarahan WL	20					2	2		1		1										1												6	2	
	Kullu	30						1		3				6											1					1				1	11	
Kullu	Kullu WL	10																																0	0	
Lahaul & Spiti	Spiti(W/L)	20											1																					1	0	
	Karsog	20	5	6	1								1	1	1																			7	7	
Mandi	Mandi	20	3	6	1	1	1	1	4	5		2	2	5			1	1						1	1		1						14	23		
	Kotgarh	20					1	1					1	2																				4	2	
	Rampur	21					1	3				2																						1	7	
Shimla	Theog	20								5		3					7													1				0	16	
Total of Territorial		341	13	14	3	1	10	10	5	15	1	9	5	15	1	0	0	8	1	0	12	5	1	1	2	1	1	0	4	1	0	2	0	63	81	
Kangra	Bairmath	3																																0	0	
Kullu	Kullu	11									1		2	5																				0	8	
Mandi	Mandi	3																																0	0	
Kangra	Palampur	1																																0	0	
Kullu	Purvati	10						1						1																				0	2	
Kinnaur	Kinnaur	21					1															1	3											2	3	
Shimla	Theog	1																																0	0	
Solan	Nalagarh	5																																0	0	
Shimla	Kotgarh	2																																0	0	
Solan	Baddi	2																																0	0	
Total of Graziers/ Grassland		59	0	0	0	0	1	1	0	1	0	2	0	6	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	2	13	
Grand Total		400	13	14	3	1	11	11	5	16	1	11	5	21	1	0	0	8	1	0	13	8	1	1	2	1	1	0	4	1	0	0	2	65	94	

Source: Livelihood Survey, JICA Study Team (2017)

14.2 Production (1)

District	Division	No of Respondents Interviewed	Apple											Pomegranate												
			Gross Production Area in Biswa	Per Household Production Area in Biswa	Gross Investment in INR	Per Household Investment in INR	Gross Harvest in Kg	Per Household Harvest in Kg	Gross Household Consumption in Kg	Per Household Consumption in Kg	Gross Volume Sold in Kg	Per Household Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)	Gross Production Area in Biswa	Per Household Production Area in Biswa	Gross Investment in INR	Per Household Investment in INR	Gross Harvest in Kg	Per Household Harvest in Kg	Gross Household Consumption in Kg	Per Household Consumption in Kg	Gross Volume Sold in Kg	Per Household Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)
Bilaspur	Bilaspur	60	2.7	0.9	2,200.0	733.3	100.0	100.0	100.0	100.0			37.7	0.5	0.5	1,000.0	1,000.0	21.0	10.5	21.0	10.5					42.0
	Bharmour	20	14.0	1.8	87,000.0	12,429.0	26,060.0	2,895.6	230.0	38.3	24,970.0	3,121.3	28.8	1,861.4												
	Chamba WL	20	7.5	1.9	21,500.0	7,167.0	5,060.0	722.9	1,460.0	243.3	3,500.0	1,750.0	40.0	674.7												
Chamba	Pangi	20	19.1	1.9	22,800.0	2,533.3	820.0	273.3	120.0	60.0	780.0	260.0	22.0	42.9												
	Kinnaur	40	153.0	5.1	1,863,200.0	64,248.3	189,565.0	6,770.2	3,165.0	158.3	160,450.0	6,685.4	50.0	1,239.0												
	Sarahan WL	20	98.5	6.6	179,200.0	11,200.0	9,470.0	728.5	930.0	103.3	5,540.0	461.7	105.3	96.1												
Kinnaur	Kullu	30	50.1	2.9	215,500.0	16,576.9	33,470.0	3,347.0	220.0	44.0	33,290.0	3,329.0	32.6	667.8	7.5	1.9	19,000.0	6,333.3	1,600.0	800.0			1,600.0	800.0	35.0	213.3
	Kullu WL	10	60.0	4.0	326,000.0	23,285.7	39,950.0	2,853.6	1,470.0	183.8	38,500.0	2,750.0	40.7	665.8												
	Lahaul & Spiti	20	21.0	3.0	314,000.0	44,857.1	13,150.0	2,630.0	256.0	64.0	15,000.0	2,500.0	95.0	626.2												
	Karsog	20																								
	Mandi	20													0.1	0.1					1.0	1.0				0.0
	Kotgarh	20	16.5	2.4	91,800.0	11,475.0	5,240.0	748.6	164.0	41.0	5,076.0	846.0	64.8	317.6		50.0	50.0	10.0	10.0							
	Rampur	21	71.4	5.5	93,000.0	11,625.0	8,030.0	1,003.8	1,370.0	228.3	6,420.0	1,070.0	396.0	112.5												
Shimla	Theog	20	54.5	3.9	254,500.0	25,450.0	5,390.0	770.0	605.0	121.0	4,475.0	1,118.8	53.6	98.9												
Total of Territorial		341	568.3	4.0	3,470,700.0	27,328.3	336,305.0	3,002.7	10,090.0	132.8	298,001.0	3,136.9	72.8	591.8	8.1	1.4	20,050.0	4,010.0	1,631.0	326.2	22.0	7.3	1,600.0	800.0	35.0	201.4
Kangra	Bainjath	3																								
	Kullu	11	12.0	6.0	165,000.0	82,500.0	30,000.0	15,000.0	100.0	100.0	7,500.0	3,750.0	30.0	2,500.0	28.5	4.1	640,000.0	91,428.6	20,236.0	2,890.9	290.0	58.0	20,235.0	2,890.7	48.6	710.0
	Mandi	3																								
	Kangra	1																								
	Kullu	10													3.0	3.0	20,000.0	20,000.0	2,500.0	2,500.0	50.0	50.0	2,500.0	2,500.0	50.0	833.3
Kinnaur	Kinnaur	21	58.0	3.4	770,500.0	51,366.7	54,425.0	3,628.3	1,035.0	86.3	20,470.0	1,462.1		938.4												
Shimla	Theog	1																								
	Nalagarh	5																								
	Shimla	2																								
	Solan	2																								
	Baddi	2																								
Total of Graziers/ Grassland		59	70.0	3.7	935,500.0	55,029.4	84,425.0	4,966.2	1,135.0	87.3	27,970.0	1,748.1	93,856.4	1,206.1	31.5	3.9	660,000.0	82,500.0	22,736.0	2,842.0	340.0	56.7	22,735.0	2,841.9	48.8	721.8
Grand Total		400	638.3	3.9	4,406,200.0	30,598.6	420,730.0	3,261.5	11,225.0	126.1	325,971.0	2,936.7	13,470.5	659.2	39.6	2.8	680,050.0	52,311.5	24,367.0	1,874.4	362.0	40.2	24,335.0	2,433.5	46.0	615.3

* 1 bigha = 800 sq. m/ 1 biswa=40 sq. m

Source: Livelihood Survey, JICA Study Team (2017)

District	Division	No of Respondents Interviewed	P each											Plum												
			Gross Production Area in Biswa	Per Household Production Area in Biswa	Gross Investment in INR	Per Household Investment in INR	Gross Harvest in Kg	Per Household Harvest in Kg	Gross Household Consumption in Kg	Per Household Consumption in Kg	Gross Volume Sold in Kg	Per Household Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)	Gross Production Area in Biswa	Per Household Production Area in Biswa	Gross Investment in INR	Per Household Investment in INR	Gross Harvest in Kg	Per Household Harvest in Kg	Gross Household Consumption in Kg	Per Household Consumption in Kg	Gross Volume Sold in Kg	Per Household Volume Sold in Kg	Average Sales Price per Kg	Yield (Kg/ biswa)
Bilaspur	Bilaspur	60																								
	Bharmour	20																								
	Chamba WL	20																								
Chamba	Pangi	20					15.0	15.0																		
	Kinnaur	40																								
	Sarahan WL	20					10.0	10.0	10.0	10.0																
Kinnaur	Kullu	30	3.5	1.2	1,000.0	1,000.0	1,000.0	1,000.0			1,000.0	1,000.0	30.0	285.7	1.0	1.0	5,000.0	5,000.0								0.0
	Kullu WL	10																								
	Lahaul & Spiti	20																								
	Karsog	20																								
	Mandi	20	0.1	0.1					1.0	1.0			0.0													
	Kotgarh	20	2.0	2.0	13,000.0	6,500.0	470.0	235.0	10.0	10.0	460.0	230.0	40.0	235.0	5.0	1.0	17,000.0	4,250.0	880.0	176.0	5.0	5.0	1,075.0	215.0	39.0	176.0
	Rampur	21																								
	Theog	20																								
Total of Territorial		341	5.6	1.1	14,000.0	4,666.7	1,495.0	299.0	21.0	7.0	1,460.0	486.7	36.7	267.0	6.0	1.0	22,000.0	4,400.0	880.0	176.0	6.0	3.0	1,075.0	215.0	39.0	146.7
Kangra	Bainjath	3																								
	Kullu	11																								
	Mandi	3																								
	Kangra	1																								
	Kullu	10																								
Kinnaur	Kinnaur	21																								
Shimla	Theog	1																30.0	30.0	30.0	30.0					
	Nalagarh	5																								
	Shimla	2																								
	Solan	2																								
	Baddi	2																								
Total of Graziers/ Grassland		59																								
Grand Total		400	5.6	1.1	14,000.0	4,666.7	1,495.0	299.0	21.0	7.0	1,460.0	486.7	36.7 </													

14.5 Who collects market related information?

District	Division	No of Respondents Interviewed	JFM			Non JFM			Total			% to Total		
			Male Adult	Female Adult	Total	Male Adult	Female Adult	Total	Male Adult	Female Adult	Total	Male Adult	Female Adult	Total
Bilaspur	Bilaspur	60	1	1	2	4		4	5	1	6	83.3	16.7	100.0
Chamba	Bharmour	20	3	2	5	7	1	8	10	3	13	76.9	23.1	100.0
	Chamba WL	20			0	5	1	6	5	1	6	83.3	16.7	100.0
	Pangi	20	2	2	2	2		2	4	0	4	100.0	0.0	100.0
Kinnaur	Kinnaur	40	4		4	9	1	10	13	1	14	92.9	7.1	100.0
	Sarahan WL	20			0	9	2	11	9	2	11	81.8	18.2	100.0
Kullu	Kullu	20	5	2	7	6	2	8	11	4	15	73.3	26.7	100.0
	Kullu WL	20			0	10	2	12	10	2	12	83.3	16.7	100.0
Lahaul & Spiti	Spiti(W/L)	20			0	8	3	11	8	3	11	72.7	27.3	100.0
Mandi	Karsog	20			0	3		3	3	0	3	100.0	0.0	100.0
	Mandi	20			0			0	0	0	6	1.0	0.0	1.0
	Kotgarh	20	3	1	4	6		6	9	1	10	90.0	10.0	100.0
Shimla	Rampur	21	4		4	3		3	7	0	7	100.0	0.0	100.0
	Theog	20	1		1	1		1	2	0	2	100.0	0.0	100.0
Total of Territorial		341	23	6	29	73	12	85	96	18	120	80.0	15.0	95.0
Kangra	Bajjnath	3			0	1		1	1	0	1	100.0	0.0	100.0
Kullu	Kullu	11			0	7		7	7	0	7	100.0	0.0	100.0
Mandi	Mandi	3			0			0	0	0	0	-	-	0.0
Kangra	Palampur	1			0			0	0	0	0	-	-	0.0
Kullu	Parvati	10			0	2		2	2	0	2	100.0	0.0	100.0
Kinnaur	Kinnaur	21			0	12		12	12	0	12	100.0	0.0	100.0
Shimla	Theog	1			0			0	0	0	0	-	-	0.0
Solan	Nalagarh	5			0			0	0	0	0	-	-	0.0
Shimla	Kotgarh	2			0			0	0	0	0	-	-	0.0
Solan	Baddi	2			0			0	0	0	0	-	-	0.0
Total of Graziers/ Grassland		59	0	0	0	22	0	22	22	0	22	100.0	0.0	100.0
Grand Total		400	23	6	29	95	12	107	118	18	142	83.1	12.7	95.8

Source: Livelihood Survey, JICA Study Team (2017)

15. NTFP

15.1 No of Households Collecting Various NTFPs (JFM)

District	Division	Total No of Respondents	Patis	Bankakri	Kadu	Kuth	Dhoop	Guchhi	Chilgoza/Neozoa/Pine nut	Kala Jeera	Bach/Bare	Chora	Somlata	Banafsha	Kashmal/Berberis	Jangli Lehsun	Talis Patra	Bhojpatra	Pine Cones	Tol Patta	Bamboo	Nagala	Harad	Beheda	Wild Pomegranate	Tjamgo	Behendi	Chukri	Rakcha	Neelkanti	Sugandri	Total
Bilaspur	Bilaspur	60																														0
	Bharmour	20						2	2																							4
	Chamba WL	20						6	5		1																					16
Chamba	Pangi	20	1					4																								18
	Kinnaur	40								1																						1
Kinnaur	Sarahan WL	20	2	1				3	3																							13
	Kullu	20																														0
Kullu	Kullu WL	20	1																													2
Lahaul & Spiti	Spiti(W/L)	20																														0
	Karsog	20							1																							1
Mandi	Mandi	20																														3
	Kotgarh	20																			1	1	1									1
	Rampur	21						1	2	1																						11
Shimla	Theog	20																														0
	Total of Territorial	341	4	2	0	0	0	16	13	2	9	0	6	0	0	0	5	4	2	0	1	1	1	0	0	0	1	1	2	0	0	70
Kangra	Bajinath	3																														0
Kullu	Kullu	11																														0
Mandi	Mandi	3																														0
Kangra	Palampur	1																														0
Kullu	Parvati	10	1																													4
Kinnaur	Kinnaur	21						7	4	6	9																					30
Shimla	Theog	1																														0
Solan	Nalagarh	5																														6
Shimla	Kotgarh	2																														0
Solan	Baddi	2																														0
	Total of Graziers/ Grassland	59	1	0	1	0	7	4	6	9	0	0	0	0	0	3	0	1	2	0	0	0	3	3	0	0	0	0	0	0	0	40
	Grand Total	400	5	2	1	0	23	17	8	18	0	6	0	0	0	8	4	3	2	1	1	1	3	3	0	1	0	1	2	0	110	

Source: Livelihood Survey, JICA Study Team (2017)

15.1 No of Households Collecting Various NTFPs (Non JFM)

District	Division	Total No of Respondents	Patis	Bankakri	Kadu	Kuth	Dhoop	Guchhi	Chilgoza/Neozoa/Pine nut	Kala Jeera	Bach/Bare	Chora	Somlata	Banafsha	Kashmal/Berberis	Jangli Lehsun	Talis Patra	Bhojpatra	Pine Cones	Tol Patta	Bamboo	Nagala	Harad	Beheda	Wild Pomegranate	Tjamgo	Behendi	Chukri	Rakcha	Neelkanti	Sugandri	Total	
Bilaspur	Bilaspur	60																														0	
	Bharmour	20						2	2																								4
	Chamba WL	20						6	5		1																						16
Chamba	Pangi	20	1					4																									18
	Kinnaur	40																															1
Kinnaur	Sarahan WL	20	2	1				3	3																								13
	Kullu	20																															0
Kullu	Kullu WL	20	1																														2
Lahaul & Spiti	Spiti(W/L)	20																															0
	Karsog	20							1																								1
Mandi	Mandi	20																															3
	Kotgarh	20																															1
	Rampur	21						1	2	1																							11
Shimla	Theog	20																															0
	Total of Territorial	341	4	2	0	0	0	16	13	2	9	0	6	0	0	0	5	4	2	0	1	1	1	0	0	0	1	1	2	0	0	70	
Kangra	Bajinath	3																															0
Kullu	Kullu	11																															0
Mandi	Mandi	3																															0
Kangra	Palampur	1																															0
Kullu	Parvati	10	1																														4
Kinnaur	Kinnaur	21						7	4	6	9																						30
Shimla	Theog	1																															0
Solan	Nalagarh	5																															6
Shimla	Kotgarh	2																															0
Solan	Baddi	2																															0
	Total of Graziers/ Grassland	59	1	0	1	0	7	4	6	9	0	0	0	0	0	3	0	1	2	0	0	0	3	3	0	0	0	0	0	0	0	40	
	Grand Total	400	5	2	1	0	23	17	8	18	0	6	0	0	0	8	4	3	2	1	1	1	3	3	0	1	0	1	2	0	110		

Source: Livelihood Survey, JICA Study Team (2017)

15.1 No of Households Collecting Various NTFPs (Total)

District	Division	Total No of Respondents	Patis	Bankakri	Kadu	Kuth	Dhoop	Guchhi	Chilgoza/Neozoa/Pine nut	Kala Jeera	Bach/Bare	Chora	Somlata	Banafsha	Kashmal/Berberis	Jangli Lehsun	Talis Patra	Bhojpatra	Pine Cones	Tol Patta	Bamboo	Nagala	Harad	Beheda	Wild Pomegranate	Tjamgo	Behendi	Chukri	Rakcha	Neelkanti	Sugandri	Total	
Bilaspur	Bilaspur	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bharmour	20	1	0	1	1	3	3	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	11
	Chamba WL	20	0	0	0	0	6	5	0	1	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
	Pangi	20	2	0	0	0	6	5	0	13	0	1	0	0	0	3	0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	34	
	Kinnaur	40	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
	Sarahan WL	20	2	1	0	0	3	3	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	13	
	Kullu	20	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3		
	Kullu WL	20	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
	Lahaul & Spiti	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Karsog	20	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	5	
	Mandi	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	
	Kotgarh	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
	Rampur	21	0	11	0	0	2	3	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	13	
	Shimla	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of Territorial		341	6	2	1	1	20	24	2	14	1	8	0	0	0	5	4	2	0	2	1	2	0	0	1	2	1	1	2	1	1	104	
Kangra	Bajinath	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Kullu	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mandi	Mandi	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Kinnaur	Kinnaur	21	0	0	1	0	7	4	6	9	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	30
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	6
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of Graziers/ Grassland		59	1	0	1	0	7	4	6	9	0	0	0	0	0	3	0	1	2	0	0	0	3	3	0	0	0	0	0	0	0	40	
Grand Total		400	7	2	2	1	27	28	8	23	1	8	0	0	0	8	4	3	2	2	1	2	3	3	1	2	1	1	2	1	11		

Source: Livelihood Survey, JICA Study Team (2017)

15.1 No of Households Collecting Various NTFPs (% to the Total No of Respondents (a))

		% to the Total No of Respondents (a)																															
District	Division	Total No of Respondents (a)	Patis	Bankakri	Kadu	Kuth	Dhoop	Guchhi	Chilgoza/Neozoa/Pine nut	Kala Jeera	Bach/Bare	Chora	Somlata	Banafsha	Kashmal/Berberis	Jangli Lehsun	Talis Patra	Bhojpatra	Pine Cones	Tol Patta	Bamboo	Nagala	Harad	Beheda	Wild Pomegranate	Tjamgo	Behendi	Chukri	Rakcha	Neelkanti	Sugandri		
Bilaspur	Bilaspur	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Bharmour	20	5.0	0.0	5.0	5.0	15.0	15.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Chamba WL	20	0.0	0.0	0.0	0.0	30.0	25.0	0.0	5.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Pangi	20	10.0	0.0	0.0	0.0	30.0	25.0	0.0	65.0	0.0	5.0	0.0	0.0	0.0	15.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Kinnaur	40	0.0	0.0	0.0	0.0	0.0	5.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Sarahan WL	20	10.0	5.0	0.0	0.0	15.0	15.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	0.0	0.0	0.0	
	Kullu	20	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	
	Kullu WL	20	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Lahaul & Spiti	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Karsog	20	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	0.0	
	Mandi	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Kotgarh	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Rampur	21	0.0	4.8	0.0	0.0	9.5	14.3	4.8	0.0	0.0	9.5	0.0	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0		
	Shimla	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total of Territorial		341	1.8	0.6	0.3	0.3	5.9	7.0	0.6	4.1																							

15. NTFP

15.5 No of Households Engaged in NTFP Processing (JFM)

District	Division	No of Respondents Interviewed	Patis	Bankakri	Kadu	Dhoop	Guchhi	Chilgoza / Pine Nuts	Kala Jeera	Chora	Somlata	Banfsha	Kashmal / Berberis	Jangli Lehsun	Talis Patra	Bhojpatra	Pine cones	Tol Ptta	Bamboo	Nagale	Harad	Beheda	Wild Pmegranat	Total
Bilaspur	Bilaspur	60																						0
	Bharmour	20	1		1	1					1													5
	Chamba WL	20																						0
Chamba	Pangi	20																						0
	Kinnaur	40					2																	2
Kinnaur	Sarahan WL	20																						0
	Kullu	20																						0
Kullu	Kullu WL	20																						0
Lahaul & Spiti	Spiti(W/L)	20																						0
	Karsog	20																					1	1
Mandi	Mandi	20																						0
	Kotgarh	20																						0
	Rampur	21																						0
Shimla	Theog	20																						0
Total of Territorial		341	1	0	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	8
Kangra	Bajnath	3																						0
Kullu	Kullu	11																						0
Mandi	Mandi	3																						0
Kangra	Palampur	1																						0
Kullu	Parvati	10																						0
Kinnaur	Kinnaur	21																						0
Shimla	Theog	1																						0
Solan	Nalagarh	5																						0
Shimla	Kotgarh	2																						0
Solan	Baddi	2																						0
Total of Graziers/Grassland		59																						0
Grand Total		400	1	0	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	8

Source: Livelihood Survey, JICA Study Team (2017)

15.5 No of Households Engaged in NTFP Processing (Non JFM)

District	Division	No of Respondents Interviewed	Patis	Bankakri	Kadu	Dhoop	Guchhi	Chilgoza / Pine Nuts	Kala Jeera	Chora	Somlata	Banfsha	Kashmal / Berberis	Jangli Lehsun	Talis Patra	Bhojpatra	Pine cones	Tol Ptta	Bamboo	Nagale	Harad	Beheda	Wild Pmegranat	Total
Bilaspur	Bilaspur	60																						0
	Bharmour	20				1	1																	2
	Chamba WL	20		1			1																	2
Chamba	Pangi	20				2				2					1									5
	Kinnaur	40	2																					2
Kinnaur	Sarahan WL	20																						0
	Kullu	20																						0
Kullu	Kullu WL	20	1												1									2
Lahaul & Spiti	Spiti(W/L)	20																						0
	Karsog	20	1																					1
Mandi	Mandi	20																	1	2		1		4
	Kotgarh	20																						0
	Rampur	21					1																	1
Shimla	Theog	20																						0
Total of Territorial		341	4	1	0	3	3	0	2	0	0	0	0	2	0	0	0	0	1	2	1	0	0	19
Kangra	Bajnath	3																						0
Kullu	Kullu	11																						0
Mandi	Mandi	3																						0
Kangra	Palampur	1																						0
Kullu	Parvati	10	3								2	1	2	3	4									15
Kinnaur	Kinnaur	21			1	7	1	3	9							1	2							24
Shimla	Theog	1																						0
Solan	Nalagarh	5																				3	3	6
Shimla	Kotgarh	2																						0
Shimla	Kotgarh	2																						0
Solan	Baddi	2																						0
Total of Graziers/Grassland		59	3	0	1	7	1	3	9	0	2	1	2	3	4	1	2	0	0	0	3	3	0	45
Grand Total		400	7	1	1	10	4	3	11	0	2	1	2	5	4	1	2	1	2	1	3	3	0	64

Source: Livelihood Survey, JICA Study Team (2017)

15.5 No of Households Engaged in NTFP Processing (Total)

District	Division	No of Respondents Interviewed	Patis	Bankakri	Kadu	Dhoop	Guchhi	Chilgoza / Pine Nuts	Kala Jeera	Chora	Somlata	Banfsha	Kashmal / Berberis	Jangli Lehsun	Talis Patra	Bhojpatra	Pine cones	Tol Ptta	Bamboo	Nagale	Harad	Beheda	Wild Pmegranat	Total
Bilaspur	Bilaspur	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bharmour	20	1	0	1	2	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	7
	Chamba WL	20	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Chamba	Pangi	20	0	0	0	2	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5
	Kinnaur	40	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Kinnaur	Sarahan WL	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Kullu	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Kullu WL	20	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Lahaul & Spiti	Spiti(W/L)	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Karsog	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Mandi	Mandi	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	4
	Kotgarh	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rampur	21	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Shimla	Theog	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of Territorial		341	5	1	1	4	5	0	2	1	0	0	2	0	0	0	0	1	2	2	0	0	1	27
Kangra	Bajnath	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Kullu	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mandi	Mandi	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kangra	Palampur	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10	3	0	0	0	0	0	0	2	1	2	3	4	0	0	0	0	0	0	0	0	0	15
Kinnaur	Kinnaur	21	0	0	1	7	1	3	9	0	0	0	0	0	0	1	2	0	0	0	0	0	0	24
Shimla	Theog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	6
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solan	Baddi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total of Graziers/ Grassland		59	3	0	1	7	1	3	9	0	2	1	2	3	4	1	2	0	0	0	3	3	0	45
Grand Total		400	8	1	2	11	6	3	11	1	2	1	2	5	4	1	2	1	2	2	3	3	1	72

Source: Livelihood Survey, JICA Study Team (2017)

15.6 Type of Processing for Main NTFPs (1)

District	Division	No of Respondents Interviewed	Patis				Dhoop				Guchhi				Chilgoza/ Pine Nut				Kala Jeera					
			Drying	Sorting/ Grading	Bundling	Making another product	Drying	Sorting/ Grading	Bundling	Making another product	Drying	Sorting/ Grading	Bundling	Making another product	Drying	Sorting/ Grading	Bundling	Making another product	Drying	Sorting/ Grading	Bundling	Making another product		
Bilaspur	Bilaspur	60																						
	Bharmour	20	1					2						1										
	Chamba WL	20				1							1											
Chamba	Pangi	20	3	1			1													1				
	Kinnaur	40	2											2										
Kinnaur	Sarahan WL	20																						
	Kullu	20	1																					
Kullu	Kullu WL	20																						
Lahaul & Spiti	Spiti(W/L)	20																						
	Karsog	20																						
Mandi	Mandi	20																						
	Kotgarh	20																						
	Rampur	21											1											
Shimla	Theog	20																						
Total of Territorial		341	7	1	0	1	3	0	0	0	5	0	0	0	0	0	0	0	0	1	0	0	0	0
Kangra	Bajnath	3																						
Kullu	Kullu	11																						
Mandi	Mandi	3																						
Kangra	Palampur	1																						
Kullu	Parvati	10																						
Kinnaur	Kinnaur	21					6	1	1		1	1				3				9		1		
Shimla	Theog	1																						
Solan	Nalagarh	5																						
Shimla	Kotgarh	2																						
Solan	Baddi	2																						
Total of Graziers/ Grassland		59	0	0	0	0	6	1	1	0	1	1	0	0	0	3	0	0	0	9	1	0	0	0
Grand Total		400	7	1	0	1	9	1	1	0	6	1	0	0	0	3	0	0	10	1	0	0	0	0

Source: Livelihood Survey, JICA Study Team (2017)

15.6 Type of Processing for Main NTFPs (2)

District	Division	No of Respondents Interviewed	Jangli Lehsun				Talis Patra				Total				Total (%)				
			Drying	Sorting/Grading	Bundling	Making another product	Drying	Sorting/Grading	Bundling	Making another product	Drying	Sorting/Grading	Bundling	Making another product	Total	Drying	Sorting/Grading	Bundling	Making another product
Bilaspur	Bilaspur	60								0	0	0	0	0	-	-	-	-	0.0
	Bharmour	20								4	0	0	0	4	100.0	0.0	0.0	0.0	100.0
	Chamba WL	20								1	0	0	0	1	2	50.0	0.0	0.0	50.0
Chamba	Pangi	20								5	1	0	0	6	83.3	16.7	0.0	0.0	100.0
	Kinnaur	40								4	0	0	0	4	100.0	0.0	0.0	0.0	100.0
	Sarahan WL	20								0	0	0	0	0	-	-	-	-	0.0
	Kullu	20	1							2	0	0	0	2	100.0	0.0	0.0	0.0	100.0
	Kullu WL	20								0	0	0	0	0	-	-	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20								0	0	0	0	0	-	-	-	-	0.0
	Karsog	20								0	0	0	0	0	-	-	-	-	0.0
Mandi	Mandi	20								0	0	0	0	0	-	-	-	-	0.0
	Kotgarh	20								0	0	0	0	0	-	-	-	-	0.0
	Rampur	21								1	0	0	0	1	100.0	0.0	0.0	0.0	100.0
Shimla	Theog	20								0	0	0	0	0	-	-	-	-	0.0
Total of Territorial		341	1	0	0	0	0	0	0	17	1	0	1	19	89.5	5.3	0.0	5.3	100.0
Kangra	Bajjnath	3								0	0	0	0	0	-	-	-	-	0.0
Kullu	Kullu	11								0	0	0	0	0	-	-	-	-	0.0
Mandi	Mandi	3								0	0	0	0	0	-	-	-	-	0.0
Kangra	Palampur	1								0	0	0	0	0	-	-	-	-	0.0
Kullu	Parvati	10	1					2		3	0	0	0	3	100.0	0.0	0.0	0.0	100.0
Kinnaur	Kinnaur	21								16	6	1	0	23	69.6	26.1	4.3	0.0	100.0
Shimla	Theog	1								0	0	0	0	0	-	-	-	-	0.0
Solan	Nalagarh	5								0	0	0	0	0	-	-	-	-	0.0
Shimla	Kotgarh	2								0	0	0	0	0	-	-	-	-	0.0
Solan	Baddi	2								0	0	0	0	0	-	-	-	-	0.0
Total of Graziers/ Grassland		59	1	0	0	0	2	0	0	19	6	1	0	26	73.1	23.1	3.8	0.0	100.0
Grand Total		400	2	0	0	0	2	0	0	36	7	1	1	45	80.0	15.6	2.2	2.2	100.0

Source: Livelihood Survey, JICA Study Team (2017)

15.7 No of Persons Engaged in Processing (1)

District	Division	No of Respondents	Patis						Dhoop						Guchhi						
			Women		Men		Children		Women		Men		Children		Women		Men		Children		
			Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	
Bilaspur	Bilaspur	60																			
	Bharmour	20	1	1						2	1						1	1			
	Chamba WL	20														1	1				
Chamba	Pangi	20								2	1	1	1								
	Kinnaur	40			2	1									2	1	2	1			
	Sarahan WL	20																			
	Kullu	20	1	1	1	1															
	Kullu WL	20																			
Lahaul & Spiti	Spiti(W/L)	20																			
	Karsog	20			1	1	1	1													
Mandi	Mandi	20																			
	Kotgarh	20																			
	Rampur	21														1	1				
Shimla	Theog	20																			
Total of Territorial		341	2	1	4	1	1	1	4	1	1	1		4	1	3	1				
Kangra	Bajjnath	3																			
Kullu	Kullu	11																			
Mandi	Mandi	3																			
Kangra	Palampur	1																			
Kullu	Parvati	10	1	1	3	1	3	3		4	1	7	1								
Kinnaur	Kinnaur	21														1	1				
Shimla	Theog	1																			
Solan	Nalagarh	5																			
Shimla	Kotgarh	2																			
Solan	Baddi	2																			
Total of Graziers/ Grassland		59	1	1	3	1	3	3	4	1	7	1				1	1				
Grand Total		400	3	1	7	1	4	2	8	1	8	1		4	1	4	1				

Source: Livelihood Survey, JICA Study Team (2017)

15.7 No of Persons Engaged in Processing (2)

District	Division	No of Respondents Interviewed	Chilgoza/ Pine Nut						Kala Jeera						Jangli Lehsun					
			Women		Men		Children		Women		Men		Children		Women		Men		Children	
			Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average
Bilaspur	Bilaspur	60																		
	Bharmour	20																		
	Chamba WL	20																		
Chamba	Pangi	20						2	1	1	1					1	1	1	1	
	Kinnaur	40																		
Kinnaur	Sarahan WL	20																		
	Kullu	20												1	1	1	1			
Kullu	Kullu WL	20																		
Lahaul & Spiti	Spiti(W/L)	20																		
	Karsog	20																		
Mandi	Mandi	20																		
	Kotgarh	20																		
	Rampur	21																		
Shimla	Theog	20																		
Total of Territorial		341								2	1	1	1			2	1	2	1	
Kangra	Bainath	3																		
Kullu	Kullu	11																		
Mandi	Mandi	3																		
Kangra	Palampur	1																		
Kullu	Parvati	10												2	1	2	1			
Kinnaur	Kinnaur	21	9	3	3	2		8	1	5	1									
Shimla	Theog	1																		
Solan	Nagarh	5																		
Shimla	Kotgarh	2																		
Solan	Baddi	2																		
Total of Graziers/ Grassland		59	9	3	3	2		8	1	5	1			2	1	2	1			
Grand Total		400	9	3	3	2		10	1	6	1			4	1	4	1			

Source: Livelihood Survey, JICA Study Team (2017)

15.7 No of Persons Engaged in Processing (2)

District	Division	No of Respondents Interviewed	Talis Patra						Total												
			Women		Men		Children		Women		Men		Children								
			Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average							
Bilaspur	Bilaspur	60																			
	Bharmour	20								4	1										
	Chamba WL	20								1	1										
Chamba	Pangi	20								5	1	3	1								
	Kinnaur	40								2	1	4	1								
Kinnaur	Sarahan WL	20																			
	Kullu	20								2	1	2	1								
Kullu	Kullu WL	20																			
Lahaul & Spiti	Spiti(W/L)	20																			
	Karsog	20										1	1	1	1						
Mandi	Mandi	20																			
	Kotgarh	20																			
	Rampur	21										1	1								
Shimla	Theog	20																			
Total of Territorial		341								14	1	11	1	1	1	1					
Kangra	Bainath	3																			
Kullu	Kullu	11																			
Mandi	Mandi	3																			
Kangra	Palampur	1																			
Kullu	Parvati	10	1	1	3	1		4	1	8	1	3	3								
Kinnaur	Kinnaur	21						21	2	16	1										
Shimla	Theog	1																			
Solan	Nagarh	5																			
Shimla	Kotgarh	2																			
Solan	Baddi	2																			
Total of Graziers/ Grassland		59	1	1	3	1		25	1	24	1	3	3								
Grand Total		400	1	1	3	1		39	1	35	1	4	2								

Source: Livelihood Survey, JICA Study Team (2017)

15.8 Place of Sale

District	Division	No of Respondents Interviewed	Patis		Dhoop		Guchhi		Chilgoza/ Pine Nuts		Kala Jeera		Jangli Lehsun		Talis Patra		Total						
			Within Village	Outside Village	Within Village	Outside Village	Within Village	Outside Village	Within Village	Outside Village	Within Village	Outside Village	Within Village	Outside Village	Within Village	Outside Village	Within Village	Outside Village	Total	Within Village	Outside Village	Total	
Bilaspur	Bilaspur	60																0	0	0	-	-	0.0
	Bharmour	20																0	0	0	-	-	0.0
Chamba	Chamba WL	20					1											1	0	1	100.0	0.0	100.0
	Pangi	20											1					3	0	3	100.0	0.0	100.0
Kinnaur	Sarahan WL	40	2				1											0	0	0	-	-	0.0
	Kullu	20																1	0	1	100.0	0.0	100.0
Kullu	Kullu WL	20	1															0	0	0	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20																0	0	0	-	-	0.0
	Karsog	20	1															1	0	1	100.0	0.0	100.0
Mandi	Mandi	20																0	0	0	-	-	0.0
	Kotgarh	20																0	0	0	-	-	0.0
	Rampur	21																0	0	0	-	-	0.0
Shimla	Theog	20																0	0	0	-	-	0.0
Total of Territorial		341	4	0	0	0	2	0	0	0	0	0	1	0	0	0	7	0	7	100.0	0.0	100.0	
Kangra	Bajinath	3																0	0	0	-	-	0.0
Kullu	Kullu	11																0	0	0	-	-	0.0
Mandi	Mandi	3																0	0	0	-	-	0.0
Kangra	Palampur	1																0	0	0	-	-	0.0
Kullu	Parvati	10	1	1												2	1	3	2	5	60.0	40.0	100.0
Kinnaur	Kinnaur	21			1		1		2	1	1	1					5	2	7	71.4	28.6	100.0	
Shimla	Theog	1																0	0	0	-	-	0.0
Solan	Nalagarh	5																0	0	0	-	-	0.0
Shimla	Kotgarh	2																0	0	0	-	-	0.0
Solan	Baddi	2																0	0	0	-	-	0.0
Total of Graziers/ Grassland		59	1	1	1	0	1	0	2	1	1	1	0	0	2	1	8	4	12	66.7	33.3	100.0	
Grand Total		400	5	1	1	0	3	0	2	1	1	1	1	0	2	1	15	4	19	78.9	21.1	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

15.9 Problems in NTFP Harvesting

District	Division	No of Respondents Interviewed	Availability of NTFP in the Forest is Reducing	JFM				Non JFM				Total				% to Total											
				Time consuming	Too far to find the NTFP	Permit/Restriction (Legal restriction)	Volume harvested is too little.	Availability of NTFP in the Forest is Reducing	Time consuming	Too far to find the NTFP	Permit/Restriction (Legal restriction)	Volume harvested is too little.	Availability of NTFP in the Forest is Reducing	Time consuming	Too far to find the NTFP	Permit/Restriction (Legal restriction)	Volume harvested is too little.	Total	Availability of NTFP in the Forest is Reducing	Time consuming	Too far to find the NTFP	Permit/Restriction (Legal restriction)	Volume harvested is too little.	Total			
Bilaspur	Bilaspur	60																0	0	0	0	0	-	-	-	-	0.0
	Bharmour	20	1	1	1	1	1							1	1	1	1	5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0
	Chamba WL	20												0	0	0	0	0	-	-	-	-	-	-	-	-	0.0
Chamba	Pangi	20	1	1	1		1							1	1	1	0	1	4	25.0	25.0	25.0	0.0	25.0	25.0	25.0	100.0
	Kinnaur	40	1	1			1	2	2	2	2	2	3	3	2	2	3	13	23.1	23.1	15.4	15.4	23.1	23.1	23.1	100.0	
Kinnaur	Sarahan WL	20						2	2	2	1	1	2	2	2	1	8	25.0	25.0	25.0	12.5	12.5	25.0	25.0	25.0	100.0	
	Kullu	20												0	0	0	0	0	-	-	-	-	-	-	-	0.0	
Kullu	Kullu WL	20						1	1	1	1	1	1	1	1	1	5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20												0	0	0	0	0	-	-	-	-	-	-	-	0.0	
	Karsog	20	2	1	2		1	1	1	1	1	3	2	3	1	0	9	33.3	22.2	33.3	11.1	0.0	100.0	100.0	100.0	100.0	
Mandi	Mandi	20					1	1	1	1		1	1	1	0	0	3	33.3	33.3	33.3	0.0	0.0	100.0	100.0	100.0	100.0	
	Kotgarh	20												0	0	0	0	0	-	-	-	-	-	-	-	0.0	
	Rampur	21	1	1	1			2	2	3	2	1	3	3	4	2	13	23.1	23.1	30.8	15.4	7.7	100.0	100.0	100.0	100.0	
Shimla	Theog	20						2	2	3	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	0.0	
Total of Territorial		341	6	5	5	1	3	9	10	7	5	15	14	15	8	60	25.0	23.3	25.0	13.3	13.3	13.3	13.3	13.3	13.3	100.0	
Kangra	Bajinath	3					1	1	1	1		1	1	1	0	4	25.0	25.0	25.0	25.0	0.0	0.0	100.0	100.0	100.0	100.0	
Kullu	Kullu	11					2	1	2	1		2	1	2	1	0	6	33.3	16.7	33.3	16.7	0.0	100.0	100.0	100.0	100.0	
Mandi	Mandi	3												0	0	0	0	-	-	-	-	-	-	-	-	0.0	
Kangra	Palampur	1												0	0	0	0	-	-	-	-	-	-	-	-	0.0	
Kullu	Parvati	10					7	6	7	3	3	7	6	7	3	3	26	26.9	23.1	26.9	11.5	11.5	26.9	26.9	26.9	100.0	
Kinnaur	Kinnaur	21					13	13	13	12	13	13	13	13	13	64	20.3	20.3	20.3	18.8	20.3	20.3	20.3	20.3	20.3	100.0	
Shimla	Theog	1												0	0	0	0	-	-	-	-	-	-	-	-	0.0	
Solan	Nalagarh	5					3	3	3	3	3	3	3	3	3	15	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	
Shimla	Kotgarh	2												0	0	0	0	-	-	-	-	-	-	-	-	0.0	
Solan	Baddi	2												0	0	0	0	-	-	-	-	-	-	-	-	0.0	
Total of Graziers/ Grassland		59	0	0	0	0	0	26	24	26	20	19	26	24	26	19	115	22.6	20.9	22.6	17.4	16.5	16.5	16.5	16.5	100.0	
Grand Total		400	6	5	5	1	3	35	33	36	27	24	41	38	41	28	175	23.4	21.7	23.4	16.0	15.4	15.4	15.4	100.0		

Source: Livelihood Survey, JICA Study Team (2017)

15.12 Access to NTFP Market Information

District	Division	No of Respondents Interviewed	JFM					Non JFM					Total					% to Total								
			By Going to the market	SMS	Approaching Institutions/ Agency/ Department	Phone Calls	Internet	By Going to the market	SMS	Approaching Institutions/ Agency/ Department	Phone Calls	Internet	By Going to the market	SMS	Approaching Institutions/ Agency/ Department	Phone Calls	Internet	Total	By Going to the market	SMS	Approaching Institutions/ Agency/ Department	Phone Calls	Internet	Total		
Bilaspur	Bilaspur	60	8	1				5	1			1			13	2	0	1	0	16	81.3	12.5	0.0	6.3	0.0	100.0
	Bharmour	20	2		1									2	0	1	0	0	3	66.7	0.0	33.3	0.0	0.0	100.0	
	Chamba WL	20					2							2	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Chamba	Pangi	20	3			1								3	0	0	1	0	4	75.0	0.0	0.0	25.0	0.0	100.0	
	Kinnaur	40	6	1		2	1	9	3		2			15	4	0	4	1	24	62.5	16.7	0.0	16.7	4.2	100.0	
	Sarahan WL	20						6	2					6	2	0	4	0	12	50.0	16.7	0.0	33.3	0.0	100.0	
	Kullu	20	3	1	1			3	2		1			6	3	1	1	0	11	54.5	27.3	9.1	9.1	0.0	100.0	
	Kullu WL	20						2						2	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20						5	2		3			5	2	0	3	0	10	50.0	20.0	0.0	30.0	0.0	100.0	
	Karsog	20	2			3		3		1	1			5	0	1	4	0	10	50.0	0.0	10.0	40.0	0.0	100.0	
Mandi	Mandi	20	4			5		5						9	0	0	5	0	14	64.3	0.0	0.0	35.7	0.0	100.0	
	Kotgarh	20	2					4			3			6	0	0	3	0	9	66.7	0.0	0.0	33.3	0.0	100.0	
	Rampur	21	3	1		1		8	1					11	2	0	1	0	14	78.6	14.3	0.0	7.1	0.0	100.0	
Shimla	Theog	20	3	1				2	1		1			5	2	0	1	0	8	62.5	25.0	0.0	12.5	0.0	100.0	
Total of Territorial		341	36	5	2	12	1	54	12	1	16	0	90	17	3	28	1	139	64.7	12.2	2.2	20.1	0.7	100.0		
Kangra	Bajjnath	3						1			1			0	0	0	1	0	1	0.0	0.0	0.0	100.0	0.0	100.0	
	Kullu	11						4			3			4	0	0	3	0	7	57.1	0.0	0.0	42.9	0.0	100.0	
	Mandi	3												0	0	0	0	0	-	-	-	-	-	0.0	0.0	
	Palampur	1												0	0	0	0	0	-	-	-	-	-	-	0.0	
	Parvati	10						2	1	2	4			2	1	2	4	0	9	22.2	11.1	22.2	44.4	0.0	100.0	
	Kinnaur	21						6	3		6			6	3	0	6	0	15	40.0	20.0	0.0	40.0	0.0	100.0	
	Shimla	1												0	0	0	0	0	-	-	-	-	-	-	0.0	
	Nalagarh	5												0	0	0	0	0	-	-	-	-	-	-	0.0	
	Kotgarh	2												0	0	0	0	0	-	-	-	-	-	-	0.0	
	Baddi	2												0	0	0	0	0	-	-	-	-	-	-	0.0	
Total of Graziers/ Grassland		59	0	0	0	0	0	12	4	2	14	0	12	4	2	14	0	32	37.5	12.5	6.3	43.8	0.0	100.0		
Grand Total		400	36	5	2	12	1	66	16	3	30	0	102	21	5	42	1	171	59.6	12.3	2.9	24.6	0.6	100.0		

Source: Livelihood Survey, JICA Study Team (2017)

15.13 Who collects market information

District	Division	No of Respondents Interviewed	JFM		Non JFM		Total		% to Total			
			Male Adult	Female Adult	Male Adult	Female Adult	Male Adult	Female Adult	Male Adult	Female Adult	Total	
Bilaspur	Bilaspur	60	6		4	1	10	1	11	90.9	9.1	100.0
	Bharmour	20	2				2	0	2	100.0	0.0	100.0
	Chamba WL	20			2		2	0	2	100.0	0.0	100.0
Chamba	Pangi	20	2				2	0	2	100.0	0.0	100.0
	Kinnaur	40	4		7	3	11	3	14	78.6	21.4	100.0
	Sarahan WL	20			7	2	7	2	9	77.8	22.2	100.0
	Kullu	20	1		1	1	2	1	3	66.7	33.3	100.0
	Kullu WL	20			3	1	3	1	4	75.0	25.0	100.0
Lahaul & Spiti	Spiti(W/L)	20			3	3	3	3	6	50.0	50.0	100.0
	Karsog	20	3		3		6	0	6	100.0	0.0	100.0
Mandi	Mandi	20	3		1	1	4	1	5	80.0	20.0	100.0
	Kotgarh	20			5		5	0	5	100.0	0.0	100.0
	Rampur	21	2		7		9	0	9	100.0	0.0	100.0
Shimla	Theog	20	4			1	4	1	5	80.0	20.0	100.0
Total of Territorial		341	27	0	43	13	70	13	83	84.3	15.7	100.0
Kangra	Bajjnath	3			1		1	0	1	100.0	0.0	100.0
	Kullu	11			4		4	0	4	100.0	0.0	100.0
	Mandi	3					0	0	-	-	0.0	
	Palampur	1					0	0	-	-	0.0	
	Parvati	10			7		7	0	7	100.0	0.0	100.0
	Kinnaur	21			12		12	0	12	100.0	0.0	100.0
	Shimla	1					0	0	0	-	-	0.0
	Nalagarh	5					0	0	0	-	-	0.0
	Kotgarh	2					0	0	0	-	-	0.0
	Baddi	2					0	0	0	-	-	0.0
Total of Graziers/ Grassland		59	0	0	24	0	24	0	24	100.0	0.0	100.0
Grand Total		400	27	0	67	13	94	13	107	87.9	12.1	100.0

Source: Livelihood Survey, JICA Study Team (2017)

16.5 Savings, Loan and Other Bank Transactions

District	Division	No of Respondents Interviewed	JFM											
			Male						Female					
			No of Persons Saving	Average Number of Times Saving in a month	Average Amount of Monthly Deposit	Average Amount of Total Savings	No of Persons Used Bank for Other Transactions/Remittance	No of Persons Who used Bnak for Insurance/Pension	No of Persons Saving	Average Number of Times Saving in a month	Average Amount of Monthly Deposit	Average Amount of Total Savings	No of Persons Used Bank for Other Transactions/Remittance	No of Persons Who used Bnak for Insurance/Pension
Bilaspur	Bilaspur	60	51	1	2,659	19,039	13	3	21	1	916	9,414	1	2
	Bharmour	20	16	1	1,944	23,325			6	1	1,983	23,800		
Chamba	Chamba WL	20												
	Pang	20	8	1	1,367	10,288			7	3	200	2,843		
Kinnaur	Kinnaur	40	22	2	3,292	27,814			16	1	857	8,756		
	Sarahan WL	20												
Kullu	Kullu	20	10	1	1,500	34,500			5	1	650	17,120		
	Kullu WL	20												
Lahaul & Spiti	Spti(W/L)	20												
Mandi	Karsog	20	12	1	2,050	10,625	1		10	0	1,000	6,500		
	Mandi	20	14	1	2,154	25,850	2		6	1	500	6,000		1
	Kotgarh	20	7	1	580	5,871	4	2	5	1	160	2,640		
Shimla	Rampur	21	9	1	900	14,044			11	1	1,382	14,539		1
	Theog	20	19	1	2,692	23,132	6	3	18	1	1,110	8,789	5	3
Total of Territorial		341	168	1	2,288	20,584	26	8	105	1	976	9,699	6	7
Kangra	Bajmath	3												
Kullu	Kullu	11												
Mandi	Mandi	3												
Kangra	Palampur	1												
Kullu	Parvati	10												
Kinnaur	Kinnaur	21												
Shimla	Theog	1												
Solan	Nalagarh	5												
Shimla	Kotgarh	2												
Solan	Baddi	2												
Total of Graziers/ Grassland		59												
Grand Total		400	168	1	2,288	20,584	26	8	105	1	976	9,699	6	7

Source: Livelihood Survey, JICA Study Team (2017)

16.6 Savings, Loan and Other Bank Transactions

District	Division	No of Respondents Interviewed	Non JFM												Total					
			Male						Female						No of Persons Saving	Average Number of Times Saving in a month	Average Amount of Monthly Deposit	Average Amount of Total Savings in INR	No of Persons Used Bank for Other Transactions/Remittance	No of Persons Who used Bnak for Insurance/Pension
			No of Persons Saving	Average Number of Times Saving in a month	Average Amount of Monthly Deposit	Average Amount of Total Savings	No of Persons Used Bank for Other Transactions/Remittance	No of Persons Who used Bnak for Insurance/Pension	No of Persons Saving	Average Number of Times Saving in a month	Average Amount of Monthly Deposit	Average Amount of Total Savings	No of Persons Used Bank for Other Transactions/Remittance	No of Persons Who used Bnak for Insurance/Pension						
Bilaspur	Bilaspur	60	29	1	1,565	24,090	1		10	1	800	9,350			111	1	1,943	17,665	16	5
	Bharmour	20	11	1	2,575	29,382			9	2	967	10,067			42	1	1,928	22,138		
Chamba	Chamba WL	20	23	2	2,400	31,948			8	3	550	17,550			31	2	2,030	28,232		
	Pang	20	8	1	2,389	29,250			6	1	1,500	15,667			29	2	1,750	14,834		
Kinnaur	Kinnaur	40	33	1	2,367	22,491			26	1	3,708	12,016			97	1	2,737	18,810		
	Sarahan WL	20	33	2	4,011	37,315	2	2	17	1	888	9,053			50	2	3,178	27,706	2	2
Kullu	Kullu	20	10	2	1,950	23,540			9	1	906	11,333			34	1	1,321	22,588		
	Kullu WL	20	19	2	2,563	55,316			13	1	825	7,646			32	1	1,818	35,950		
Lahaul & Spiti	Spti(W/L)	20	20	1	2,600	21,092			18	1	700	8,989			38	1	1,840	15,359		
Mandi	Karsog	20	14	1	700	6,471		2	9	1	400	2,867		2	45	1	932	6,864	1	4
	Mandi	20	10	1	1,190	12,530	2	1	13	1	1,190	4,930	1	2	43	1	1,388	13,013	5	4
	Kotgarh	20	17	2	1,595	16,188		4	11	1	1,956	6,420			40	1	1,295	9,968	4	6
Shimla	Rampur	21	9	1	2,275	25,500			7	1	1,175	16,500			36	1	1,337	17,537		1
	Theog	20	7	1	1,667	31,571			8	1	775	8,475			52	1	1,683	17,048	11	6
Total of Territorial		341	243	1	2,260	27,198	5	9	164	1	1,327	9,801	2	4	680	1	1,872	18,666	39	28
Kangra	Bajmath	3	4	1	750	37,500			6	1	750	23,667			10	1	750	29,200		
Kullu	Kullu	11	22	2	11,142	255,636	3	2	22	1	2,909	32,841	3		44	1	7,204	144,239	6	2
Mandi	Mandi	3	4	0	8,000	33,000	1				2,500	2,500			5		6,167	26,900	1	
Kangra	Palampur	1	1			50,000						25,000			2			37,500		
Kullu	Parvati	10	15	1	3,650	39,787	1	1	11	1	1,217	24,636			26	1	2,607	33,377	1	1
Kinnaur	Kinnaur	21	47	2	7,416	18,123	6	3	32	2	2,098	10,422	3	3	79	2	5,151	15,004	9	6
Shimla	Theog	1													0					
Solan	Nalagarh	5	4	1		14,250									4	1		14,250		
Shimla	Kotgarh	2													0					
Solan	Baddi	2	2	1	4,000	20,000			1			5,000			3	1	4,000	15,000		
Total of Graziers/ Grassland		59	99	2	7,398	75,774	11	6	74	1	2,129	20,291	6	3	173	2	5,110	52,041	17	9
Grand Total		400	342	2	3,506	41,259	29	18	238	1	1,552	13,062	8	7	853	1	2,422	25,435	56	37

Source: Livelihood Survey, JICA Study Team (2017)

16.7 Reasons for Not Using Bank Accounts So Frequently (1)

District	Division	No of Respondents Interviewed	Male							Female							Other Family Members								
			No necessity of transaction	Bank is far	Service by bank is limited	No information about services	Low income	Migration	No Women go to bank	Total	No necessity of transaction	Bank is far	Service by bank is limited	No information about services	Low income	Migration	No Women go to bank	Total	No necessity of transaction	Bank is far	Service by bank is limited	No information about services	Low income	Migration	No Women go to bank
Bilaspur	Bilaspur	60	23	3			6		32	31	2			4		1	38	3				2			5
Bilaspur	Bharmour	20	6	2					8	7	1						8								0
Chamba	Chamba WL	20	8	1					9	6	1						7	2						2	
Chamba	Pangi	20	11				1		12	10				2			12							0	
Kinnaur	Kinnaur	40	14				1		15	7	1			1			9							0	
Kinnaur	Sarahan WL	20	8	1					9	8	2						10	2	1					3	
Kullu	Kullu	20	6				1		7	7	1						9	3				1		4	
Kullu	Kullu WL	20	5				1		6	4	1			1			5	1				1		2	
Lahaul & Spiti	Spiti (W/L)	20	7						7	4				1			5	1						1	
Mandi	Karsog	20	9				3		12	10				2			12	1						1	
Mandi	Mandi	20	3	1			1		5	6	2			1			9	1						1	
Mandi	Kotgarh	20	7				1		8	7							7	1						1	
Shimla	Bharmour	21	6	2					8	5	1						6							0	
Shimla	Theog	20	10	3			3		16	9	3			2			14	1				1		2	
Total of Territorial		341	123	13	0	0	18	0	154	121	14	0	0	15	0	1	151	16	1	0	0	5	0	0	22
Kangra	Bajjnath	3															0								0
Kullu	Kullu	11	3	2						1	1	1					3								0
Mandi	Mandi	3	1	1				7		1							1								0
Kangra	Palampur	1	1	1													4								0
Kullu	Parvati	10	2	4	1		1			1	3						4				1			1	
Kinnaur	Kinnaur	21	3							2							2	1							1
Shimla	Theog	1															0								0
Solan	Nalagarh	5				2											0				1				1
Shimla	Kotgarh	2															0								0
Solan	Baddi	2															0								0
Total of Graziers/Grasland		59	10	8	1	2	1	7	0	5	4	1	0	0	0	0	10	1	0	0	1	1	0	0	3
Grand Total		400	133	21	1	2	19	7	0	154	126	18	1	0	15	0	161	17	1	0	1	6	0	0	25

Source: Livelihood Survey, JICA Study Team (2017)

16.8 Reasons for Not Using Bank Accounts So Frequently (2)

District	Division	No of Respondents Interviewed	Total							% to Total								
			No necessity of transaction	Bank is far	Service by bank is limited	No information about services	Low income	Migration	No Women go to bank	Total	No necessity of transaction	Bank is far	Service by bank is limited	No information about services	Low income	Migration	No Women go to bank	Total
Bilaspur	Bilaspur	60	57	5	0	0	12	0	1	75	76.0	6.7	0.0	0.0	16.0	0.0	1.3	100.0
Bilaspur	Bharmour	20	13	3	0	0	0	0	0	16	81.3	18.8	0.0	0.0	0.0	0.0	0.0	100.0
Chamba	Chamba WL	20	16	2	0	0	0	0	0	18	88.9	11.1	0.0	0.0	0.0	0.0	0.0	100.0
Chamba	Pangi	20	21	0	0	0	3	0	0	24	87.5	0.0	0.0	0.0	12.5	0.0	0.0	100.0
Kinnaur	Kinnaur	40	21	1	0	0	2	0	0	24	87.5	4.2	0.0	0.0	8.3	0.0	0.0	100.0
Kinnaur	Sarahan WL	20	18	4	0	0	0	0	0	22	81.8	18.2	0.0	0.0	0.0	0.0	0.0	100.0
Kullu	Kullu	20	16	1	0	0	3	0	0	20	80.0	5.0	0.0	0.0	15.0	0.0	0.0	100.0
Kullu	Kullu WL	20	10	0	0	0	3	0	0	13	76.9	0.0	0.0	0.0	23.1	0.0	0.0	100.0
Lahaul & Spiti	Spiti (W/L)	20	12	0	0	0	1	0	0	13	92.3	0.0	0.0	0.0	7.7	0.0	0.0	100.0
Mandi	Karsog	20	20	0	0	0	5	0	0	25	80.0	0.0	0.0	0.0	20.0	0.0	0.0	100.0
Mandi	Mandi	20	10	3	0	0	2	0	0	15	66.7	20.0	0.0	0.0	13.3	0.0	0.0	100.0
Mandi	Kotgarh	20	15	0	0	0	1	0	0	16	93.8	0.0	0.0	0.0	6.3	0.0	0.0	100.0
Shimla	Bharmour	21	11	3	0	0	0	0	0	14	78.6	21.4	0.0	0.0	0.0	0.0	0.0	100.0
Shimla	Theog	20	20	6	0	0	6	0	0	32	62.5	18.8	0.0	0.0	18.8	0.0	0.0	100.0
Total of Territorial		341	260	28	0	0	38	0	1	327	79.5	8.6	0.0	0.0	11.6	0.0	0.3	100.0
Kangra	Bajjnath	3	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	0.0
Kullu	Kullu	11	4	3	1	0	0	0	0	8	50.0	37.5	12.5	0.0	0.0	0.0	0.0	100.0
Mandi	Mandi	3	2	1	0	0	0	7	0	10	20.0	10.0	0.0	0.0	70.0	0.0	0.0	100.0
Kangra	Palampur	1	1	1	0	0	0	0	0	2	50.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0
Kullu	Parvati	10	3	7	1	0	2	0	0	13	25.1	53.8	7.7	0.0	15.4	0.0	0.0	100.0
Kinnaur	Kinnaur	21	6	0	0	0	0	0	0	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Shimla	Theog	1	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	0.0
Solan	Nalagarh	5	0	0	0	3	0	0	0	3	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	2	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	0.0
Solan	Baddi	2	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	0.0
Total of Graziers/Grasland		59	16	12	2	3	2	7	0	42	38.1	28.6	4.8	7.1	4.8	16.7	0.0	100.0
Grand Total		400	276	40	2	3	40	7	1	369	74.8	10.8	0.5	0.8	10.8	1.9	0.3	100.0

Source: Livelihood Survey, JICA Study Team (2017)

16.9 Average Distance to Bank and No of Persons took Loan

District	Division	No of Respondents Interviewed	Average Distance in Km			No of Persons Took Loan between April		
			JFM	Non JFM	Total	JFM	Non JFM	Total
Bilaspur	Bilaspur	60	5.7	6.9	6.1		2	2
	Bharmour	20	13.2	2.3	8.6			0
Chamba	Chamba WL	20		19.4	19.4			0
	Pangi	20	17.9	25.6	22.4			0
Kinnaur	Kinnaur	40	1.5	12.4	6.2			0
	Sarahan WL	20		35.3	35.3			0
Kullu	Kullu	20	6.6	3.1	5.5		4	4
	Kullu WL	20		0.6	0.6		3	3
Lahaul & Spiti	Spiti(W/L)	20		11.8	11.8			0
Mandi	Karsog	20	1.3	3.2	2.2	5	2	7
	Mandi	20	8.3	14.3	11.7	3	1	4
	Kotgarh	20	7.8	0.7	4.7	3	1	4
Shimla	Rampur	21	15.5	26.3	20.6			0
	Theog	20	10.8	18.3	13.9			0
Total of Territorial		341	8.1	13.5	11.3	11	13	24
Kangra	Bajinath	3		2.5	2.5			0
Kullu	Kullu	11		6.5	6.5		1	1
Mandi	Mandi	3		5.5	5.5			0
Kangra	Palampur	1		1.0	1.0			0
Kullu	Parvati	10		27.5	27.5			0
Kinnaur	Kinnaur	21		2.7	2.7		7	7
Shimla	Theog	1		4.0	4.0			0
Solan	Nalagarh	5						0
Shimla	Kotgarh	2		5.0	5.0			0
Solan	Baddi	2		4.0	4.0			0
Total of Graziers/ Grassland		59		9.2	9.2	0	8	8
Grand Total		400	8.1	12.8	11.1	11	21	32

Source: Livelihood Survey, JICA Study Team (2017)

16.10 No of Persons Took Loan from Various Financial Institutions and Average Amount

District	Division	No of Respondents Interviewed	JFM						Non JFM						Total						
			Government Bank		Private bank		Cooperatives		Government Bank		Private bank		Cooperatives		Government Bank		Private bank		Cooperatives		
			Counts	Average Amount	Counts	Average Amount	Counts	Average Amount	Counts	Average Amount	Counts	Average Amount	Counts	Average Amount	Counts	Average Amount	Counts	Average Amount	Counts	Average Amount	
Bilaspur	Bilaspur	60								2	170,000					2	-				
	Bharmour	20	1	25,000											1	25,000					
Chamba	Chamba WL	20											1	45,000					1	45,000	
	Pangi	20	1	25,000			2	100,000							1	25,000			2	100,000	
Kinnaur	Kinnaur	40	2	300,000					6	303,333			2	195,000	8	302,500			4	222,500	
	Sarahan WL	20							2	175,000	1	750,000			2	175,000	1	750,000			
Kullu	Kullu	20							4	360,000					4	360,000					
	Kullu WL	20							2	200,000	1	200,000			2	200,000	1	200,000			
Lahaul & Spiti	Spiti(W/L)	20							2	400,000					2	400,000					
Mandi	Karsog	20	4	83,750			1	75,000	2	225,000					6	130,833			1	75,000	
	Mandi	20	3	60,000					1	400,000					4	145,000					
	Kotgarh	20	1	10,000	1	100,000			3	423,333			2	55,000	4	320,000	1	100,000	2	55,000	
Shimla	Rampur	21							1	450,000					1	450,000					
	Theog	20	1	200,000					1	85,000					2	142,500					
Total of Territorial		341	13	105,769	1	100,000	5	168,750	26	300,192	2	475,000	5	109,000	39	235,385	3	350,000	10	135,556	
Kangra	Bajinath	3																			
Kullu	Kullu	11							5	200,000					5	200,000					
Mandi	Mandi	3																			
Kangra	Palampur	1																			
Kullu	Parvati	10																			
Kinnaur	Kinnaur	21							6	175,000			2	525,000	6	175,000			2	525,000	
Shimla	Theog	1																			
Solan	Nalagarh	5																			
Shimla	Kotgarh	2																			
Solan	Baddi	2																			
Total of Graziers/ Grassland		59							11	186,364			2	525,000	11	186,364			2	525,000	
Grand Total		400	13	105,769	1	100,000	5	168,750	37	266,351	2	475,000	7	227,857	50	224,600	3	350,000	12	206,364	

Source: Livelihood Survey, JICA Study Team (2017)

16.11 Who Took Loan
All Responses Indicated Male Head of Household/ Male Spouse took loan

District	Division	No of Respondents Interviewed	Government	Private	Cooperative	Total	No of Households Mortgages Land
Bilaspur	Bilaspur	60				0	
	Bharmour	20				0	
Chamba	Chamba WL	20				0	
	Pangi	20				0	
Kinnaur	Kinnaur	40	6			6	3
	Sarahan WL	20	2			2	2
Kullu	Kullu	20	3			3	1
	Kullu WL	20	1			1	1
Lahaul & Spiti	Spiti(W/L)	20	1			1	1
Mandi	Karsog	20	5			5	5
	Mandi	20	2			2	1
Shimla	Kotgarh	20	1			1	
	Rampur	21				0	
	Theog	20	1			1	1
Total of Territorial		341	22	0	0	22	15
Kangra	Bajnath	3				0	
Kullu	Kullu	11	5			5	5
Mandi	Mandi	3				0	
Kangra	Palampur	1				0	
Kullu	Parvati	10				0	
Kinnaur	Kinnaur	21	6			6	6
Shimla	Theog	1				0	
Solan	Nalagarh	5				0	
Shimla	Kotgarh	2				0	
Solan	Baddi	2				0	
Total of Graziers/ Grassland		59	11	0	0	11	11
Grand Total		400	33	0	0	33	26

Source: Livelihood Survey, JICA Study Team (2017)

16.12 Purposes of Taking Loan
Government Bank

District	Division	No of Respondents Interviewed	Purposes of Loan					% to Total						
			Agriculture	Consumption (School fees, medical fees, ceremonies, festivals and etc.)	Starting Business	Loan Repayment	Bying household items	Total	Agriculture	Consumption (School fees, medical fees, ceremonies, festivals and etc.)	Starting Business	Loan Repayment	Bying household items	Total
Bilaspur	Bilaspur	60						0	-	-	-	-	-	0.0
	Bharmour	20	1					1	100.0	0.0	0.0	0.0	0.0	100.0
Chamba	Chamba WL	20						0	-	-	-	-	-	0.0
	Pangi	20	1					1	100.0	0.0	0.0	0.0	0.0	100.0
Kinnaur	Kinnaur	40	5				1	6	83.3	0.0	0.0	0.0	0.0	16.7
	Sarahan WL	20	1	1				2	50.0	50.0	0.0	0.0	0.0	100.0
Kullu	Kullu	20	2	1			1	4	50.0	25.0	0.0	25.0	0.0	100.0
	Kullu WL	20	2					2	100.0	0.0	0.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20	1					1	100.0	0.0	0.0	0.0	0.0	100.0
Mandi	Karsog	20	3	1	1			5	60.0	20.0	20.0	0.0	0.0	100.0
	Mandi	20	3					3	100.0	0.0	0.0	0.0	0.0	100.0
	Kotgarh	20	2		2			4	50.0	0.0	50.0	0.0	0.0	100.0
Shimla	Rampur	21			1			1	0.0	100.0	0.0	0.0	0.0	100.0
	Theog	20	1				1	2	50.0	0.0	0.0	0.0	50.0	100.0
Total of Territorial		341	22	3	4	1	2	32	68.8	9.4	12.5	3.1	6.3	100.0
Kangra	Bajnath	3						0	-	-	-	-	-	0.0
Kullu	Kullu	11	5					5	100.0	0.0	0.0	0.0	0.0	100.0
Mandi	Mandi	3						0	-	-	-	-	-	0.0
Kangra	Palampur	1						0	-	-	-	-	-	0.0
Kullu	Parvati	10						0	-	-	-	-	-	0.0
Kinnaur	Kinnaur	21	1	1	1			3	33.3	33.3	33.3	0.0	0.0	100.0
Shimla	Theog	1						0	-	-	-	-	-	0.0
Solan	Nalagarh	5						0	-	-	-	-	-	0.0
Shimla	Kotgarh	2						0	-	-	-	-	-	0.0
Solan	Baddi	2						0	-	-	-	-	-	0.0
Total of Graziers/ Grassland		59	6	1	1	0	0	8	75.0	12.5	12.5	0.0	0.0	100.0
Grand Total		400	28	4	5	1	2	40	70.0	10.0	12.5	2.5	5.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

16.12 Purposes of Taking Loan
Private Bank

District	Division	No of Respondents Interviewed	Purposes of Loan					% to Total						
			Agriculture	Consumption (School fees, medical fees, ceremonies, festivals and etc.)	Starting Business	Loan Repayment	Bying household items	Total	Agriculture	Consumption (School fees, medical fees, ceremonies, festivals and etc.)	Starting Business	Loan Repayment	Bying household items	Total
Bilaspur	Bilaspur	60						0	-	-	-	-	-	0.0
	Bharmour	20						0	-	-	-	-	-	0.0
Chamba	Chamba WL	20						0	-	-	-	-	-	0.0
	Pangi	20						0	-	-	-	-	-	0.0
	Kinnaur	40						0	-	-	-	-	-	0.0
	Sarahan WL	20			1			1	0.0	0.0	100.0	0.0	0.0	100.0
Kullu	Kullu	20						0	-	-	-	-	-	0.0
	Kullu WL	20						0	-	-	-	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20						0	-	-	-	-	-	0.0
Mandi	Karsog	20						0	-	-	-	-	-	0.0
	Mandi	20						0	-	-	-	-	-	0.0
	Kotgarh	20						0	-	-	-	-	-	0.0
Shimla	Rampur	21						0	-	-	-	-	-	0.0
	Theog	20						0	-	-	-	-	-	0.0
Total of Territorial		341	0	0	1	0	0	1	0.0	0.0	100.0	0.0	0.0	100.0
Kangra	Bajnath	3						0	-	-	-	-	-	0.0
Kullu	Kullu	11						0	-	-	-	-	-	0.0
Mandi	Mandi	3						0	-	-	-	-	-	0.0
Kangra	Palampur	1						0	-	-	-	-	-	0.0
Kullu	Parvati	10						0	-	-	-	-	-	0.0
Kinnaur	Kinnaur	21						0	-	-	-	-	-	0.0
Shimla	Theog	1						0	-	-	-	-	-	0.0
Solan	Nalagarh	5						0	-	-	-	-	-	0.0
Shimla	Kotgarh	2						0	-	-	-	-	-	0.0
Solan	Baddi	2						0	-	-	-	-	-	0.0
Total of Graziers/ Grassland		59	0	0	0	0	0	0	-	-	-	-	-	0.0
Grand Total		400	0	0	1	0	0	1	0.0	0.0	100.0	0.0	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

16.12 Purposes of Taking Loan
Cooperative Bank

District	Division	No of Respondents Interviewed	Purposes of Loan					% to Total						
			Agriculture	Consumption (School fees, medical fees, ceremonies, festivals and etc.)	Starting Business	Loan Repayment	Bying household items	Total	Agriculture	Consumption (School fees, medical fees, ceremonies, festivals and etc.)	Starting Business	Loan Repayment	Bying household items	Total
Bilaspur	Bilaspur	60						0	-	-	-	-	-	0.0
	Bharmour	20						0	-	-	-	-	-	0.0
Chamba	Chamba WL	20			1			1	0.0	0.0	100.0	0.0	0.0	100.0
	Pangi	20	2					2	100.0	0.0	0.0	0.0	0.0	100.0
Kinnaur	Kinnaur	40	3				1	4	75.0	0.0	0.0	0.0	25.0	100.0
	Sarahan WL	20						0	-	-	-	-	-	0.0
	Kullu	20						0	-	-	-	-	-	0.0
Kullu	Kullu WL	20						0	-	-	-	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20						0	-	-	-	-	-	0.0
Mandi	Karsog	20	1					1	100.0	0.0	0.0	0.0	0.0	100.0
	Mandi	20						0	-	-	-	-	-	0.0
	Kotgarh	20	2					2	100.0	0.0	0.0	0.0	0.0	100.0
Shimla	Rampur	21						0	-	-	-	-	-	0.0
	Theog	20						0	-	-	-	-	-	0.0
Total of Territorial		341	8	0	1	0	1	10	80.0	0.0	10.0	0.0	10.0	100.0
Kangra	Bajnath	3						0	-	-	-	-	-	0.0
Kullu	Kullu	11						0	-	-	-	-	-	0.0
Mandi	Mandi	3						0	-	-	-	-	-	0.0
Kangra	Palampur	1						0	-	-	-	-	-	0.0
Kullu	Parvati	10						0	-	-	-	-	-	0.0
Kinnaur	Kinnaur	21	1				1	2	50.0	0.0	0.0	0.0	50.0	100.0
Shimla	Theog	1						0	-	-	-	-	-	0.0
Solan	Nalagarh	5						0	-	-	-	-	-	0.0
Shimla	Kotgarh	2						0	-	-	-	-	-	0.0
Solan	Baddi	2						0	-	-	-	-	-	0.0
Total of Graziers/ Grassland		59	1	0	0	0	1	2	50.0	0.0	0.0	0.0	50.0	100.0
Grand Total		400	9	0	1	0	2	12	75.0	0.0	8.3	0.0	16.7	100.0

Source: Livelihood Survey, JICA Study Team (2017)

16.13 Preferred Banking Services

District	Division	No of Respondents Interviewed	Male					Female					Total					% to Total				
			Insurance	Pension	Transaction/Remittance	Payment	Total	Insurance	Pension	Transaction/Remittance	Payment	Total	Insurance	Pension	Transaction/Remittance	Payment	Total	Insurance	Pension	Transaction/Remittance	Payment	Total
Bilaspur	Bilaspur	60	14	13	5		32	14	13	5		32	28	26	10	0	64	43.8	40.6	15.6	0.0	100.0
Chamba	Bharmour	20	9	7			16	8	6			14	17	13	0	0	30	56.7	43.3	0.0	0.0	100.0
	Chamba WL	20	7	5			12	5	4			9	12	9	0	0	21	57.1	42.9	0.0	0.0	100.0
Kinnaur	Pangi	20	5	4			9	5	5			10	10	9	0	0	19	52.6	47.4	0.0	0.0	100.0
	Kinnaur	40	4	9			13	4	5			9	8	14	0	0	22	36.4	63.6	0.0	0.0	100.0
Kullu	Sarahan WL	20	5	3	1		9	5	2	1		8	10	5	2	0	17	58.8	29.4	11.8	0.0	100.0
	Kullu	20	9	6			15	9	4			13	18	10	0	0	28	64.3	35.7	0.0	0.0	100.0
Lahaul & Spiti	Kullu WL	20	3	3			6	3	3			6	6	6	0	0	12	50.0	50.0	0.0	0.0	100.0
	Spiti(W/L)	20	3	5			8	3	5			8	6	10	0	0	16	37.5	62.5	0.0	0.0	100.0
Mandi	Karsog	20	6	6	1		13	6	4	1		11	12	10	2	0	24	50.0	41.7	8.3	0.0	100.0
	Mandi	20	3	2	1		6	2	1			4	5	3	2	0	10	50.0	30.0	20.0	0.0	100.0
Shimla	Kotgarh	20	7	4		1	12	7	5		1	13	14	9	0	2	25	56.0	36.0	0.0	8.0	100.0
	Rampur	21	3	1			4	3	1			4	6	2	0	0	8	75.0	25.0	0.0	0.0	100.0
	Theog	20	5	6	1	1	13	5	3	1		9	10	9	2	1	22	45.5	40.9	9.1	4.5	100.0
Total of Territorial		341	83	74	9	2	168	79	61	9	1	150	162	135	18	3	318	50.9	42.5	5.7	0.9	100.0
Kangra	Bajnath	3					0					0	0	0	0	0	-	-	-	-	0.0	
Kullu	Kullu	11	3		1	2	6	2		1	2	5	5	0	2	4	11	45.5	0.0	18.2	36.4	100.0
Mandi	Mandi	3	1				1	1				1	2	0	0	2	100.0	0.0	0.0	0.0	100.0	
Kangra	Palampur	1	1		1		2					0	1	0	1	0	2	50.0	0.0	50.0	0.0	100.0
Kullu	Parvati	10		4			4	1				2	1	5	0	6	16.7	0.0	83.3	0.0	100.0	
Kinnaur	Kinnaur	21	3	2	1	1	7	3				4	6	2	2	1	11	54.5	18.2	18.2	9.1	100.0
Shimla	Theog	1					0					0	0	0	0	0	0	-	-	-	-	0.0
Solan	Nalagarh	5	2	2			4	2	2			4	4	4	0	8	50.0	50.0	0.0	0.0	100.0	
Shimla	Kotgarh	2					0					0	0	0	0	0	-	-	-	-	0.0	
Solan	Baddi	2					0					0	0	0	0	0	-	-	-	-	0.0	
Total of Graziers/ Grassland		59	10	4	7	3	24	9	2	3	2	16	19	6	10	5	40	47.5	15.0	25.0	12.5	100.0
Grand Total		400	93	78	16	5	192	88	63	12	3	166	181	141	28	8	358	50.6	39.4	7.8	2.2	100.0

Source: Livelihood Survey, JICA Study Team (2017)

16.14 Who Received Training on Micro Finance?

District	Division	No of Respondents Interviewed	Male Head of Household	Female Spouse	Other Male Members of the Family	Other Female Members of the Family	Total
Bilaspur	Bilaspur	60					0
Chamba	Bharmour	20					0
	Chamba WL	20					0
Kinnaur	Pangi	20					0
	Kinnaur	40					0
Kullu	Sarahan WL	20					0
	Kullu	20					0
Lahaul & Spiti	Kullu WL	20					0
	Spiti(W/L)	20					1
Mandi	Karsog	20					3
	Mandi	20					4
Shimla	Mandi	20					1
	Kotgarh	20					0
	Rampur	21					0
Solan	Theog	20					0
Total of Territorial		341	0	9	0	0	9
Kangra	Bajnath	3					0
Kullu	Kullu	11		2			2
Mandi	Mandi	3		2			2
Kangra	Palampur	1		1			1
Kullu	Parvati	10		3			3
Kinnaur	Kinnaur	21					0
Shimla	Theog	1					0
Solan	Nalagarh	5					0
Shimla	Kotgarh	2					0
Solan	Baddi	2					0
Total of Graziers/ Grassland		59	0	8	0	0	8
Grand Total		400	0	17	0	0	17

Source: Livelihood Survey, JICA Study Team (2017)

Only one response on Topic: 1 SHG formation and management, savings and credit

17. Food Shortage

17.1 No of Households Experienced Food Shortage (April 2016-March 2017)

District	Division	No of Respondents Interviewed	JFM									Non JFM									Total			% to Total		
			MHH			FHH			Total			MHH			FHH			Total			Yes	No	Total	Yes	No	Total
			Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total									
Bilaspur	Bilaspur	60	4	25	1	5	5	30	35	1	15	2	3	15	18	8	45	53	15.1	84.9	100.0					
Chamba	Bharmour	20		11			0	11	11		8		1	0	9	0	20	20	0.0	100.0	100.0					
	Chamba WL	20					0	0	0		15		1	0	16	0	16	16	0.0	100.0	100.0					
	Pangi	20		6		4	0	10	10		7		3	0	10	0	20	20	0.0	100.0	100.0					
Kinnaur	Kinnaur	40	3	11		1	3	12	15	3	16		3	3	19	22	6	31	37	16.2	83.8	100.0				
	Sarahan WL	20					0	0	0	1	15	1	2	15	17	2	15	17	11.8	88.2	100.0					
Kullu	Kullu	20		10			0	10	10		7		3	0	10	0	20	20	0.0	100.0	100.0					
	Kullu WL	20					0	0	0		17		3	0	20	0	20	20	0.0	100.0	100.0					
Lahaul & Spiti	Spiti(W/L)	20					0	0	0		16		2	0	18	0	18	18	0.0	100.0	100.0					
Mandi	Karsog	20	2	8			2	8	10	1	9		1	9	10	3	17	20	15.0	85.0	100.0					
	Mandi	20	1	9			1	9	10		7		1	0	8	1	17	18	5.6	94.4	100.0					
Shimla	Kotgarh	20	2	6		2	2	8	10		7		1	0	8	2	16	18	11.1	88.9	100.0					
	Rampur	21	1	6		3	1	9	10	1	7		3	1	10	2	19	21	9.5	90.5	100.0					
	Theog	20	1	6		4	1	10	11		5	1	3	1	8	2	18	20	10.0	90.0	100.0					
Total of Territorial		341	14	98	1	19	15	117	132	7	151	4	24	11	175	186	26	292	318	8.2	91.8	100.0				
Kangra	Bajnath	3									1		0	1	1	0	1	1	0.0	100.0	100.0					
Kullu	Kullu	11								1	6		1	6	7	1	6	7	14.3	85.7	100.0					
Mandi	Mandi	3								1	2		1	2	3	1	2	3	33.3	66.7	100.0					
Kangra	Palampur	1									1		0	1	1	0	1	1	0.0	100.0	100.0					
Kullu	Parvati	10								4	6		4	6	10	4	6	10	40.0	60.0	100.0					
Kinnaur	Kinnaur	21								5	14		1	5	15	5	15	20	25.0	75.0	100.0					
Shimla	Theog	1								1			1	0	1	1	0	1	100.0	0.0	100.0					
Solan	Nalagarh	5								2	3		2	3	5	2	3	5	40.0	60.0	100.0					
Shimla	Kotgarh	2								2			2	0	2	0	2	0	2	100.0	0.0	100.0				
Solan	Baddi	2								0	2		0	2	2	0	2	2	0.0	100.0	100.0					
Total of Graziers/ Grassla		59								16	35	0	1	16	36	52	16	36	52	30.8	69.2	100.0				
Grand Total		400		98	1	19	15	117	132	23	186	4	25	27	211	238	42	328	370	11.4	88.6	100.0				

Source: Livelihood Survey, JICA Study Team (2017)

17.2 Average Number of Days Experienced Food Shortage

District	Division	No of Respondents Interviewed	JFM			Non JFM			Total Average
			MHH	FHH	Total	MHH	FHH	Total	
Bilaspur	Bilaspur	60	150		150	90	90	90	130
Chamba	Bharmour	20							
	Chamba WL	20							
	Pangi	20							
Kinnaur	Kinnaur	40	75		75	75		75	75
	Sarahan WL	20							
Kullu	Kullu	20							
	Kullu WL	20							
Lahaul & Spiti	Spiti(W/L)	20							
Mandi	Karsog	20	90		90	60		60	80
	Mandi	20	90		90	90		90	90
Shimla	Kotgarh	20	255		255				255
	Rampur	21						30	30
	Theog	20						30	30
Total of Territorial		341	139		139	78	60	73	113
Kangra	Bajnath	3							
Kullu	Kullu	11							
Mandi	Mandi	3				120		120	120
Kangra	Palampur	1							
Kullu	Parvati	10				71		71	71
Kinnaur	Kinnaur	21				150		150	150
Shimla	Theog	1				180		180	180
Solan	Nalagarh	5				180		180	180
Shimla	Kotgarh	2				75		75	75
Solan	Baddi	2							
Total of Graziers/ Grassla		59				117		117	117
Grand Total		400	139		139	106	60	101	115

Source: Livelihood Survey, JICA Study Team (2017)

17.3 Coping Strategy in the Case of Food Shortage (1)

District	Division	No of Respondents Interviewed	JFM								Non JFM							
			MHH				FHH				MHH				FHH			
			Purchase	Borrow from Neighbour/Relative	Eat less	Other Unspecified Means	Purchase	Borrow from Neighbour/Relative	Eat less	Other Unspecified Means	Purchase	Borrow from Neighbour/Relative	East Less	Other Unspecified Means	Purchase	Borrow from Neighbour/Relative	East Less	Other Unspecified Means
Bilaspur	Bilaspur	60	4	1									1					
Chamba	Bharmour	20																
	Chamba WL	20																
Kinnaur	Panga	20																
	Kinnaur	40																
Kullu	Sarahan WL	20											2				1	
	Kullu	20											4				1	
Lahaul & Spiti	Kullu WL	20																
	Spiti(W/L)	20															1	
Mandi	Karsog	20	1	1									1					
	Mandi	20	1														2	
	Kotgarh	20	2															
Shimla	Rampur	21		1									1				1	
	Theog	20															1	
Total of Territorial		341	8	3	0	0	0	0	1	0	0	2	7	0	4	2	3	0
Kangra	Bajinath	3																
Kullu	Kullu	11											1					
Mandi	Mandi	3											1					
Kangra	Palampur	1																
Kullu	Parvati	10											3			1		
Kinnaur	Kinnaur	21											2	1				
Shimla	Theog	1															1	
Solan	Nalagarh	5															1	
Shimla	Kotgarh	2															2	
Solan	Baddi	2																
Total of Graziers/ Grassla		59	0	0	0	0	0	0	0	0	0	7	5	1	0	0	0	0
Grand Total		400	8	3	0	0	0	0	1	0	0	9	12	1	4	2	3	0

Source: Livelihood Survey, JICA Study Team (2017)

17.3 Coping Strategy in the Case of Food Shortage (2)

District	Division	No of Respondents Interviewed	Total					% to Total				
			Purchase	Borrow from Neighbour/Relative	Eat less	Other Unspecified Means	Total	Purchase	Borrow from Neighbour/Relative	Eat less	Other Unspecified Means	Total
			Bilaspur	Bilaspur	60	7	2	0	0	9	77.8	22.2
Chamba	Bharmour	20	0	0	0	0	0	-	-	-	-	0.0
	Chamba WL	20	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Panga	20	0	0	0	0	0	-	-	-	-	0.0
	Kinnaur	40	0	2	0	1	3	0.0	66.7	0.0	33.3	100.0
Kullu	Sarahan WL	20	0	5	0	0	5	0.0	100.0	0.0	0.0	100.0
	Kullu	20	0	0	0	0	0	-	-	-	-	0.0
Lahaul & Spiti	Kullu WL	20	0	0	0	0	0	-	-	-	-	0.0
	Spiti(W/L)	20	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Mandi	Karsog	20	2	1	0	0	3	66.7	33.3	0.0	0.0	100.0
	Mandi	20	1	0	0	2	3	33.3	0.0	0.0	66.7	100.0
	Kotgarh	20	2	0	0	0	2	100.0	0.0	0.0	0.0	100.0
Shimla	Rampur	21	0	2	0	1	3	0.0	66.7	0.0	33.3	100.0
	Theog	20	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Total of Territorial		341	12	14	0	4	30	40.0	46.7	0.0	15.3	100.0
Kangra	Bajinath	3	0	0	0	0	0	-	-	-	-	0.0
Kullu	Kullu	11	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0
Mandi	Mandi	3	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0
Kangra	Palampur	1	0	0	0	0	0	-	-	-	-	0.0
Kullu	Parvati	10	3	0	1	0	4	75.0	0.0	25.0	0.0	100.0
Kinnaur	Kinnaur	21	2	1	0	0	3	66.7	33.3	0.0	0.0	100.0
Shimla	Theog	1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Solan	Nalagarh	5	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Shimla	Kotgarh	2	0	2	0	0	2	0.0	100.0	0.0	0.0	100.0
Solan	Baddi	2	0	0	0	0	0	-	-	-	-	0.0
Total of Graziers/ Grassla		59	7	5	1	0	13	53.8	38.5	7.7	0.0	100.0
Grand Total		400	19	19	1	4	43	44.2	44.2	2.3	9.3	100.0

Source: Livelihood Survey, JICA Study Team (2017)

18. Health

18.1 No of Households Experienced Food Shortage (April 2016-March 2017)

District	Division	No of Respondent s Interviewed	JFM					Total	Non JFM					Total	Total					% to Total						
			Headache	Diarrhoea	Fever	Cough	Other unspecified Illness		Headache	Diarrhoea	Fever	Cough	Other unspecified Illness		Headache	Diarrhoea	Fever	Cough	Other unspecified Illness	Headache	Diarrhoea	Fever	Cough	Other unspecified Illness	Total	
Bilaspur	Bilaspur	60	7	2	7	6	17	39	6	5	11	8	4	34	13	7	18	14	21	73	17.8	9.6	24.7	19.2	28.8	100.0
	Bharmour	20	8	5	9	8	33	8	4	8	6	3	29	16	9	17	14	6	62	25.8	14.5	27.4	22.6	9.7	100.0	
Chamba	Chamba WL	20					0	15	11	18	17	3	64	15	11	18	17	3	64	23.4	17.2	28.1	26.6	4.7	100.0	
	Pangi	20	6	2	6	5	21	9	5	9	5	1	29	15	7	15	10	3	50	30.0	14.0	30.0	20.0	6.0	100.0	
Kinnaur	Kinnaur	40	10	7	16	9	46	17	10	20	16	5	68	27	17	36	25	9	114	25.7	14.9	31.6	21.9	7.9	100.0	
	Sarahan WL	20					0	11	3	13	8	4	39	11	3	13	8	4	39	28.2	7.7	33.3	20.5	10.3	100.0	
Kullu	Kullu	20	5	6	9	6	29	6	5	9	6	1	27	11	11	18	12	4	56	19.6	19.6	32.1	21.4	7.1	100.0	
	Kullu WL	20					0	15	11	17	13	2	58	15	11	17	13	2	58	25.9	19.0	29.3	22.4	3.4	100.0	
Lahaul & Spiti	Spiti(W/L)	20					0	13	7	16	11	1	48	13	7	16	11	1	48	27.1	14.6	33.3	22.9	2.1	100.0	
	Karsog	20	2		4	4	3	13	2	2	5	2	2	13	4	2	9	6	5	26	15.4	7.7	34.6	23.1	19.2	100.0
Mandi	Mandi	20		1	3	5	3	12	4	3	7	7	2	23	4	4	10	12	5	35	11.4	11.4	28.6	34.3	14.3	100.0
	Kotgarh	20	4	3	4	5	4	20	4	4	5	5	5	23	8	7	9	10	9	43	18.6	16.3	20.9	23.3	20.9	100.0
Shimla	Rampur	21	6	4	7	4	1	22	10	7	11	7	35	16	11	18	11	1	57	28.1	19.3	31.6	19.3	1.8	100.0	
	Theog	20	3	1	3	2	5	14	3	2	5	2	4	16	6	3	8	4	9	30	20.0	10.0	26.7	13.3	30.0	100.0
Total of Territorial		341	51	31	68	54	45	249	123	79	154	113	37	506	174	110	222	167	82	755	23.0	14.6	28.4	22.1	10.9	100.0
Kangra	Baijnath	3						0	3	2	3	2	8	3	0	3	2	0	8	37.5	0.0	37.5	25.0	0.0	100.0	
Kullu	Kullu	11						0	10	1	8	7	2	28	10	1	8	2	28	35.7	3.6	28.6	25.0	7.1	100.0	
Mandi	Mandi	3						0	1	1	1	1	3	1	0	1	1	0	3	33.3	0.0	33.3	33.3	0.0	100.0	
Kangra	Palampur	1						0	1	1	1	1	3	1	0	1	1	0	3	33.3	0.0	33.3	33.3	0.0	100.0	
Kullu	Parvati	10						0	9	3	9	5	2	25	9	0	9	5	2	25	36.0	0.0	36.0	20.0	8.0	100.0
Kinnaur	Kinnaur	21						0	9	1	8	6	4	28	9	1	8	6	4	28	32.1	3.6	28.6	21.4	14.3	100.0
Shimla	Theog	1						0	1	1	1	1	5	1	1	1	1	1	5	20.0	20.0	20.0	20.0	20.0	100.0	
Solan	Nalagrh	5						0	2	1	4	3	1	11	2	1	4	3	1	11	18.2	9.1	36.4	27.3	9.1	100.0
Shimla	Kotgarh	2						0	2	2	2	2	1	9	2	2	2	1	9	22.2	22.2	22.2	22.2	11.1	100.0	
Solan	Baddi	2						0	0	0	0	0	2	0	0	0	0	0	2	0.0	0.0	0.0	0.0	100.0	100.0	
Total of Graziers Grassland		59	0	0	0	0	0	0	38	6	37	28	13	122	38	6	37	28	13	122	31.1	4.9	30.3	23.0	10.7	100.0
Grand Total		400	51	31	68	54	45	249	161	85	191	141	50	628	212	116	259	195	95	877	24.2	13.2	29.5	22.2	10.8	100.0

Source: Livelihood Survey, JICA Study Team (2017)

18.2 Distance to the nearest Health centre/ medical facilities in Km

District	Division	No of Respondent s Interviewed	JFM			Non JFM			Total		
			Max	Min	Ave	Max	Min	Ave	Max	Min	Ave
Bilaspur	Bilaspur	60	25	0.5	4.7	10.0	0.1	4.0	25.0	0.1	4.5
	Bharmour	20	3.0	1.0	1.6	3.0	1.0	2.1	3.0	1.0	1.8
Chamba	Chamba WL	20				1.5	0.1	0.4	1.5	0.1	0.4
	Pangi	20	3.0	0.3	1.3	6.0	2.0	3.2	6.0	0.3	2.2
Kinnaur	Kinnaur	40	10.0	0.1	1.4	10.0	0.1	3.0	10.0	0.1	2.2
	Sarahan WL	20				20.0	0.1	1.4	20.0	0.1	1.4
Kullu	Kullu	20	8.0	5.0	5.7	6.0	5.0	5.3	8.0	5.0	5.5
	Kullu WL	20				5.0	0.1	1.6	5.0	0.1	1.6
Lahaul & Spiti	Spiti(W/L)	20				1.0	0.1	0.3	1.0	0.1	0.3
	Karsog	20	3.0	1.0	1.8	4.0	1.5	3.1	4.0	1.0	2.4
Mandi	Mandi	20	10.0	5.0	7.8	12.0	1.0	6.8	12.0	1.0	7.3
	Kotgarh	20	20.0	5.0	8.6	10.0	3.0	5.9	20.0	3.0	7.4
Shimla	Rampur	21	1.0	0.4	0.8	25.0	5.0	9.2	25.0	0.4	5.2
	Theog	20	36.0	0.2	6.0	1.0	0.0	0.5	36.0	0.0	3.5
Total of Territorial		341	36.0	0.0	4.0	25.0	0.0	2.9	36.0	0.0	3.4
Kangra	Baijnath	3				6.0	1.0	2.7	6.0	1.0	2.7
Kullu	Kullu	11				1.0	5.2	20.0	1.0	5.2	5.2
Mandi	Mandi	3				9.0	2.0	4.3	9.0	2.0	4.3
Kangra	Palampur	1				1.0	1.0	1.0	1.0	1.0	1.0
Kullu	Parvati	10				35.0	0.1	13.4	35.0	0.1	13.4
Kinnaur	Kinnaur	21				1.5	0.1	0.8	1.5	0.1	0.8
Shimla	Theog	1				5.0	5.0	5.0	5.0	5.0	5.0
Solan	Nalagrh	5				6.0	2.0	2.8	6.0	2.0	2.8
Shimla	Kotgarh	2				2.0	1.0	1.5	2.0	1.0	1.5
Solan	Baddi	2				6.0	6.0	6.0	6.0	6.0	6.0
Total of Graziers Grassland		59	0	0	0	35.0	0.1	4.5	35.0	0.1	4.5
Grand Total		400	36.0	0.0	4.0	25.0	0.0	3.3	36.0	0.0	3.5

Source: Livelihood Survey, JICA Study Team (2017)

18.3 Means to reach the Health Centre/ Medical Facilities

District	Division	No of Respondents Interviewed	JFM					Non JFM					Total					% to Total				
			On foot	Motorcycle	Family Vehicle	Public transportation or other means of transportain	Total	On foot	Motorcycle	Family Vehicle	Public transportation or other means of transportain	Total	On foot	Motorcycle	Family Vehicle	Public transportation or other means of transportain	Total	On foot	Motorcycle	Family Vehicle	Public transportation or other means of transportain	Total
			Bilaspur	Bilaspur	60	16		4	19	39	14			4	20	30	2	4	23	59	50.8	3.4
	Bharmour	20	11			11	9				9	20	0	0	0	20	100.0	0.0	0.0	0.0	100.0	
	Chamba WL	20				0	20				20	20	0	0	0	20	100.0	0.0	0.0	0.0	100.0	
	Pang	20	10			1	11	10			10	20	0	0	1	21	95.2	0.0	0.0	4.8	100.0	
	Kinnaur	40	16			16	17		2	2	21	33	16	2	2	37	89.2	0.0	5.4	5.4	100.0	
	Sarahan WL	20				0	17				17	17	0	0	0	17	100.0	0.0	0.0	0.0	100.0	
	Kullu	20	10			10	4		1	5	10	14	10	1	5	20	70.0	0.0	5.0	25.0	100.0	
	Kullu WL	20				0	18		1	1	20	18	0	1	1	20	90.0	0.0	5.0	5.0	100.0	
	Lahaul & Spiti	20				0	20				20	20	0	0	0	20	100.0	0.0	0.0	0.0	100.0	
	Mandi	20	9			9	5		1	4	10	14	0	1	4	19	73.7	0.0	5.3	21.1	100.0	
	Mandi	20	6			4	10	10			10	16	0	0	4	20	80.0	0.0	0.0	20.0	100.0	
	Kotgarh	20	5			5	10	2	1	7	10	7	1	0	12	20	35.0	5.0	0.0	60.0	100.0	
	Shimla	21	10			10	11				11	21	0	0	0	21	100.0	0.0	0.0	0.0	100.0	
	Theog	20	7	1		3	11	9			9	16	1	0	3	20	80.0	5.0	0.0	15.0	100.0	
Total of Territorial		341	100	1	4	32	137	166	3	5	23	197	266	4	9	55	334	79.6	1.2	2.7	16.5	100.0
Kangra	Bainath	3				0	2			1	3	2	0	0	1	3	66.7	0.0	0.0	33.3	100.0	
Kullu	Kullu	11				0	7		1	3	11	7	0	1	3	11	63.6	0.0	9.1	27.3	100.0	
Mandi	Mandi	3				0	2			1	3	2	0	0	1	3	66.7	0.0	0.0	33.3	100.0	
Kangra	Palampur	1				0	1			1	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0		
Kullu	Parvati	10				0	6			4	10	6	0	0	4	10	60.0	0.0	0.0	40.0	100.0	
Kinnaur	Kinnaur	21				0	20			1	21	20	0	0	1	21	95.2	0.0	0.0	4.8	100.0	
Shimla	Theog	1				0	1				1	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0	
Solan	Nalagarh	5				0	5				5	5	0	0	0	5	100.0	0.0	0.0	0.0	100.0	
Shimla	Kotgarh	2				0	1			1	2	1	0	0	1	2	50.0	0.0	0.0	50.0	100.0	
Solan	Baddi	2				0	0			2	2	0	0	0	2	2	0.0	0.0	0.0	100.0	100.0	
Total of Graziers/ Grassland		59	0	0	0	0	0	45	0	1	13	59	45	0	1	13	59	76.3	0.0	1.7	22.0	100.0
Grand Total		400	100	1	4	32	137	211	3	6	36	256	311	4	10	68	393	79.1	1.0	2.5	17.3	100.0

Source: Livelihood Survey, JICA Study Team (2017)

18.4 Who will accompany the female family members to the Health Centre/ Medical Facilities

District	Division	No of Respondents Interviewed	JFM					Non JFM					Total					% to Total				
			Male Adult of the Family	Female Adult of the Family	Go by her self	Others - Unspecified	Total	Male Adult of the Family	Female Adult of the Family	Go by her self	Others - Unspecified	Total	Male Adult of the Family	Female Adult of the Family	Go by her self	Others - Unspecified	Total	Male Adult of the Family	Female Adult of the Family	Go by her self	Others - Unspecified	Total
			Bilaspur	Bilaspur	60	30				30	19				19	49	0	0	49	100.0	0.0	0.0
	Bharmour	20	10		1	11	9				9	19	0	1	0	20	95.0	0.0	5.0	0.0	100.0	
	Chamba WL	20				0	19				19	19	0	0	0	19	100.0	0.0	0.0	0.0	100.0	
	Pang	20	8			8	9				9	17	0	0	0	17	100.0	0.0	0.0	0.0	100.0	
	Kinnaur	40	17	1		18	21				21	38	1	0	39	97.4	2.6	0.0	0.0	100.0		
	Sarahan WL	20				0	15				15	15	0	0	0	15	100.0	0.0	0.0	0.0	100.0	
	Kullu	20	9			9	9				9	18	0	0	0	18	100.0	0.0	0.0	0.0	100.0	
	Kullu WL	20				0	19				19	19	0	0	0	19	100.0	0.0	0.0	0.0	100.0	
	Lahaul & Spiti	20				0	14				14	14	0	0	0	14	100.0	0.0	0.0	0.0	100.0	
	Mandi	20	9		1	10	9				9	18	0	1	0	19	94.7	0.0	5.3	0.0	100.0	
	Mandi	20	10			10	10				10	20	0	0	0	20	100.0	0.0	0.0	0.0	100.0	
	Kotgarh	20	8	1		9	10				10	18	1	0	0	19	94.7	5.3	0.0	0.0	100.0	
	Shimla	21	10			10	11				11	21	0	0	0	21	100.0	0.0	0.0	0.0	100.0	
	Theog	20	10	1		11	7	2			16	17	8	2	0	27	63.0	29.6	7.4	0.0	100.0	
Total of Territorial		341	121	3	2	0	126	181	7	2	0	190	302	10	4	0	316	95.6	3.2	1.3	0.0	100.0
Kangra	Bainath	3				0	2		1		3	2	1	0	0	3	66.7	33.3	0.0	0.0	100.0	
Kullu	Kullu	11				0	10		1		11	10	1	0	0	11	90.9	9.1	0.0	0.0	100.0	
Mandi	Mandi	3				0	2				2	2	0	0	0	2	100.0	0.0	0.0	0.0	100.0	
Kangra	Palampur	1				0	1				1	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0	
Kullu	Parvati	10				0	10				10	10	0	0	0	10	100.0	0.0	0.0	0.0	100.0	
Kinnaur	Kinnaur	21				0	15	1	5		21	15	5	0	21	71.4	4.8	23.8	0.0	100.0		
Shimla	Theog	1				0	1				1	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0	
Solan	Nalagarh	5				0	5				5	5	0	0	0	5	100.0	0.0	0.0	0.0	100.0	
Shimla	Kotgarh	2				0	2				2	2	0	0	0	2	100.0	0.0	0.0	0.0	100.0	
Solan	Baddi	2				0	1				1	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0	
Total of Graziers/ Grassland		59	0	0	0	0	0	49	3	5	0	57	49	3	5	57	86.0	5.3	8.8	0.0	100.0	
Grand Total		400	121	3	2	0	126	230	10	7	0	247	351	13	9	0	373	94.1	3.5	2.4	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

19. Sanitation
19.1 Availability of Bathing Space at Home

District	Division	No of Respondents Interviewed (a)	JFM			Non JFM			Total			% to Total		
			Have	Don't Have	Total	Have	Don't Have	Total	Have	Don't Have	Total	Have	Don't Have	Total
Bilaspur	Bilaspur	60	34	3	37	18	2	20	52	5	57	91.2	8.8	100.0
	Bharmour	20	6	5	11	6	3	9	12	8	20	60.0	40.0	100.0
Chamba	Chamba WL	20			0	16	4	20	16	4	20	80.0	20.0	100.0
	Panga	20	8	2	10	9	1	10	17	3	20	85.0	15.0	100.0
Kinnaur	Kinnaur	40	17	2	19	21		21	38	2	40	95.0	5.0	100.0
	Sarahan WL	20			0	20		20	20	0	20	100.0	0.0	100.0
Kullu	Kullu	20	7	2	9	10		10	17	2	19	89.5	10.5	100.0
	Kullu WL	20			0	17	3	20	17	3	20	85.0	15.0	100.0
Lahaul & Spiti	Spiti(W/L)	20			0	14	6	20	14	6	20	70.0	30.0	100.0
Mandi	Karsog	20	9	1	10	8	2	10	17	3	20	85.0	15.0	100.0
	Mandi	20	10		10	8	1	9	18	1	19	94.7	5.3	100.0
	Kotgarh	20	6	4	10	9	1	10	15	5	20	75.0	25.0	100.0
Shimla	Rampur	21	7	2	9	9	2	11	16	4	20	80.0	20.0	100.0
	Theog	20	11		11	9		9	20	0	20	100.0	0.0	100.0
Total of Territorial		341	115	21	136	174	25	199	289	46	335	86.3	13.7	100.0
Kangra	Bajinath	3			0	3		3	3	0	3	100.0	0.0	100.0
Kullu	Kullu	11			0	11		11	11	0	11	100.0	0.0	100.0
Mandi	Mandi	3			0	2	1	3	2	1	3	66.7	33.3	100.0
Kangra	Palampur	1			0	1		1	1	0	1	100.0	0.0	100.0
Kullu	Parvati	10			0	7	3	10	7	3	10	70.0	30.0	100.0
Kinnaur	Kinnaur	21			0	19	2	21	19	2	21	90.5	9.5	100.0
Shimla	Theog	1			0	1		1	0	1	1	0.0	100.0	100.0
Solan	Nagarh	5			0		5	5	5	0	5	0.0	100.0	100.0
Shimla	Kotgarh	2			0		2	2	0	2	2	0.0	100.0	100.0
Solan	Baddi	2			0	2		2	2	0	2	100.0	0.0	100.0
Total of Graziers/ Grassla		59	0	0	0	45	14	59	45	14	59	76.3	23.7	100.0
Grand Total		400	115	21	136	219	39	258	334	60	394	84.8	15.2	100.0

Source: Livelihood Survey, JICA Study Team (2017)

19.2 Do all members of your family use the bathing space at home?

District	Division	No of Respondents Interviewed (a)	JFM			Non JFM			Total			% to Total		
			Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Bilaspur	Bilaspur	60	36	1	37	18		18	54	1	55	98.2	1.8	100.0
	Bharmour	20	7	2	9	6	1	7	13	3	16	81.3	18.8	100.0
Chamba	Chamba WL	20			0	16	1	17	16	1	17	94.1	5.9	100.0
	Panga	20	8		8	9		9	17	0	17	100.0	0.0	100.0
Kinnaur	Kinnaur	40	16		16	21		21	37	0	37	100.0	0.0	100.0
	Sarahan WL	20			0	19		19	19	0	19	100.0	0.0	100.0
Kullu	Kullu	20	7	2	9	10		10	17	2	19	89.5	10.5	100.0
	Kullu WL	20			0	18	1	19	18	1	19	94.7	5.3	100.0
Lahaul & Spiti	Spiti(W/L)	20			0	14	3	17	14	3	17	82.4	17.6	100.0
Mandi	Karsog	20	10		10	8	1	9	18	1	19	94.7	5.3	100.0
	Mandi	20	10		10	9	1	10	19	1	20	95.0	5.0	100.0
	Kotgarh	20	6	2	8	9	1	10	15	3	18	83.3	16.7	100.0
Shimla	Rampur	21	9	1	10	10		10	19	1	20	95.0	5.0	100.0
	Theog	20	11		11	9		9	20	0	20	100.0	0.0	100.0
Total of Territorial		341	120	8	128	176	9	185	296	17	313	94.6	5.4	100.0
Kangra	Bajinath	3			0	3		3	3	0	3	100.0	0.0	100.0
Kullu	Kullu	11			0	11		11	11	0	11	100.0	0.0	100.0
Mandi	Mandi	3			0	2		2	2	0	2	100.0	0.0	100.0
Kangra	Palampur	1			0	1		1	1	0	1	100.0	0.0	100.0
Kullu	Parvati	10			0	8	2	10	8	2	10	80.0	20.0	100.0
Kinnaur	Kinnaur	21			0	20	1	21	20	1	21	95.2	4.8	100.0
Shimla	Theog	1			0	1		1	0	1	1	0.0	100.0	100.0
Solan	Nagarh	5			0		2	2	0	2	2	0.0	100.0	100.0
Shimla	Kotgarh	2			0		1	1	0	1	1	0.0	100.0	100.0
Solan	Baddi	2			0	2		2	2	0	2	100.0	0.0	100.0
Total of Graziers/ Grassla		59	0	0	0	47	7	54	47	7	54	87.0	13.0	100.0
Grand Total		400	120	8	128	223	16	239	343	24	367	93.5	6.5	100.0

Source: Livelihood Survey, JICA Study Team (2017)

19.3 Where do your family members go to bathe?

District	Division	No of Respondents Interviewed (a)	JFM					Non JFM					Total					% to Total					
			River	Common Well	Spring	Unspecified	Total	River	Common Well	Spring	Unspecified	Total	River	Common Well	Spring	Unspecified	Total	River	Common Well	Spring	Unspecified	Total	
Bilaspur	Bilaspur	60				6	6				4	4				10	10	0.0	0.0	0.0	0.0	100.0	100.0
	Bharmour	20					0			7	7				0	7	0.0	0.0	0.0	0.0	100.0	100.0	
Chamba	Chamba WL	20				1	1			5	5				6	6	0.0	0.0	0.0	0.0	100.0	100.0	
	Pangi	20				2	2			1	1				3	3	0.0	0.0	0.0	0.0	100.0	100.0	
Kinnaur	Kinnaur	40				4	4			6	6				10	10	0.0	0.0	0.0	0.0	100.0	100.0	
	Sarahan WL	20					0			1	1				1	1	0.0	0.0	0.0	0.0	100.0	100.0	
Kullu	Kullu	20				4	4			2	2				6	6	0.0	0.0	0.0	0.0	100.0	100.0	
	Kullu WL	20					0			4	4				4	4	0.0	0.0	0.0	0.0	100.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20					0			6	6				6	6	0.0	0.0	0.0	0.0	100.0	100.0	
Mandi	Karsog	20					0			1	1				1	1	0.0	0.0	0.0	0.0	100.0	100.0	
	Mandi	20					0				0				0	0	-	-	-	-	-	0.0	
Shimla	Kotgarh	20				4	4			1	1				5	5	0.0	0.0	0.0	0.0	100.0	100.0	
	Rampur	21				2	2			4	4				6	6	0.0	0.0	0.0	0.0	100.0	100.0	
	Theog	20				1	1			1	1				2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Total of Territorial		341	0	0	0	24	24	0	0	0	43	43	0	0	67	67	0.0	0.0	0.0	0.0	100.0	100.0	
Kangra	Bajinath	3				0	0			0	0				0	0	-	-	-	-	-	0.0	
Kullu	Kullu	11				0	0			0	0				0	0	-	-	-	-	-	0.0	
Mandi	Mandi	3				0	0			0	0				0	0	-	-	-	-	-	0.0	
Kangra	Palampur	1				0	0			0	0				0	0	-	-	-	-	-	0.0	
Kullu	Parvati	10				0	0		2	1	3			2	1	3	0.0	0.0	66.7	33.3	-	100.0	
Kinnaur	Kinnaur	21				0	0			2	2				2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Shimla	Theog	1				0	0			0	0				0	0	-	-	-	-	-	0.0	
Solan	Nalagarh	5				0	0		1	4	5			1	0	4	5	20.0	0.0	0.0	80.0	100.0	
Shimla	Kotgarh	2				0	0		1	2	1			1	2	50.0	0.0	0.0	0.0	50.0	100.0		
Solan	Baddi	2				0	0			0	0				0	0	-	-	-	-	-	0.0	
Total of Graziers/ Grassla		59	0	0	0	0	0	2	0	2	8	12	2	0	8	12	16.7	0.0	16.7	66.7	100.0	100.0	
Grand Total		400	0	0	0	24	24	2	0	2	51	55	2	0	75	79	2.5	0.0	2.5	94.9	100.0	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

19.4 Availability of Toilet at Home

District	Division	No of Respondents Interviewed (a)	JFM			Non JFM			Total			% to Total		
			Have	Don't Have	Total	Have	Don't Have	Total	Have	Don't Have	Total	Have	Don't Have	Total
Bilaspur	Bilaspur	60	33	2	35	18	2	20	51	4	55	92.7	7.3	100.0
	Bharmour	20	11		11	9		9	20	0	20	100.0	0.0	100.0
Chamba	Chamba WL	20			0	20		20	20	0	20	100.0	0.0	100.0
	Pangi	20	10		10	10		10	20	0	20	100.0	0.0	100.0
Kinnaur	Kinnaur	40	18	1	19	20	1	21	38	2	40	95.0	5.0	100.0
	Sarahan WL	20			0	20	6	26	20	6	26	76.9	23.1	100.0
Kullu	Kullu	20	7	3	10	10		10	17	3	20	85.0	15.0	100.0
	Kullu WL	20			0	19	1	20	19	1	20	95.0	5.0	100.0
Lahaul & Spiti	Spiti(W/L)	20			0	20		20	20	0	20	100.0	0.0	100.0
Mandi	Karsog	20	10		10	8	2	10	18	2	20	90.0	10.0	100.0
	Mandi	20	10		10	9	1	10	19	1	20	95.0	5.0	100.0
Shimla	Kotgarh	20	7	3	10	9	1	10	16	4	20	80.0	20.0	100.0
	Rampur	21	10		10	10	1	11	20	1	21	95.2	4.8	100.0
	Theog	20	11		11	9		9	20	0	20	100.0	0.0	100.0
Total of Territorial		341	127	9	136	191	15	206	318	24	342	93.0	7.0	100.0
Kangra	Bajinath	3			0	3		3	3	0	3	100.0	0.0	100.0
Kullu	Kullu	11			0	11		11	11	0	11	100.0	0.0	100.0
Mandi	Mandi	3			0	3		3	3	0	3	100.0	0.0	100.0
Kangra	Palampur	1			0	1		1	1	0	1	100.0	0.0	100.0
Kullu	Parvati	10			0	7	3	10	7	3	10	70.0	30.0	100.0
Kinnaur	Kinnaur	21			0	16	4	20	16	4	20	80.0	20.0	100.0
Shimla	Theog	1			0	1		1	0	1	1	0.0	100.0	100.0
Solan	Nalagarh	5			0	5	5	5	5	5	5	0.0	100.0	100.0
Shimla	Kotgarh	2			0	2	2	2	0	2	2	0.0	100.0	100.0
Solan	Baddi	2			0	2	2	2	0	2	2	0.0	100.0	100.0
Total of Graziers/ Grassla		59	0	0	0	41	17	58	41	17	58	70.7	29.3	100.0
Grand Total		400	127	9	136	232	32	264	359	41	400	89.8	10.3	100.0

Source: Livelihood Survey, JICA Study Team (2017)

19.5 Do all members of your family use toilet at home?

District	Division	No of Respondents Interviewed (a)	JFM			Non JFM			Total			% to Total		
			Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Bilaspur	Bilaspur	60	33		33	18	1	19	51	1	52	98.1	1.9	100.0
	Bharmour	20	10		10	9		9	19	0	19	100.0	0.0	100.0
Chamba	Chamba WL	20			0	20		20	20	0	20	100.0	0.0	100.0
	Pangi	20	8		8	10		10	18	0	18	100.0	0.0	100.0
Kinnaur	Kinnaur	40	15		15	18	1	19	33	1	34	97.1	2.9	100.0
	Sarahan WL	20			0	20		20	20	0	20	100.0	0.0	100.0
Kullu	Kullu	20	6		6	9		9	15	0	15	100.0	0.0	100.0
	Kullu WL	20			0	19		19	19	0	19	100.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20			0	20		20	20	0	20	100.0	0.0	100.0
Mandi	Karsog	20	10		10	8	1	9	18	1	19	94.7	5.3	100.0
	Mandi	20	10		10	9	1	10	19	1	20	95.0	5.0	100.0
Shimla	Kotgarh	20	7	3	10	9	1	10	16	4	20	80.0	20.0	100.0
	Rampur	21	10		10	11		11	21	0	21	100.0	0.0	100.0
	Theog	20	11		11	9		9	20	0	20	100.0	0.0	100.0
Total of Territorial		341	120	3	123	189	5	194	309	8	317	97.5	2.5	100.0
Kangra	Bainath	3			0	3		3	3	0	3	100.0	0.0	100.0
Kullu	Kullu	11			0	10		10	10	0	10	100.0	0.0	100.0
Mandi	Mandi	3			0	3		3	3	0	3	100.0	0.0	100.0
Kangra	Palampur	1			0	1		1	1	0	1	100.0	0.0	100.0
Kullu	Parvati	10			0	7	3	10	7	3	10	70.0	30.0	100.0
Kinnaur	Kinnaur	21			0	17	4	21	17	4	21	81.0	19.0	100.0
Shimla	Theog	1			0	1		1	0	1	0.0	100.0	100.0	
Solan	Nalagarh	5			0		3	3	0	3	0.0	100.0	100.0	
Shimla	Kotgarh	2			0		2	2	0	2	0.0	100.0	100.0	
Solan	Baddi	2			0		2	2	0	2	0.0	100.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	41	15	56	41	15	56	73.2	26.8	100.0
Grand Total		400	120	3	123	230	20	250	350	23	373	93.8	6.2	100.0

Source: Livelihood Survey, JICA Study Team (2017)

19.6 Reasons for Not Using Toilet

District	Division	No of Respondents Interviewed	JFM				Non JFM				Total				Total %				
			Do not know how to use	Do not see the need	Under construction	Total	Do not know how to use	Do not see the need	Under construction	Total	Do not know how to use	Do not see the need	Under construction	Total	Do not know how to use	Do not see the need	Under construction	Total	
Bilaspur	Bilaspur	60			1	1			1	2	3	0	1	3	4	0.0	25.0	75.0	100.0
	Bharmour	20				0			0	0	0	0	0	0	0	-	-	-	0.0
Chamba	Chamba WL	20				0			0	0	0	0	0	0	-	-	-	0.0	
	Pangi	20				0			0	0	0	0	0	0	-	-	-	0.0	
Kinnaur	Kinnaur	40				0			1	1	0	0	1	1	0.0	0.0	100.0	100.0	
	Sarahan WL	20				0			0	0	0	0	0	0	-	-	-	0.0	
Kullu	Kullu	20				0			0	0	0	0	0	0	-	-	-	0.0	
	Kullu WL	20				0			1	1	0	0	1	1	0.0	0.0	100.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20				0			1	1	0	0	1	1	0.0	0.0	100.0	100.0	
Mandi	Karsog	20				0			2	2	0	0	2	2	0.0	0.0	100.0	100.0	
	Mandi	20				0			0	0	0	0	0	0	-	-	-	0.0	
Shimla	Kotgarh	20			3	3			0	0	0	0	3	3	0.0	0.0	100.0	100.0	
	Rampur	21				0			0	0	0	0	0	0	-	-	-	0.0	
	Theog	20				0			0	0	0	0	0	0	-	-	-	0.0	
Total of Territorial		341	0	0	4	4	0	1	7	8	0	1	11	12	0.0	8.3	91.7	100.0	
Kangra	Bainath	3				0			0	0	0	0	0	0	-	-	-	0.0	
Kullu	Kullu	11				0			0	0	0	0	0	0	-	-	-	0.0	
Mandi	Mandi	3				0			0	0	0	0	0	0	-	-	-	0.0	
Kangra	Palampur	1				0			0	0	0	0	0	0	-	-	-	0.0	
Kullu	Parvati	10				0	1		2	3	1	0	2	3	33.3	0.0	66.7	100.0	
Kinnaur	Kinnaur	21				0		1	2	3	0	1	2	3	0.0	33.3	66.7	100.0	
Shimla	Theog	1				0			1	1	0	0	1	1	0.0	0.0	100.0	100.0	
Solan	Nalagarh	5				0			4	4	0	0	4	4	0.0	0.0	100.0	100.0	
Shimla	Kotgarh	2				0			2	2	0	0	2	2	0.0	0.0	100.0	100.0	
Solan	Baddi	2				0			2	2	0	0	2	2	0.0	0.0	100.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	0	1	1	13	15	1	1	13	15	6.7	6.7	86.7	100.0	
Grand Total		400	0	0	4	4	1	2	20	23	1	2	24	27	27.0	7.4	88.9	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

19.7 Where do your family members for toilet?

District	Division	No of Respondents Interviewed (a)	JEM					Non-JEM					Total					% to Total									
			Forest	Riverside	Agriculture field	Community Toilet	Other place (Unspecified)	Total	Forest	Riverside	Agriculture field	Community Toilet	Other place (Unspecified)	Total	Forest	Riverside	Agriculture field	Community Toilet	Other place (Unspecified)	Total							
Bilaspur	Bilaspur	60	1				4	5	1				3	2	0		2	0	4	8	25.0	0.0	25.0	0.0		50.0	100.0
	Bharmour	20											1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0		100.0	100.0
Chamba	Chamba WL	20						0					4	4	0	0	0	0	4	4	0.0	0.0	0.0	0.0		100.0	100.0
	Pangi	20						0					0	0	0	0	0	0	0	0	-	-	-	-	-	-	0.0
Kinnaur	Kinnaur	40	1				3	4	1				6	7	2	0	0	0	9	11	18.2	0.0	0.0	0.0		81.8	100.0
	Sarahan WL	20						0					2	2	0	0	0	0	2	2	0.0	0.0	0.0	0.0		100.0	100.0
Kullu	Kullu	20	2		2		2	6					2	2	2	0	2	0	4	8	25.0	0.0	25.0	0.0		50.0	100.0
	Kullu WL	20						0			1	3	4	0	0	0	0	1	3	4	0.0	0.0	0.0	0.0		25.0	100.0
Lahaul & Spiti	Spiti(WL)	20						0				1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0		100.0	100.0	
Mandi	Kanog	20					1	1	2				2	2	0	0	0	1	3	66.7	0.0	0.0	0.0		33.3	100.0	
	Mandi	20						0			1	2	0	0	0	1	0	1	2	0.0	0.0	50.0	0.0		50.0	100.0	
	Kotgarh	20			1		3	4					0	0	0	0	1	0	3	4	0.0	0.0	25.0	0.0		75.0	100.0
Shimla	Rampur	21					1	1					5	5	0	0	0	0	6	6	0.0	0.0	0.0	0.0		100.0	100.0
	Theog	20						0				1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0		100.0	100.0	
Total of Territorial		341	4	0	3	0	14	21	4	0	3	1	26	34	8	0	6	1	40	55	14.5	0.0	10.9	1.8		72.7	100.0
Kangra	Bajinath	3						0					0	0	0	0	0	0	0	0	-	-	-	-	-	-	0.0
Kullu	Kullu	11						0					0	0	0	0	0	0	0	0	-	-	-	-	-	-	0.0
Mandi	Mandi	3						0					0	0	0	0	0	0	0	0	-	-	-	-	-	-	0.0
Kangra	Palampur	1						0					0	0	0	0	0	0	0	0	-	-	-	-	-	-	0.0
Kullu	Parvati	10						0	2			1	3	2	0	0	0	1	3	66.7	0.0	0.0	0.0		33.3	100.0	
Kinnaur	Kinnaur	21						0	2	1			3	2	1	0	0	0	3	66.7	33.3	0.0	0.0		0.0	100.0	
Shimla	Theog	11						0	1				1	1	0	0	0	1	1	100.0	0.0	0.0	0.0		0.0	100.0	
Solan	Nalagrh	5						0	1	4			5	5	1	4	0	0	5	20.0	80.0	0.0	0.0		0.0	100.0	
Shimla	Kotgarh	2						0	2				2	2	0	0	0	0	2	100.0	0.0	0.0	0.0		0.0	100.0	
Solan	Baddi	2						0					0	0	0	0	0	0	0	0	-	-	-	-	-	-	0.0
Total of Graziers/ Grassla		59	0	0	0	0	0	0	8	5	0	0	1	14	8	5	0	0	1	14	57.1	35.7	0.0	0.0		7.1	100.0
Grand Total		400	4	0	3	0	14	21	12	5	3	1	27	48	16	5	6	1	41	69	23.2	7.2	8.7	1.4		59.4	100.0

Source: Livelihood Survey, JICA Study Team (2017)

20. Access to Various Offices and Schools

20.1 Average Distance to Various Offices, Schools, Health Related Facilities in Km

District	Division	No of Respondents Interviewed (a)	JFM											Non JFM										
			1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10	11
			Block Office	Gram Panchayat	District Office	Forest Range Office	Police Station	Primary School	Secondary School	College	Anganwadi	Sr. Sec School	Primary Health Center	Block Office	Gram Panchayat	District Office	Forest Range Office	Police Station	Primary School	Secondary School	College	Anganwadi	Sr. Sec School	Primary Health Center
Bilaspur	Bilaspur	60	18.3	2.5	25.4	14.5	19.6	0.7	0.7	19.5	0.7	1.1	2.4	13.9	6.3	42.9	14.3	16.8	0.7	0.8	21.9	2.1	6.5	4.1
Bilaspur	Bharmour	20	27.9	0.3	52.3	19.0	27.2	0.2	0.5	45.2	0.2	0.3	2.0	20.0	1.1	52.9	2.7	20.0	0.2	0.3	20.0	0.1	2.4	1.5
Chamba	Chamba WL	20												19.5	0.4	81.1	17.9	19.5	0.2	0.8	25.6	0.2	15.2	5.2
Chamba	Pang	20	27.8	0.3	196.2	1.4	2.4	0.2	1.8	28.0	0.1	1.4	1.4	32.6	6.2	188.9	6.6	7.0	0.2	2.4	32.6	0.2	6.4	4.4
Kinnaur	Kinnaur	40	14.3	0.3	46.4	5.3	4.9	0.2	0.2	46.4	0.1	0.5	0.2	13.0	0.2	28.0	20.2	12.0	0.4	0.5	28.9	0.3	1.8	0.7
Kinnaur	Sarahan WL	20												32.4	0.2	91.1	28.7	32.5	0.3	1.9	61.9	0.2	0.2	0.7
Kullu	Kullu	20	16.0	5.0	15.0	15.0	16.0	0.3	6.8	16.3	0.2	9.2	4.8	23.7	0.3	5.1	5.5	5.1	0.2	0.4	5.4	0.2	5.3	5.0
Kullu	Kullu WL	20												14.8	18.4	2.2	40.8	2.3	2.5	0.2	0.3	12.6	0.1	1.8
Lahaul & Spiti	Spirit(W/L)	20												52.7	2.5	138.5	34.2	41.1	0.2	0.2	191.4	0.2	0.2	0.2
Mandi	Karsog	20	2.5	1.0	85.6	1.3	2.6	0.6	0.4	0.6	0.3		1.1	4.1	2.9	125.0	2.2	4.0	0.3	2.0	4.7	0.4	2.8	2.8
Mandi	Mandi	20	29.2	7.4	29.2	7.4	11.6	0.5	5.5	29.2	0.8	5.5	7.4	18.7	9.3	17.7	23.2	15.6	0.9	0.9	17.7	0.6	1.8	6.4
Shimla	Kotgarh	20	42.4	8.7	111.0	24.6	12.0	0.6	7.0	21.5	0.5	3.0	7.6	30.0	3.3	99.0	8.5	26.9	0.4	2.9	38.9	0.3	3.0	5.0
Shimla	Rampur	21	45.5	0.7	171.0	31.5	25.0	0.7	0.7	45.5	0.3	9.1	4.6	60.0	5.7	200.0	34.6	31.9	0.2	5.7	55.6	0.2		10.8
Shimla	Theog	20	28.9	2.6	50.9	27.1	28.4	1.5	2.7	27.1	2.1	2.0	7.9	22.4	0.6	53.0	22.1	24.7	0.7	0.6	22.4	0.5	0.5	6.4
Total of Territorial		341	23.1	2.6	64.6	14.2	15.5	0.6	2.2	27.7	0.6	2.4	3.3	25.6	2.7	79.5	17.0	19.2	0.3	1.3	43.5	0.4	4.0	3.4
Kangra	Bajinath	3												6.7	1.0	34.0	2.5	6.0	1.0	2.5	19.7	1.0		1.0
Kullu	Kullu	11												15.6	2.1	21.1	8.0	9.9	1.9	1.4	21.1	1.2		3.2
Mandi	Mandi	3												20.0	2.0	30.0	11.5	11.5	1.5	2.5	18.5	1.5		1.5
Kangra	Palampur	1												7.0	1.0	50.0	7.0	7.0	1.0	1.0	7.0	1.0		1.0
Kullu	Parvati	10												59.0	1.3	47.6	29.5	34.0	1.0	18.4	50.0	1.3		1.3
Kinnaur	Kinnaur	21												33.3	0.9	64.4	12.3	10.5	0.4	5.6	63.2	0.4	1.5	0.8
Shimla	Theog	1												60.0	9.0	75.0	40.0	20.0	6.0	8.0	60.0	5.0		5.0
Solan	Nalagarh	5												5.4	2.0	32.2	7.4	7.4	1.0	3.2	6.8	0.7		1.7
Shimla	Kotgarh	2												9.5	3.8	85.0	11.0	6.0	1.0	6.5	11.0	1.0	6.0	8.0
Solan	Baddi	2												6.0	2.0	50.0	6.0	6.0	3.0	2.0	15.0	2.0		3.0
Total of Graziers/ Grassla		59												29.3	1.6	49.9	14.2	14.1	1.1	6.8	41.2	0.9	3.8	1.8
Grand Total		400	23.1	2.6	64.6	14.2	15.5	0.6	2.2	27.7	0.6	2.4	3.3	26.4	2.5	73.1	16.4	18.1	0.5	2.7	43.0	0.5	4.0	3.1

Source: Livelihood Survey, JICA Study Team (2017)

20.1 Average Distance to Various Offices, Schools, Health Related Facilities in Km (2)

District	Division	No of Respondents Interviewed (a)	Total										
			1	2	3	4	5	6	7	8	9	10	11
			Block Office	Gram Panchayat	District Office	Forest Range Office	Police Station	Primary School	Secondary School	College	Anganwadi	Sr. Sec School	Primary Health Center
Bilaspur	Bilaspur	60	16.9	3.8	31.2	14.4	18.7	0.7	0.7	20.3	1.2	3.2	3.0
Bilaspur	Bharmour	20	24.4	0.7	52.6	11.7	24.0	0.2	0.4	33.9	0.2	1.3	1.7
Chamba	Chamba WL	20	19.5	0.4	81.1	17.9	19.5	0.2	0.8	25.6	0.2	15.2	5.2
Chamba	Pang	20	30.2	3.3	192.6	4.0	4.7	0.2	2.2	30.3	0.1	3.9	2.9
Kinnaur	Kinnaur	40	13.6	0.2	36.9	13.0	8.5	0.3	0.4	37.4	0.2	0.8	0.5
Kinnaur	Sarahan WL	20	36.2	6.0	105.0	16.5	19.5	0.5	5.1	30.2	0.4	3.0	6.2
Kullu	Kullu	20	19.9	2.7	10.1	10.3	10.6	0.2	3.6	10.9	0.2	6.9	4.9
Kullu	Kullu WL	20	18.4	2.2	40.8	2.3	2.5	0.2	0.3	12.6	0.1	1.8	0.7
Lahaul & Spiti	Spirit(W/L)	20	52.7	2.5	138.5	34.2	41.1	0.2	0.2	191.4	0.2	0.2	0.2
Mandi	Karsog	20	30.2	3.3	192.6	4.0	4.7	0.2	2.2	30.3	0.1	3.9	2.9
Mandi	Mandi	20	52.8	3.3	185.5	33.1	28.6	0.4	3.6	50.8	0.3	9.1	8.4
Shimla	Kotgarh	20	32.4	0.2	91.1	28.7	32.5	0.3	1.9	61.9	0.2	0.2	0.7
Shimla	Rampur	21	52.7	2.5	138.5	34.2	41.1	0.2	0.2	191.4	0.2	0.2	0.2
Shimla	Theog	20	26.0	1.7	51.9	24.9	26.7	1.2	2.0	25.0	1.4	1.2	7.2
Total of Territorial		341	24.6	2.7	73.3	15.8	17.6	0.4	1.7	37.0	0.5	3.4	3.4
Kangra	Bajinath	3	6.7	1.0	34.0	2.5	6.0	1.0	2.5	19.7	1.0		1.0
Kullu	Kullu	11	15.6	2.1	21.1	8.0	9.9	1.9	1.4	21.1	1.2		3.2
Mandi	Mandi	3	20.0	2.0	30.0	11.5	11.5	1.5	2.5	18.5	1.5		1.5
Kangra	Palampur	1	7.0	1.0	50.0	7.0	7.0	1.0	1.0	7.0	1.0		1.0
Kullu	Parvati	10	59.0	1.3	47.6	29.5	34.0	1.0	18.4	50.0	1.3		1.3
Kinnaur	Kinnaur	21	33.3	0.9	64.4	12.3	10.5	0.4	5.6	63.2	0.4	1.5	0.8
Shimla	Theog	1	60.0	9.0	75.0	40.0	20.0	6.0	8.0	60.0	5.0		5.0
Solan	Nalagarh	5	5.4	2.0	32.2	7.4	7.4	1.0	3.2	6.8	0.7		1.7
Shimla	Kotgarh	2	9.5	3.8	85.0	11.0	6.0	1.0	6.5	11.0	1.0	6.0	8.0
Solan	Baddi	2	6.0	2.0	50.0	6.0	6.0	3.0	2.0	15.0	2.0		3.0
Total of Graziers/ Grassla		59	29.3	1.6	49.9	14.2	14.1	1.1	6.8	41.2	0.9	3.8	1.8
Grand Total		400	25.2	2.5	70.1	15.6	17.2	0.5	2.5	37.6	0.5	3.4	3.2

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

1) Block Office

District	Division	No of Respondents Interviewed (n)	JFM					Total	Non JFM					Total	Total					% to Division Total							
			1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	1	2	3	4	5			
			Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus			
Bilaspur	Bilaspur	60	1				40	41	1				19	20	2	0	0	0	0	59	61	3.3	0.0	0.0	0.0	96.7	100.0
	Bharmour	20	2				11	13	3				9	12	5	0	0	0	20	25	20.0	0.0	0.0	0.0	80.0	100.0	
Chamba	Chamba WL	20					0	9					20	29	9	0	0	0	20	29	31.0	0.0	0.0	0.0	69.0	100.0	
	Pangi	20	2				10	12	2				10	12	4	0	0	0	20	24	16.7	0.0	0.0	0.0	83.3	100.0	
Kinnaur	Kinnaur	40					19	19	10				20	30	10	0	0	0	39	49	20.4	0.0	0.0	0.0	79.6	100.0	
	Sarahan WL	20					0	10					19	29	10	0	0	0	19	29	34.5	0.0	0.0	0.0	65.5	100.0	
Kullu	Kullu	20	10				10	20	8				10	18	18	0	0	0	20	38	47.4	0.0	0.0	0.0	52.6	100.0	
	Kullu WL	20					0	4					20	24	4	0	0	0	20	24	16.7	0.0	0.0	0.0	83.3	100.0	
Lahaul & Spiti	Spiri(WL)	20					0	2				2	17	21	2	0	0	2	17	21	9.5	0.0	0.0	9.5	81.0	100.0	
Mandi	Karsog	20	9				9	18	7			1	9	17	16	0	0	1	18	35	45.7	0.0	0.0	2.9	51.4	100.0	
	Mandi	20	4				10	14	7				10	17	11	0	0	0	20	31	35.5	0.0	0.0	0.0	64.5	100.0	
	Kotgarh	20	2				10	12	1				10	11	3	0	0	0	20	23	13.0	0.0	0.0	0.0	87.0	100.0	
Shimla	Rampur	21	1				10	11	6				10	16	7	0	0	0	20	27	25.9	0.0	0.0	0.0	74.1	100.0	
	Theog	20				1	11	12	3				9	12	3	0	0	1	20	24	12.5	0.0	0.0	4.2	83.3	100.0	
Total of Territorial		341	31	0	0	1	140	172	73	0	0	3	192	268	104	0	0	4	332	440	23.6	0.0	0.0	0.9	75.5	100.0	
Kangra	Bujinath	3					3	3					3	3	0	0	0	3	3	3	0.0	0.0	0.0	0.0	100.0	100.0	
Kullu	Kullu	11									1		6	7	0	0	0	1	8	9	0.0	0.0	0.0	11.1	88.9	100.0	
Mandi	Mandi	3											2	2	0	0	0	2	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Kangra	Palampur	1											1	1	0	0	0	1	1	1	0.0	0.0	0.0	0.0	100.0	100.0	
Kullu	Parvati	10											10	10	0	0	0	10	10	10	0.0	0.0	0.0	0.0	100.0	100.0	
Kinnaur	Kinnaur	21										2	20	22	0	0	0	2	24	26	0.0	0.0	0.0	7.7	92.3	100.0	
Shimla	Theog	1											1	1	0	0	0	1	1	1	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Nalagrh	5											2	5	3	0	0	0	8	11	0.0	0.0	0.0	0.0	72.7	100.0	
Shimla	Kotgarh	2											2	2	0	0	0	2	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Baddi	2											2	2	0	0	0	2	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	0	0	0	3	0	0	3	49	55	3	0	0	3	61	67	4.5	0.0	0.0	4.5	91.0	100.0	
Grand Total		400	31	0	0	1	140	172	76	0	0	6	241	323	107	0	0	7	393	507	21.1	0.0	0.0	1.4	77.5	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

2) Gram panchayat

District	Division	No of Respondents Interviewed (n)	JFM					Total	Non JFM					Total	Total					% to Division Total						
			1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	1	2	3	4	5		
			Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus		
Bilaspur	Bilaspur	60	18			1	25	44	12				8	20	30	0	0	0	33	64	46.9	0.0	0.0	1.6	51.6	100.0
	Bharmour	20	11					11	9				9	20	0	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
Chamba	Chamba WL	20						0	20				20	20	0	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Pangi	20	10					10	10				6	16	20	0	0	0	6	26	76.9	0.0	0.0	0.0	23.1	100.0
Kinnaur	Kinnaur	40	19					19	18				18	37	0	0	0	0	37	100.0	0.0	0.0	0.0	0.0	100.0	
	Sarahan WL	20						0	20				20	20	0	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu	20	10					10	10				10	20	0	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Kullu WL	20						0	20				20	20	0	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
Lahaul & Spiti	Spiri(WL)	20						0	17			3	20	20	17	0	0	3	20	85.0	0.0	0.0	0.0	15.0	100.0	
Mandi	Karsog	20	10					10	7			1	8	16	17	0	0	1	8	26	65.4	0.0	0.0	3.8	30.8	100.0
	Mandi	20	6			4		10	8				2	10	14	0	0	6	20	70.0	0.0	0.0	0.0	30.0	100.0	
	Kotgarh	20	4					6	10			1	10	13	0	0	0	7	20	65.0	0.0	0.0	0.0	35.0	100.0	
Shimla	Rampur	21	10					10	11				11	21	0	0	0	0	21	100.0	0.0	0.0	0.0	0.0	100.0	
	Theog	20	9					2	11				9	18	0	0	0	2	20	90.0	0.0	0.0	0.0	10.0	100.0	
Total of Territorial		341	107	0	0	1	37	145	180	0	0	1	28	209	287	0	0	2	65	354	81.1	0.0	0.0	0.6	18.4	100.0
Kangra	Bujinath	3						1	1				1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu	11							3			1	1	5	3	0	0	1	1	5	60.0	0.0	0.0	20.0	100.0	
Mandi	Mandi	3							2				2	2	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Kangra	Palampur	1							1				1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Parvati	10							4				4	4	0	0	0	4	100.0	0.0	0.0	0.0	0.0	100.0		
Kinnaur	Kinnaur	21							21				21	21	0	0	0	0	21	100.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Theog	1							1				1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	100.0	
Solan	Nalagrh	5							5				5	5	0	0	0	0	5	100.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Kotgarh	2							1			1	1	1	0	0	0	0	2	50.0	0.0	50.0	0.0	0.0	100.0	
Solan	Baddi	2							2				2	2	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	0	0	41	0	1	1	1	44	41	0	1	1	1	44	93.2	0.0	2.3	2.3	2.3	100.0	
Grand Total		400	107	0	0	1	37	145	221	0	1	2	29	253	328	0	1	3	66	398	82.4	0.0	0.3	0.8	16.6	100.0

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

3) District Office

District	Division	No of Respondents Interviewed (n)	JFM					Non JFM					Total					% to Division Total								
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5				
			Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus				
Bilaspur	Bilaspur	60				1	40	41			20	20				1	60	61				1.6	98.4	100.0		
	Bharmour	20	2				11	13	3		9	12	5	0	0	0	20	25	20.0	0.0	0.0	0.0	80.0	100.0		
	Chamba WL	20									20	29	9	0	0	0	20	29	31.0	0.0	0.0	0.0	69.0	100.0		
	Pangi	20	2				10	12	2		10	12	4	0	0	0	20	24	16.7	0.0	0.0	0.0	83.3	100.0		
	Kinnaur	40					19	19	9		20	29	9	0	0	0	39	48	18.8	0.0	0.0	0.0	81.3	100.0		
	Sarahan WL	20						0	10			18	29	10	0	0	1	18	29	34.5	0.0	0.0	3.4	62.1	100.0	
	Kullu	20	10				10	20	10		10	20	20	0	0	0	20	40	50.0	0.0	0.0	0.0	50.0	100.0		
	Kullu WL	20						0	2			3	20	25	2	0	3	20	25	8.0	0.0	0.0	12.0	80.0	100.0	
	Lahaul & Spiti	20					0	2			4	14	20	2	0	0	4	14	20	10.0	0.0	0.0	20.0	70.0	100.0	
	Mandi	20	3				10	13			1	10	11	3	0	0	1	20	24	12.5	0.0	0.0	4.2	83.3	100.0	
	Mandi	20	4				10	14	7			10	17	11	0	0	0	20	31	35.5	17.0	0.0	0.0	64.5	100.0	
	Shimla	20	1				10	11				10	10	1	0	0	0	20	21	4.8	0.0	0.0	0.0	95.2	100.0	
	Rampur	21					10	10	6			10	16	6	0	0	0	20	26	23.1	0.0	0.0	0.0	76.9	100.0	
	Theog	20				1	11	12			9	9	0	0	0	1	20	21	0.0	0.0	0.0	4.8	95.2	100.0		
Total of Territorial		341	22	0	0	2	141	165	60	0	0	9	190	259	82	0	0	11	331	424	19.3	0.0	0.0	2.6	78.1	100.0
Kangra	Bainmath	3					3	3				3	3	0	0	0	3	3	0.0	0.0	0.0	0.0	100.0	100.0		
Kullu	Kullu	11									1	6	7	0	0	0	1	6	7	0.0	0.0	0.0	14.3	85.7	100.0	
Mandi	Mandi	3										2	2	0	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Kangra	Palampur	1										1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0	100.0	100.0	
Kullu	Parvati	10										10	10	0	0	0	0	10	10	0.0	0.0	0.0	0.0	100.0	100.0	
Kinnaur	Kinnaur	21									1	20	21	0	0	0	1	20	21	0.0	0.0	0.0	4.8	95.2	100.0	
Shimla	Theog	1										1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Nalagarh	5										5	5	0	0	0	0	5	5	0.0	0.0	0.0	0.0	100.0	100.0	
Shimla	Kotgarh	2										2	2	0	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Baddi	2										2	2	0	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	0	0	0	0	0	0	2	52	54	0	0	0	2	52	54	0.0	0.0	0.0	3.7	96.3	100.0
Grand Total		400	22	0	0	2	141	165	60	0	0	11	242	313	82	0	0	13	383	478	17.2	0.0	0.0	2.7	80.1	100.0

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

4) Forest Range Office

District	Division	No of Respondents Interviewed (n)	JFM					Non JFM					Total					% to Division Total								
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5				
			Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus				
Bilaspur	Bilaspur	60				1	40	41			20	20				1	60	61				1.6	98.4	100.0		
	Bharmour	20	3				10	13	9			18	25	7	0	0	18	25	54.5	0.0	0.0	0.0	45.5	100.0		
	Chamba WL	20										10	16	20	0	0	6	26	28.0	0.0	0.0	0.0	72.0	100.0		
	Pangi	20	10				6	16	6			6	16	20	0	0	6	26	76.9	0.0	0.0	0.0	23.1	100.0		
	Kinnaur	40	10				9	19	11			16	27	21	0	0	0	25	46	45.7	0.0	0.0	0.0	54.3	100.0	
	Sarahan WL	20						0	10			19	29	10	0	0	0	19	29	34.5	0.0	0.0	0.0	65.5	100.0	
	Kullu	20	10				10	20	10			10	20	20	0	0	0	20	40	50.0	0.0	0.0	0.0	50.0	100.0	
	Kullu WL	20						0	13			1	18	32	13	0	0	1	18	32	40.6	0.0	0.0	3.1	56.3	100.0
	Lahaul & Spiti	20						0	11			8	19	11	0	0	0	8	19	57.9	0.0	0.0	0.0	42.1	100.0	
	Mandi	20	10				6	16	7		1	9	17	17	0	0	1	15	33	51.5	17.0	0.0	3.0	45.5	100.0	
	Mandi	20	6				6	12	7			10	17	13	0	0	0	16	29	44.8	0.0	0.0	0.0	55.2	100.0	
	Shimla	20	4				9	13		1		10	11	4	1	0	0	19	24	16.7	4.2	0.0	0.0	79.2	100.0	
	Rampur	21					10	10	6			7	13	6	0	0	0	17	23	26.1	0.0	0.0	0.0	73.9	100.0	
	Theog	20				1	11	12	3			9	12	3	0	0	1	20	24	12.5	0.0	0.0	4.2	83.3	100.0	
Total of Territorial		341	53	0	0	2	111	166	104	1	0	2	160	267	157	0	0	4	271	433	36.3	0.2	0.0	0.9	62.6	100.0
Kangra	Bainmath	3										1	3	2	0	0	0	1	3	66.7	0.0	0.0	0.0	33.3	100.0	
Kullu	Kullu	11									1	3	6	2	0	0	1	3	6	33.3	0.0	0.0	0.0	16.7	50.0	100.0
Mandi	Mandi	3										2	2	0	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Kangra	Palampur	1										1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0	100.0	100.0	
Kullu	Parvati	10										10	10	0	0	0	0	10	10	0.0	0.0	0.0	0.0	100.0	100.0	
Kinnaur	Kinnaur	21									8	12	21	8	0	0	1	12	21	38.1	0.0	0.0	4.8	57.1	100.0	
Shimla	Theog	1										1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Nalagarh	5										5	5	0	0	0	0	5	5	0.0	0.0	0.0	0.0	100.0	100.0	
Shimla	Kotgarh	2										2	2	0	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Baddi	2										2	2	0	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	0	0	0	0	12	0	2	39	53	12	0	0	2	39	53	22.6	0.0	0.0	3.8	73.6	100.0
Grand Total		400	53	0	0	2	111	166	116	1	0	4	199	320	169	0	0	6	310	486	34.8	0.2	0.0	1.2	63.8	100.0

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.
7) Secondary School

District	Division	No of Respondents Interviewed (n)	JFM					Non JFM					Total					% to Division Total										
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	Total					
			Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Total					
Bilaspur	Bilaspur	60	32					32	20					20	52	0	0	0	0	0	52	100.0	0.0	0.0	0.0	0.0	100.0	
	Bharmour	20	11					11	4					4	15	0	0	0	0	0	15	100.0	0.0	0.0	0.0	0.0	100.0	
Chamba	Chamba WL	20							19					19	19	0	0	0	0	0	19	100.0	0.0	0.0	0.0	0.0	100.0	
	Pangi	20	5					5	10					10	15	0	0	0	0	0	15	100.0	0.0	0.0	0.0	0.0	100.0	
Kinnaur	Kinnaur	40	10					10	17					17	27	0	0	0	0	0	27	100.0	0.0	0.0	0.0	0.0	100.0	
	Sarahan WL	20							13					13	13	0	0	0	0	0	13	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu	20	10					6	16					10	20	0	0	0	6	26	76.9	0.0	0.0	0.0	0.0	23.1	100.0	
	Kullu WL	20							20					20	20	0	0	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
Lahaul & Spiti	Spirit(W/L)	20							12					12	12	0	0	0	0	0	12	100.0	0.0	0.0	0.0	0.0	100.0	
Mandi	Karsog	20	10					10	4					3	7	14	0	0	0	3	17	82.4	0.0	0.0	0.0	0.0	17.6	100.0
	Mandi	20	6					4	10					7	13	0	0	0	4	17	76.5	0.0	0.0	0.0	0.0	23.5	100.0	
	Kotgarh	20	5					9	14					3	11	13	0	0	0	12	23	52.0	0.0	0.0	0.0	0.0	48.0	100.0
Shimla	Rampur	21	8					8	11					11	19	0	0	0	0	19	100.0	0.0	0.0	0.0	0.0	100.0		
	Theog	20	7					2	9					4	11	0	0	0	2	13	84.6	0.0	0.0	0.0	0.0	15.4	100.0	
Total of Territorial		341	104	0	0	0	0	21	125	159	0	0	0	6	165	263	0	0	0	27	290	90.7	0.0	0.0	0.0	9.3	100.0	
Kangra	Bainmath	3							2					1	3	2	0	0	0	1	3	66.7	0.0	0.0	0.0	0.0	33.3	100.0
Kullu	Kullu	11							6					6	6	0	0	0	0	6	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
Mandi	Mandi	3							2					2	2	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
Kangra	Palampur	1							1					1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Parvati	10							4					6	10	4	0	0	6	10	40.0	0.0	0.0	0.0	0.0	60.0	100.0	
Kinnaur	Kinnaur	21							21					21	21	0	0	0	0	0	21	100.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Theog	1							1					1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
Solan	Nalagarh	5							1					4	5	1	0	0	4	5	20.0	0.0	0.0	0.0	0.0	80.0	100.0	
Shimla	Kotgarh	2							2					2	2	0	0	0	2	2	0.0	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Baddi	2							2					2	2	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	0	0	0	40	0	0	0	0	13	53	40	0	0	0	13	53	75.5	0.0	0.0	0.0	24.5	100.0	
Grand Total		400	104	0	0	0	0	21	125	199	0	0	0	0	19	218	303	0	0	0	40	343	88.3	0.0	0.0	0.0	11.7	100.0

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.
8) College

District	Division	No of Respondents Interviewed (n)	JFM					Non JFM					Total					% to Division Total										
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	Total					
			Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Total					
Bilaspur	Bilaspur	60							36					20	20					56	57	0.0	0.0	0.0	1.8	98.2	100.0	
	Bharmour	20	2					11	13					9	12	5	0	0	0	20	23	20.0	0.0	0.0	0.0	0.0	80.0	100.0
Chamba	Chamba WL	20							9					20	29	9	0	0	0	20	29	31.0	0.0	0.0	0.0	0.0	69.0	100.0
	Pangi	20	2					10	13					10	12	4	0	0	0	20	24	16.7	0.0	0.0	0.0	0.0	83.3	100.0
Kinnaur	Kinnaur	40							19					20	34	14	0	0	0	39	53	26.4	0.0	0.0	0.0	0.0	73.6	100.0
	Sarahan WL	20							0					18	28	10	0	0	0	18	28	35.7	0.0	0.0	0.0	0.0	64.3	100.0
Kullu	Kullu	20	10					10	20					10	19	19	0	0	0	20	39	48.7	0.0	0.0	0.0	0.0	51.3	100.0
	Kullu WL	20							0					1	20	23	2	0	0	1	20	23	8.7	0.0	0.0	4.3	87.0	100.0
Lahaul & Spiti	Spirit(W/L)	20							0					4	19	23	0	0	4	19	23	0.0	0.0	0.0	17.4	82.6	100.0	
Mandi	Karsog	20	10					1	11					1	9	16	0	0	1	10	27	59.3	0.0	0.0	3.7	37.0	100.0	
	Mandi	20	4						10					10	17	11	0	0	0	20	31	35.5	0.0	0.0	0.0	0.0	64.5	100.0
	Kotgarh	20	4						10					10	10	4	0	0	0	20	24	16.7	0.0	0.0	0.0	0.0	83.3	100.0
Shimla	Rampur	21							10					10	16	6	0	0	0	20	26	23.1	0.0	0.0	0.0	0.0	76.9	100.0
	Theog	20							11					9	12	3	0	0	0	20	23	13.0	0.0	0.0	0.0	0.0	87.0	100.0
Total of Territorial		341	32	0	0	0	1	128	161	71	0	0	0	6	194	271	103	0	5	322	432	23.8	0.0	0.0	1.6	94.5	100.0	
Kangra	Bainmath	3							2					2	2	0	0	0	0	2	2	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Kullu	Kullu	11							6					1	6	7	0	0	1	6	7	0.0	0.0	0.0	14.3	85.7	100.0	
Mandi	Mandi	3												1	2	1	0	0	0	1	2	50.0	0.0	0.0	0.0	0.0	50.0	100.0
Kangra	Palampur	1							1					1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Kullu	Parvati	10							10					10	10	0	0	0	0	10	10	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Kinnaur	Kinnaur	21							21					1	20	21	0	0	1	20	21	0.0	0.0	0.0	4.8	95.2	100.0	
Shimla	Theog	1							1					1	1	0	0	0	1	1	0.0	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Nalagarh	5							5					5	5	0	0	0	5	5	0.0	0.0	0.0	0.0	0.0	100.0	100.0	
Shimla	Kotgarh	2							2					2	2	0	0	0	2	2	0.0	0.0	0.0	0.0	0.0	100.0	100.0	
Solan	Baddi	2							2					2	2	0	0	0	2	2	0.0	0.0	0.0	0.0	0.0	100.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	0	0	0	1	0	0	0	0	2	50	53	1	0	2	50	53	1.9	0.0	0.0	3.8	94.3	100.0	
Grand Total		400	32	0	0	0	1	128	161	72	0	0	0	8	244	324	104	0	9	372	485	21.4	0.0	0.0	1.9	76.7	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

9) Angnawadi

District	Division	No of Respondents Interviewed (n)	JFM						Non JFM						Total						% to Division Total					
			1	2	3	4	5	Total	1	2	3	4	5	Total	1	2	3	4	5	Total	1	2	3	4	5	Total
			Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus	
Bilaspur	Bilaspur	60	38					39	19					19	57	0	0	0	1	58	98.3	0.0	0.0	0.0	1.7	100.0
	Bharmour	20	11					11	9					9	20	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Chamba WL	20							20					20	20	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Pangi	20	10					10	10					10	20	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Kinnaur	40	19					19	18					18	37	0	0	0	37	100.0	0.0	0.0	0.0	0.0	100.0	
	Sarahan WL	20						0	18					18	18	0	0	0	18	100.0	0.0	0.0	0.0	0.0	100.0	
	Kullu	20	10					10	10					10	20	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Kullu WL	20						0	20					20	20	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Lahaul & Spiti	20						0	19					19	19	0	0	0	19	100.0	0.0	0.0	0.0	0.0	100.0	
	Mandi	20	10					10	10					10	20	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Mandi	20	10					10	10					10	20	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Shimla	20	10					10	10					10	20	0	0	0	20	100.0	0.0	0.0	0.0	0.0	100.0	
	Shimla	21	10					10	11					11	21	0	0	0	21	100.0	0.0	0.0	0.0	0.0	100.0	
	Shimla	20	10					1	9					9	19	0	0	0	19	95.0	0.0	0.0	0.0	5.0	100.0	
Total of Territorial		341	138	0	0	0	2	140	193	0	0	0	0	193	331	0	0	0	2	333	99.4	0.0	0.0	0.0	0.6	100.0
Kangra	Bijnath	3						0	3					3	3	0	0	0	3	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu	11						5	5		1			6	5	0	0	1	6	83.3	0.0	0.0	16.7	0.0	100.0	
Mandi	Mandi	3						2	2					2	2	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Kangra	Palampur	1						1	1					1	1	0	0	0	1	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Parvati	10						10	10					10	10	0	0	0	10	100.0	0.0	0.0	0.0	0.0	100.0	
Kinnaur	Kinnaur	21						21	21					21	21	0	0	0	21	100.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Theog	1						1	1					1	1	0	0	0	1	100.0	0.0	0.0	0.0	0.0	100.0	
Solan	Nalagarh	5						5	5					5	5	0	0	0	5	100.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Kotgarh	2						2	2					2	2	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Solan	Baddi	2						2	2					2	2	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Total of Graziers/ Grassla		59	0	0	0	0	0	52	0	0	1	0	0	53	52	0	0	1	53	98.1	0.0	0.0	1.9	0.0	100.0	
Grand Total		400	138	0	0	0	2	140	245	0	0	1	0	246	383	0	0	1	2	386	99.2	0.0	0.0	0.3	0.5	100.0

Source: Livelihood Survey, JICA Study Team (2017)

20.2 Mode of Transportation for Government Offices and etc.

9) PHC

District	Division	No of Respondents Interviewed (n)	JFM						Non JFM						Total						% to Division Total						
			1	2	3	4	5	Total	1	2	3	4	5	Total	1	2	3	4	5	Total	1	2	3	4	5	Total	
			Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus		
Bilaspur	Bilaspur	60	18			6	21	45	13					7	20	31	0	0	6	28	65	47.7	0.0	0.0	9.2	43.1	100.0
	Bharmour	20	11					13	9					9	20	20	0	0	2	22	90.9	0.0	0.0	0.0	9.1	100.0	
	Chamba WL	20						0	18					5	23	18	0	0	5	23	78.3	0.0	0.0	0.0	21.7	100.0	
	Pangi	20	10					10	10					6	16	20	0	0	6	26	76.9	0.0	0.0	0.0	23.1	100.0	
	Kinnaur	40	17					17	15					11	16	32	0	0	1	33	97.0	0.0	0.0	0.0	3.0	100.0	
	Sarahan WL	20						0	17					1	18	17	0	0	1	18	94.4	0.0	0.0	0.0	5.6	100.0	
	Kullu	20	10					5	15					8	15	17	0	0	13	30	56.7	0.0	0.0	0.0	43.3	100.0	
	Kullu WL	20						0	15					5	20	15	0	0	5	20	75.0	0.0	0.0	0.0	25.0	100.0	
	Lahaul & Spiti	20						0	19					19	19	0	0	0	0	19	100.0	0.0	0.0	0.0	0.0	100.0	
	Mandi	20	10					2	12				1	9	15	15	0	0	1	11	27	55.6	0.0	0.0	3.7	40.7	100.0
	Mandi	20	6					4	10					4	11	13	0	0	8	21	61.9	0.0	0.0	0.0	38.1	100.0	
	Shimla	20	5					9	14					7	12	10	0	0	16	26	38.5	0.0	0.0	0.0	61.5	100.0	
	Shimla	21	5					2	7					3	13	15	0	0	5	20	75.0	0.0	0.0	0.0	25.0	100.0	
	Shimla	20	4					8	12					3	11	12	0	0	11	23	52.2	0.0	0.0	0.0	47.8	100.0	
Total of Territorial		341	96	0	0	6	53	155	158	0	0	1	0	59	218	254	0	0	7	112	378	68.1	0.0	0.0	1.9	30.0	100.0
Kangra	Bijnath	3						0	3					3	3	0	0	0	0	3	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Kullu	11						0	4		1			5	4	0	0	1	0	5	80.0	0.0	0.0	20.0	0.0	100.0	
Mandi	Mandi	3						0	2					2	2	0	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0	
Kangra	Palampur	1						1	1					1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	100.0	
Kullu	Parvati	10						10	10					10	10	0	0	0	0	10	100.0	0.0	0.0	0.0	0.0	100.0	
Kinnaur	Kinnaur	21						21	21					21	21	0	0	0	0	21	100.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Theog	1						0	1					1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	100.0	
Solan	Nalagarh	5						5	5					5	5	0	0	0	0	5	100.0	0.0	0.0	0.0	0.0	100.0	
Shimla	Kotgarh	2						0	2					2	2	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0		
Solan	Baddi	2						0	2					2	2	0	0	0	2	100.0	0.0	0.0	0.0	0.0	100.0		
Total of Graziers/ Grassla		59	0	0	0	0	0	49	0	0	1	0	0	2	52	49	0	0	1	2	52	94.2	0.0	0.0	1.9	3.8	100.0
Grand Total		400	96	0	0	6	53	155	20																		

20.2 Mode of Transportation for Government Offices and etc.
10) Secondary School

District	Division	No of Respondents Interviewed (a)	JFM					Total	Non JFM					Total	Total					% to Division Total									
			1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	1	2	3	4	5	Total				
			Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus		Foot	Motorcycle	Bicycle	Own Vehical	Bus	Foot	Motorcycle	Bicycle	Own Vehical	Bus	Total				
Bilaspur	Bilaspur	60	19					19	3					9	12	22	0	0	0	0	9	31	71.0	0.0	0.0	0.0	0.0	29.0	100.0
	Bharmour	20	9					9	8					8	17	0	0	0	0	0	17	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
Chamba	Chamba WL	20						0	5					15	20	5	0	0	0	15	20	25.0	0.0	0.0	0.0	0.0	75.0	100.0	
	Pangi	20	10					10	10					6	16	20	0	0	0	6	26	76.9	0.0	0.0	0.0	0.0	23.1	100.0	
Kinnaur	Kinnaur	40	15					15	3					1	4	18	0	0	0	1	19	94.7	0.0	0.0	0.0	0.0	5.3	100.0	
	Sarahan WL	20						0	13					13	13	0	0	0	0	13	100.0	0.0	0.0	0.0	0.0	0.0	100.0		
Kullu	Kullu	20	6					6	12					8	16	14	0	0	0	14	28	50.0	0.0	0.0	0.0	0.0	50.0	100.0	
	Kullu WL	20						0	10					11	21	10	0	0	0	11	21	47.6	0.0	0.0	0.0	0.0	52.4	100.0	
Lahaul & Spiti	Spiti(W/L)	20						0	16					16	16	0	0	0	0	16	100.0	0.0	0.0	0.0	0.0	0.0	100.0		
Mandi	Karsog	20						0	5			1	8	14	5	0	0	1	8	14	35.7	0.0	0.0	0.0	7.1	57.1	100.0		
	Mandi	20	4					4	3					3	7	0	0	0	0	7	100.0	0.0	0.0	0.0	0.0	0.0	100.0		
	Kotgarh	20	1					1	2	2				2	3	0	0	0	1	4	75.0	0.0	0.0	0.0	0.0	25.0	100.0		
Shimla	Rampur	21	2					3	5					0	2	0	0	0	3	5	40.0	0.0	0.0	0.0	0.0	60.0	100.0		
	Theog	20	4					4	5					5	9	0	0	0	0	9	100.0	0.0	0.0	0.0	0.0	0.0	100.0		
Total of Territorial		341	70	0	0	0	10	80	91	0	0	1	58	150	161	0	0	1	68	230	70.0	0.0	0.0	0.0	0.4	29.6	100.0		
Kangra	Bajinath	3						0						0	0	0	0	0	0	0	-	-	-	-	-	-	0.0		
Kullu	Kullu	11						0						0	0	0	0	0	0	0	-	-	-	-	-	-	0.0		
Mandi	Mandi	3						0						0	0	0	0	0	0	0	-	-	-	-	-	-	0.0		
Kangra	Palampur	1						0						0	0	0	0	0	0	0	-	-	-	-	-	-	0.0		
Kullu	Parvati	10						0						0	0	0	0	0	0	0	-	-	-	-	-	-	0.0		
Kinnaur	Kinnaur	21						0	1					1	1	0	0	0	0	1	100.0	0.0	0.0	0.0	0.0	0.0	100.0		
Shimla	Theog	1						0						0	0	0	0	0	0	0	-	-	-	-	-	-	0.0		
Solan	Nalagarh	5						0						0	0	0	0	0	0	0	-	-	-	-	-	-	0.0		
Shimla	Kotgarh	2						0					1	1	0	0	0	0	1	1	0.0	0.0	0.0	0.0	0.0	100.0	100.0		
Solan	Baddi	2						0						0	0	0	0	0	0	0	-	-	-	-	-	-	0.0		
Total of Graziers/ Grassla		59	0	0	0	0	0	0	1	0	0	0	1	2	1	0	0	0	1	2	50.0	0.0	0.0	0.0	0.0	50.0	100.0		
Grand Total		400	70	0	0	0	10	80	92	0	0	1	59	152	162	0	0	1	69	232	69.8	0.0	0.0	0.0	0.4	29.7	100.0		

Source: Livelihood Survey, JICA Study Team (2017)

21. Participation in Community Organisations/ Village Governance (1)

21.1 How long have you been a member of different types of village organisations/ groups?

1) Ward Sabha

District	Division	No of Respondents Interviewed (a)	JFM					Non JFM					Total					Total (%)				
			1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total
			Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years	
Bilaspur	Bilaspur	60	4	2	1	1	8	1		1		2	5	2	2	1	10	50.0	20.0	20.0	10.0	100.0
Chamba	Bharmour	20				0					0	0	0	0	0	0	-	-	-	-	0.0	
	Chamba WL	20				0					0	0	0	0	0	0	-	-	-	-	0.0	
	Pangi	20				0					0	0	0	0	0	0	-	-	-	-	0.0	
Kinnaur	Kinnaur	40			3	1	4					0	0	0	3	1	4	0.0	0.0	75.0	25.0	100.0
	Sarahan WL	20				0		2	2	1	5	0	2	2	1	5	0.0	40.0	40.0	20.0	100.0	
Kullu	Kullu	20				0					0	0	0	0	0	0	-	-	-	-	0.0	
	Kullu WL	20				0					0	0	0	0	0	0	-	-	-	-	0.0	
Lahaul & Spiti	Spiti(W/L)	20				0			1	1	0	0	1	0	1	0.0	0.0	100.0	0.0	100.0		
Mandi	Karsog	20	1		3	2	6					0	1	0	3	2	6	16.7	0.0	50.0	33.3	100.0
	Mandi	20					0	2				2	0	0	0	0	2	100.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	20	1			1	2					2	2	1	0	0	3	4	25.0	0.0	0.0	75.0
	Rampur	21				1	1					0	0	0	0	1	1	0.0	0.0	0.0	0.0	100.0
	Theog	20	1	2	1	4	1	1					2	2	3	1	0	6	33.3	50.0	16.7	0.0
Total of Territorial		341	7	4	8	6	25	4	3	4	3	14	11	7	12	9	39	28.2	17.9	30.8	23.1	100.0
Kangra	Bainath	3				0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0	
Kullu	Kullu	11				0		2		1	3	0	2	0	1	3	0.0	66.7	0.0	33.3	100.0	
Mandi	Mandi	3				0		2			2	0	2	0	0	2	0.0	100.0	0.0	0.0	100.0	
Kangra	Palampur	1				0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0	
Kullu	Parvati	10				0		1	4		5	0	1	4	0	5	0.0	20.0	80.0	0.0	100.0	
Kinnaur	Kinnaur	21				0	3	7			10	3	7	0	0	10	30.0	70.0	0.0	0.0	100.0	
Shimla	Theog	1				0					0	0	0	0	0	0	-	-	-	-	0.0	
Solan	Nalagarh	5				0	2				2	2	0	0	0	2	100.0	0.0	0.0	0.0	100.0	
Shimla	Kotgarh	2				0					0	0	0	0	0	0	-	-	-	-	0.0	
Solan	Baddi	2				0	2				2	2	0	0	0	2	100.0	0.0	0.0	0.0	100.0	
Total of Graziers/ Grassland		59	0	0	0	0	0	7	14	4	1	26	7	14	4	1	26	26.9	53.8	15.4	3.8	100.0
Grand Total		400	7	4	8	6	25	11	17	8	4	40	18	21	16	10	65	27.7	32.3	24.6	15.4	100.0

Source: Livelihood Survey, JICA Study Team (2017)

21.1 How long have you been a member of different types of village organisations/ groups?

2) Gram Sabha

District	Division	No of Respondents Interviewed (a)	JFM					Non JFM					Total					Total (%)				
			1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total
			Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years	
Bilaspur	Bilaspur	60	6	17	6	4	33	1	16	1	1	19	7	33	7	5	52	13.5	63.5	13.5	9.6	100.0
Chamba	Bharmour	20		10		1	11	1	7	1		9	1	17	1	1	20	5.0	85.0	5.0	5.0	100.0
	Chamba WL	20				0		18	2		20	0	18	2	0	20	0.0	90.0	10.0	0.0	100.0	
	Pangi	20	2	8			10		10			10	2	18	0	0	20	10.0	90.0	0.0	0.0	100.0
Kinnaur	Kinnaur	40		11	7	1	19	1	14	3		18	1	25	10	1	37	2.7	67.6	27.0	2.7	100.0
	Sarahan WL	20				0	1	12	6	1	20	1	12	6	1	20	5.0	60.0	30.0	5.0	100.0	
Kullu	Kullu	20		9	1		10	2	8			10	2	17	1	0	20	10.0	85.0	5.0	0.0	100.0
	Kullu WL	20				0		15			15	0	15	0	0	15	0.0	100.0	0.0	0.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20				0	2	14	4		20	2	14	4	0	20	10.0	70.0	20.0	0.0	100.0	
Mandi	Karsog	20	1	4	3	1	9	3	5	2		10	4	9	5	1	19	21.1	47.4	26.3	5.3	100.0
	Mandi	20	3	7			10	1	5	2	1	9	4	12	2	1	19	21.1	63.2	10.5	5.3	100.0
Shimla	Kotgarh	20	2	6	2		10	1	5	2	2	10	3	11	4	2	20	15.0	55.0	20.0	10.0	100.0
	Rampur	21	1	4	4	1	10	1	5	3		9	2	9	7	1	19	10.5	47.4	36.8	5.3	100.0
	Theog	20	2	8	1		11	3	4	2		9	5	12	3	0	20	25.0	60.0	15.0	0.0	100.0
Total of Territorial		341	17	84	24	8	133	17	138	28	5	188	34	222	52	13	321	10.6	69.2	16.2	4.0	100.0
Kangra	Bainath	3				0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0	
Kullu	Kullu	11				0		6		1	7	0	6	0	1	7	0.0	85.7	0.0	14.3	100.0	
Mandi	Mandi	3				0		2			2	0	2	0	0	2	0.0	100.0	0.0	0.0	100.0	
Kangra	Palampur	1				0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0	
Kullu	Parvati	10				0		7		1	8	0	7	0	1	8	0.0	87.5	0.0	12.5	100.0	
Kinnaur	Kinnaur	21				0	1	18		2	21	1	18	0	2	21	4.8	85.7	0.0	9.5	100.0	
Shimla	Theog	1				0					0	0	0	0	0	0	-	-	-	-	0.0	
Solan	Nalagarh	5				0	2	1			3	2	1	0	0	3	66.7	33.3	0.0	0.0	100.0	
Shimla	Kotgarh	2				0					0	0	0	0	0	0	-	-	-	-	0.0	
Solan	Baddi	2				0	2				2	2	0	0	0	2	100.0	0.0	0.0	0.0	100.0	
Total of Graziers/ Grassland		59	0	0	0	0	0	5	36	0	4	45	5	36	0	4	45	11.1	80.0	0.0	8.9	100.0
Grand Total		400	17	84	24	8	133	22	174	28	9	233	39	258	52	17	366	10.7	70.5	14.2	4.6	100.0

Source: Livelihood Survey, JICA Study Team (2017)

21.1 How long have you been a member of different types of village organisations/ groups?

3) JFMC

District	Division	No of Respondents Interviewed (a)	JFM					Non JFM					Total					Total (%)				
			1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total
			Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years	
Bilaspur	Bilaspur	60					0					0	0	0	0	0	0	-	-	-	-	0.0
Chamba	Bharmour	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Chamba WL	20					0				2	2	0	0	0	2	2	0.0	0.0	0.0	0.0	100.0
	Pangi	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Kinnaur	40					0					0	0	0	0	0	0	-	-	-	-	0.0
	Sarahan WL	20					0				1	1	0	0	0	1	1	0.0	0.0	0.0	0.0	100.0
Kullu	Kullu	20			1		1					0	0	0	1	0	1	0.0	0.0	100.0	0.0	100.0
	Kullu WL	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Lahaul & Spiti	Spiti(W/L)	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Mandi	Karsog	20			6	1	7					0	0	0	6	1	7	0.0	0.0	85.7	14.3	100.0
	Mandi	20	4				4					0	4	0	0	0	4	100.0	0.0	0.0	0.0	100.0
Shimla	Kotgarh	20	1	1			2															

10) Farmer Producer Organisation

District	Division	No of Respondents Interviewed (a)	JFM					Non JFM					Total					Total (%)				
			1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total
			Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years	
Bilaspur	Bilaspur	60					0					0	0	0	0	0					0.0	
Chamba	Bharmour	20					0					0	0	0	0	0					0.0	
	Chamba WL	20					0					0	0	0	0	0					0.0	
	Pangi	20					0					0	0	0	0	0					0.0	
Kinnaur	Kinnaur	40					0					0	0	0	0	0					0.0	
	Sarahan WL	20					0					0	0	0	0	0					0.0	
Kullu	Kullu	20					0					0	0	0	0	0					0.0	
	Kullu WL	20					0					0	0	0	0	0					0.0	
Lahaul & Spiti	Spiti(W/L)	20					0					0	0	0	0	0					0.0	
Mandi	Karsog	20					0					0	0	0	0	0					0.0	
	Mandi	20					0					0	0	0	0	0					0.0	
Shimla	Kotgarh	20					0					0	0	0	0	0					0.0	
	Rampur	21					0					0	0	0	0	0					0.0	
	Theog	20					0					0	0	0	0	0					0.0	
Total of Territorial		341	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
Kangra	Bainath	3					0					0	0	0	0	0					0.0	
Kullu	Kullu	11					0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Mandi	Mandi	3					0					0	0	0	0	0					0.0	
Kangra	Palampur	1					0					0	0	0	0	0					0.0	
Kullu	Parvati	10					0					0	0	0	0	0					0.0	
Kinnaur	Kinnaur	21					0		3			3	0	3	0	0	3	0.0	100.0	0.0	0.0	100.0
Shimla	Theog	1					0					0	0	0	0	0					0.0	
Solan	Nalagarh	5					0					0	0	0	0	0					0.0	
Shimla	Kotgarh	2					0					0	0	0	0	0					0.0	
Solan	Baddi	2					0					0	0	0	0	0					0.0	
Total of Graziers/ Grassland		59	0	0	0	0	0	0	4	0	0	4	0	4	0	4	0.0	100.0	0.0	0.0	100.0	
Grand Total		400	0	0	0	0	0	0	4	0	0	4	0	4	0	4	0.0	100.0	0.0	0.0	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

21.1 How long have you been a member of different types of village organisations/ groups?

11) Mahila Mandal

District	Division	No of Respondents Interviewed (a)	JFM					Non JFM					Total					Total (%)					
			1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	
			Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		
Bilaspur	Bilaspur	60	1		1	5	7					0	1	0	1	5	7	14.3	0.0	14.3	71.4	100.0	
Chamba	Bharmour	20	1				1					0	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0	
	Chamba WL	20					0	1	2			4	1	2	0	1	4	25.0	50.0	0.0	25.0	100.0	
	Pangi	20	2		1		3					0	2	0	1	0	3	66.7	0.0	33.3	0.0	100.0	
Kinnaur	Kinnaur	40		1	1	1	3	1	2	2		5	1	3	3	1	8	12.5	37.5	37.5	12.5	100.0	
	Sarahan WL	20					0		4		1	5	0	4	0	1	5	0.0	80.0	0.0	20.0	100.0	
Kullu	Kullu	20			1		1		3	2		5	0	3	3	0	6	0.0	50.0	50.0	0.0	100.0	
	Kullu WL	20					0		4	1		5	0	4	1	0	5	0.0	80.0	20.0	0.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20					0	2	7	2		11	2	7	2	0	11	18.2	63.6	18.2	0.0	100.0	
Mandi	Karsog	20					0					0	0	0	0	0					0.0		
	Mandi	20					0				1	1	0	0	0	1	1	0.0	0.0	0.0	100.0	100.0	
Shimla	Kotgarh	20		2			2	2	2	1		5	2	4	1	0	7	28.6	57.1	14.3	0.0	100.0	
	Rampur	21			2	1	3					0	0	0	2	1	3	0.0	0.0	66.7	33.3	100.0	
	Theog	20				1	1					0	0	0	0	1	1	0.0	0.0	0.0	100.0	100.0	
Total of Territorial		341	4	3	6	8	21	6	24	8	3	41	10	27	14	11	62	16.1	43.5	22.6	17.7	100.0	
Kangra	Bainath	3					0		1			1	0	0	1	0	1	0.0	0.0	100.0	0.0	100.0	
Kullu	Kullu	11					0		2			1	3	0	2	0	1	3	0.0	66.7	0.0	33.3	100.0
Mandi	Mandi	3					0					0	0	0	0	0					0.0		
Kangra	Palampur	1					0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0	
Kullu	Parvati	10					0					4	4	0	0	4	4	0.0	0.0	0.0	100.0	100.0	
Kinnaur	Kinnaur	21					0		3	1	7	11	0	3	1	7	11	0.0	27.3	9.1	63.6	100.0	
Shimla	Theog	1					0					0	0	0	0	0	0					0.0	
Solan	Nalagarh	5					0					0	0	0	0	0	0					0.0	
Shimla	Kotgarh	2					0					0	0	0	0	0	0					0.0	
Solan	Baddi	2					0					0	0	0	0	0	0					0.0	
Total of Graziers/ Grassland		59	0	0	0	0	0	0	6	2	12	20	0	6	2	12	20	0.0	30.0	10.0	60.0	100.0	
Grand Total		400	4	3	6	8	21	6	30	10	15	61	10	33	16	23	82	12.2	40.2	19.5	28.0	100.0	

Source: Livelihood Survey, JICA Study Team (2017)

12) Yuvak Mandal

District	Division	No of Respondents Interviewed (a)	JFM					Non JFM					Total					Total (%)				
			1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total	1	2	3	4	Total
			Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years		Not known	>10 years	5-10 years	<5 years	
Bilaspur	Bilaspur	60			2		2				1	1	0	0	2	1	3	0.0	0.0	66.7	33.3	100.0
Chamba	Bharmour	20					0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
	Chamba WL	20					0					0	0	0	0	0					0.0	
	Pangi	20		1			1					0	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Kinnaur	Kinnaur	40					0				1	1	0	0	1	1	0	0	0.0	0.0	100.0	100.0
	Sarahan WL	20					0		3	1		4	0	3	1	0	4	0.0	75.0	25.0	0.0	100.0
Kullu	Kullu	20		1		1	2				2	2	0	1	0	3	4	0.0	25.0	0.0	75.0	100.0
	Kullu WL	20					0			1		1	0	0	1	0	1	0.0	0.0	100.0	0.0	100.0
Lahaul & Spiti	Spiti(W/L)	20					0		3	1		4	0	3	0	1	4	0.0	75.0	0.0	25.0	100.0
Mandi	Karsog	20					0					0	0	0	0	0					0.0	
	Mandi	20		2			2					0	0	2	0	0	2	0.0	100.0	0.0	0.0	100.0
Shimla	Kotgarh	20					0					0	0	0	0	0					0.0	
	Rampur	21		1			1	1				1	2	0	0	0	2	100.0	0.0	0.0	0.0	100.0
	Theog	20					0					0	0	0	0	0					0.0	
Total of Territorial		341	1	4	2	1	8	1	7	2	5	15	2	11	4	6	23	8.7	47.8	17.4	26.1	100.0
Kangra	Bainath	3					0					0	0	0	0	0					0.0	
Kullu	Kullu	11					0				1	1	0	0	0	1	1	0.0	0.0	0.0	100.0	100.0
Mandi	Mandi	3					0					0	0	0	0	0					0.0	
Kangra	Palampur	1					0					0	0	0	0	0					0.0	
Kullu	Parvati	10					0				3	3	0	0	0	3	3	0.0	0.0	0.0	100.0	100.0
Kinnaur	Kinnaur	21					0		6			6	0	6	0	0	6	0.0	100.0	0.0	0.0	100.0
Shimla	Theog	1					0															

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

21. Participation in Community Organisations/ Village Governance (2)

21.2 Who has the membership'

1) Ward Sabha

District	Division	No of Respondents Interviewed (a)	JFM				Total	Non JFM				Total	Total				% to Total				
			1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse	1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse	
Bilaspur	Bilaspur	60	3	1	1	5					0	3	1	1	5	60.0	20.0	20.0	0.0	100.0	
Chamba	Bharmour	20				0				0	0	0	0	0	0	-	-	-	-	0.0	
	Chamba WL	20				0				0	0	0	0	0	0	-	-	-	-	0.0	
	Pangi	20				0				0	0	0	0	0	0	-	-	-	-	0.0	
Kinnaur	Kinnaur	40	3	1		4				0	3	1	0	4	75.0	25.0	0.0	0.0	100.0		
	Sarahan WL	20				0	3	2	1	6	3	2	1	6	50.0	33.3	16.7	0.0	100.0		
Kullu	Kullu	20				0				0	0	0	0	0	-	-	-	-	0.0		
	Kullu WL	20				0				0	0	0	0	0	-	-	-	-	0.0		
Lahaul & Spiti	Spiti(WL)	20				0				1	0	1	0	1	0.0	100.0	0.0	0.0	100.0		
	Karsog	20	3	1		4				0	3	1	0	4	75.0	25.0	0.0	0.0	100.0		
Mandi	Mandi	20				0				0	0	0	0	0	-	-	-	-	0.0		
	Kotgarh	20	2			2	1	1		2	3	1	0	6	75.0	25.0	0.0	0.0	100.0		
Shimla	Rampur	21	1			1				0	1	0	0	1	100.0	0.0	0.0	0.0	100.0		
	Theog	20	3	1		4	1			1	4	1	0	5	80.0	20.0	0.0	0.0	100.0		
Total Territorial		341	15	4	1	0	20	5	4	1	0	10	20	8	2	0	30	66.7	26.7	6.7	0.0
Kangra	Bajinath	3				0	1			1	1	0	0	1	100.0	0.0	0.0	0.0	100.0		
Kullu	Kullu	11				0	3			3	3	0	0	3	100.0	0.0	0.0	0.0	100.0		
Mandi	Mandi	3				0	1	1		2	1	1	0	2	50.0	50.0	0.0	0.0	100.0		
Kangra	Palampur	1				0	1			1	1	0	0	1	100.0	0.0	0.0	0.0	100.0		
Kullu	Parvati	10				0	4			4	4	0	0	4	100.0	0.0	0.0	0.0	100.0		
Kinnaur	Kinnaur	21				0	2			2	2	0	0	2	100.0	0.0	0.0	0.0	100.0		
Shimla	Theog	1				0				0	0	0	0	0	-	-	-	-	0.0		
Solan	Nalagarh	5				0				0	0	0	0	0	-	-	-	-	0.0		
Shimla	Kotgarh	2				0				0	0	0	0	0	-	-	-	-	0.0		
Solan	Baddi	2				0				0	0	0	0	0	-	-	-	-	0.0		
Total of Graziers/ Grassland		59	0	0	0	0	0	12	1	0	0	0	13	12	1	0	13	92.3	7.7	0.0	0.0
Grand Total		400	15	4	1	0	20	17	5	1	0	23	32	9	2	0	43	74.4	20.9	4.7	0.0

Source: Livelihood Survey, JICA Study Team (2017)

21.2 Who has the membership'

2) Gram Sabha

District	Division	No of Respondents Interviewed (a)	JFM				Total	Non JFM				Total	Total				% to Total				
			1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse	1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse	
Bilaspur	Bilaspur	60	20	9	2	8	39	14	4	1	19	34	13	3	8	58	58.6	22.4	5.2	13.8	
Chamba	Bharmour	20	8	1	1	2	12	7	1		9	15	2	1	3	21	71.4	9.5	4.8	14.3	
	Chamba WL	20				0	10	4	3	2	19	10	4	3	2	19	52.6	21.1	15.8	10.5	
	Pangi	20	4	4	2	10	5	3	2	10	9	7	2	2	20	45.0	35.0	10.0	10.0		
Kinnaur	Kinnaur	40	13	3		3	19	10	1	6	18	23	4	1	9	37	62.3	10.8	2.7	24.3	
	Sarahan WL	20				0	13	5	2	4	24	13	5	2	4	24	54.2	20.8	8.3	16.7	
Kullu	Kullu	20	8	1	1	10	4	5	1	11	12	5	2	2	21	57.1	23.8	9.5	9.5		
	Kullu WL	20				0	8	2	3	3	16	8	2	3	3	16	50.0	12.5	18.8	18.8	
Lahaul & Spiti	Spiti(WL)	20				0	11	3	1	5	20	11	3	1	5	20	55.0	15.0	5.0	25.0	
	Karsog	20	5		2	1	8	7	5		12	12	5	2	1	20	60.0	25.0	10.0	5.0	
Mandi	Mandi	20	10	4		14	5	6		11	15	10	0	0	25	60.0	40.0	0.0	0.0		
	Kotgarh	20	9	2		11	7	1	1	10	16	3	1	1	21	76.2	14.3	4.8	4.8		
Shimla	Rampur	21	7	6		13	5	5	2	13	12	11	2	1	26	46.2	42.3	7.7	3.8		
	Theog	20	8	3		11	5	4		9	13	7	0	0	20	65.0	35.0	0.0	0.0		
Total Territorial		341	92	32	8	15	147	111	49	15	201	203	81	23	41	348	58.3	23.3	6.6	11.8	
Kangra	Bajinath	3				0	1		2	3	1	0	2	0	3	33.3	0.0	66.7	0.0		
Kullu	Kullu	11				0	6		1	7	6	0	1	0	7	85.7	0.0	14.3	0.0		
Mandi	Mandi	3				0	1	1		2	1	1	0	0	2	50.0	50.0	0.0	0.0		
Kangra	Palampur	1				0	1			1	1	0	0	0	1	100.0	0.0	0.0	0.0		
Kullu	Parvati	10				0	5	1		6	5	1	0	0	6	83.3	16.7	0.0	0.0		
Kinnaur	Kinnaur	21				0	13	4		17	13	4	0	0	17	76.5	23.5	0.0	0.0		
Shimla	Theog	1				0	0			0	0	0	0	0	0	-	-	-	-		
Solan	Nalagarh	5				0	1			1	1	0	0	0	1	100.0	0.0	0.0	0.0		
Shimla	Kotgarh	2				0				0	0	0	0	0	0	-	-	-	-		
Solan	Baddi	2				0				0	0	0	0	0	0	-	-	-	-		
Total of Graziers/ Grassland		59	0	0	0	0	0	28	6	3	0	37	28	6	3	0	37	75.7	16.2	8.1	0.0
Grand Total		400	92	32	8	15	147	139	55	18	26	238	231	87	26	41	385	60.0	22.6	6.8	10.6

Source: Livelihood Survey, JICA Study Team (2017)

21.2 Who has the membership'

3) JFMC

District	Division	No of Respondents Interviewed (a)	JFM				Total	Non JFM				Total	Total				% to Total			
			1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse	1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse
Bilaspur	Bilaspur	60				0					0	0	0	0	0	-	-	-	-	0.0
Chamba	Bharmour	20				0				0	0	0	0	0	0	-	-	-	-	0.0
	Chamba WL	20				0				0	0	0	0	0	0	-	-	-	-	0.0
	Pangi	20				0				0	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Kinnaur	40				0				0	0	0	0	0	0	-	-	-	-	0.0
	Sarahan WL	20				0	1			1	1	0	0	0	1	100.0	0.0	0.0	0.0	
Kullu	Kullu	20	1			1				0	1	0	0	0	1	100.0	0.0	0.0	0.0	
	Kullu WL	20				0				0	0	0	0	0	0	-	-	-	-	0.0
Lahaul & Spiti	Spiti(WL)	20				0				0	0	0	0	0	0	-	-	-	-	0.0
	Karsog	20	4	2	1	7				0	4	2	1	0	7	57.1	28.6	14.3	0.0	
Mandi	Mandi	20				0				0	0	0	0	0	0	-	-	-	-	0.0
	Kotgarh	20	2			2				0	2	0	0	0	2	100.0	0.0	0.0	0.0	
Shimla	Rampur	21				0				0	0	0	0	0	0	-	-	-	-	0.0
	Theog	20				0				0	0	0	0	0	0	-	-	-	-	0.0
Total Territorial																				

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

21.3 Who goes to the meeting?

3) JFMC

District	Division	No of Respondents Interviewed (a)	JFM				Total	Non JFM				Total	Total				% to Total					
			1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse	1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		
Bilaspur	Bilaspur	60					0					0	0	0	0	0	0	-	-	-	-	0.0
	Bharmour	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Chamba	Chamba WL	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Pangi	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Kinnaur	40					0					0	0	0	0	0	0	-	-	-	-	0.0
	Sarahan WL	20					0	1				1	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0
Kullu	Kullu	20	1				1					0	1	0	0	0	1	100.0	0.0	0.0	0.0	100.0
	Kullu WL	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Lahaul & Spiti	Spiti(WL)	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Mandi	Karsog	20	4	1	2		7					0	4	1	2	0	7	57.1	14.3	28.6	0.0	100.0
	Mandi	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Kotgarh	20	2				2					0	2	0	0	0	2	100.0	0.0	0.0	0.0	100.0
Shimla	Rampur	21					0					0	0	0	0	0	0	-	-	-	-	0.0
	Theog	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Total of Territorial		341	7	1	2	0	10	1	0	0	0	1	8	1	2	0	11	72.7	9.1	18.2	0.0	100.0
Kangra	Bainath	3					0					0	0	0	0	0	0	-	-	-	-	0.0
Kullu	Kullu	11					0					0	0	0	0	0	0	-	-	-	-	0.0
Mandi	Mandi	3					0					0	0	0	0	0	0	-	-	-	-	0.0
Kangra	Palampur	1					0					0	0	0	0	0	0	-	-	-	-	0.0
Kullu	Parvati	10					0					0	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Kinnaur	21					0					0	0	0	0	0	0	-	-	-	-	0.0
Shimla	Theog	1					0					0	0	0	0	0	0	-	-	-	-	0.0
Solan	Nalagarh	5					0					0	0	0	0	0	0	-	-	-	-	0.0
Shimla	Kotgarh	2					0					0	0	0	0	0	0	-	-	-	-	0.0
Solan	Baddi	2					0					0	0	0	0	0	0	-	-	-	-	0.0
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	0.0
Grand Total		400	7	1	2	0	10	1	0	0	0	1	8	1	2	0	11	72.7	9.1	18.2	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

21.3 Who goes to the meeting?

4) SHG (Savings & Credit)

District	Division	No of Respondents Interviewed (a)	JFM				Total	Non JFM				Total	Total				% to Total					
			1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse	1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		
Bilaspur	Bilaspur	60		1			1					0	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
	Bharmour	20					0	1	1			2	1	1	0	0	2	50.0	50.0	0.0	0.0	100.0
Chamba	Chamba WL	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Pangi	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Kinnaur	40					0					0	0	0	0	0	0	-	-	-	-	0.0
	Sarahan WL	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Kullu	Kullu	20					0		1			0	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
	Kullu WL	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Lahaul & Spiti	Spiti(WL)	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Mandi	Karsog	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Mandi	20					0	1				1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
	Kotgarh	20					0	2				2	0	2	0	0	2	0.0	100.0	0.0	0.0	100.0
Shimla	Rampur	21					0					0	0	0	0	0	0	-	-	-	-	0.0
	Theog	20					0	2				2	0	2	0	0	2	0.0	100.0	0.0	0.0	100.0
Total of Territorial		341	0	1	0	0	1	1	7	0	0	8	1	8	0	0	9	11.1	88.9	0.0	0.0	100.0
Kangra	Bainath	3					0					0	0	0	0	0	0	-	-	-	-	0.0
Kullu	Kullu	11					0					0	0	0	0	0	0	-	-	-	-	0.0
Mandi	Mandi	3					0					0	0	0	0	0	0	-	-	-	-	0.0
Kangra	Palampur	1					0					0	0	0	0	0	0	-	-	-	-	0.0
Kullu	Parvati	10					0					0	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Kinnaur	21					0		3			3	0	3	0	0	3	0.0	100.0	0.0	0.0	100.0
Shimla	Theog	1					0					0	0	0	0	0	0	-	-	-	-	0.0
Solan	Nalagarh	5					0					0	0	0	0	0	0	-	-	-	-	0.0
Shimla	Kotgarh	2					0					0	0	0	0	0	0	-	-	-	-	0.0
Solan	Baddi	2					0					0	0	0	0	0	0	-	-	-	-	0.0
Total of Graziers/ Grassland		59	0	0	0	0	0	0	3	0	0	3	0	3	0	0	3	0.0	100.0	0.0	0.0	100.0
Grand Total		400	0	1	0	0	1	1	10	0	0	11	1	11	0	0	12	8.3	91.7	0.0	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

21.3 Who goes to the meeting?

5) SHG (IGA)

District	Division	No of Respondents Interviewed (a)	JFM				Total	Non JFM				Total	Total				% to Total					
			1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse	1 Male HH	2 Female HH	3 Spouse	4 Both Head of HH and Spouse		
Bilaspur	Bilaspur	60					0					0	0	0	0	0	0	-	-	-	-	0.0
	Bharmour	20	1				1		1			1	1	1	0	0	2	50.0	50.0	0.0	0.0	100.0
Chamba	Chamba WL	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Pangi	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Kinnaur	40					0					0	0	0	0	0	0	-	-	-	-	0.0
	Sarahan WL	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Kullu	Kullu	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Kullu WL	20					0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Lahaul & Spiti	Spiti(WL)	20					0		1			1	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Mandi	Karsog	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Mandi	20					0					0	0	0	0	0	0	-	-	-	-	0.0
	Kotgarh	20	1				1					0	0	1	0	0	1	0.0	100.0	0.0	0.0	100.0
Shimla	Rampur	21					0					0	0	0	0	0	0	-	-	-	-	0.0
	Theog	20					0					0	0	0	0	0	0	-	-	-	-	0.0
Total of Territorial		341	1	1	0	0	2	0	3	0	0	3	1	4	0	0	5	20.0	80.0	0.0	0.0	100.0
Kangra	Bainath	3					0					0	0	0	0	0	0	-	-	-	-	0.0
Kullu	Kullu	11					0					0	0	0	0	0	0	-	-	-	-	0.0
Mandi	Mandi	3					0					0	0	0	0	0	0	-	-	-	-	0.0
Kangra	Palampur	1					0					0	0	0	0	0	0	-	-	-	-	0.0
Kullu	Parvati	10					0					0	0	0	0	0	0	-	-	-	-	0.0
Kinnaur	Kinnaur	21					0		2			2	0	2	0	0	2	0.0	100.0	0.0	0.0	100.0
Shimla	Theog	1					0					0	0	0	0	0	0	-	-	-	-	0.0
Solan	Nalagarh	5					0					0	0	0	0	0	0	-	-	-	-	0.0
Shimla	Kotgarh	2																				

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

21.4 Advantages of being a member

2) Gram Sabha

District	Division	No of Respondents Interviewed (a)	JFM						Total	Non JFM						Total	Total									
			1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)		1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)		1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)	Total			
Bilaspur	Bilaspur	60	29					2	31	10							7	17	39	0	0	0	0	0	9	48
	Bharmour	20	7		1			1	2	11	6						2	8	13	0	1	0	0	1	4	19
Chamba	Chamba WL	20							0	15							4	19	15	0	0	0	0	0	4	19
	Pangi	20	9						2	11	8						3	11	17	0	0	0	0	0	5	22
Kinnaur	Kinnaur	40	15					1	1	17	13	1	1				1	16	28	11	1	0	0	1	2	33
	Sarahan WL	20							0	11							3	14	11	0	0	0	0	0	3	14
Kullu	Kullu	20	5						4	9	9						2	11	14	0	0	0	0	0	6	20
	Kullu WL	20							0	13		1					4	18	13	0	1	0	0	0	4	18
Lahaul & Spiti	Spiti(W/L)	20							0	16							2	18	16	0	0	0	0	0	2	18
Mandi	Karsog	20	5						1	6	3						3	8	0	0	0	0	0	0	1	9
	Mandi	20	9						9	4							4	13	0	0	0	0	0	0	9	13
	Kotgah	20	5					2	1	8	5						4	9	10	0	0	0	0	2	5	17
Shimla	Rampur	21	6						1	7	6						1	7	12	0	0	0	0	0	2	14
	Theog	20	9						1	10	3						3	12	0	0	0	0	0	0	1	13
Total of Territorial		341	99	0	1	0	4	15	119	122	1	2	0	0	0	33	158	221	1	3	0	0	0	4	48	277
Kangra	Bajinath	3							0	1							1	1	0	0	0	0	0	0	0	1
Kullu	Kullu	11							0	4							4	4	0	0	0	0	0	0	0	4
Mandi	Mandi	3							0	2							2	2	0	0	0	0	0	0	0	2
Kangra	Palampur	1							0	0							0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10							0	1		3					4	1	0	3	0	0	0	0	0	4
Kinnaur	Kinnaur	21							0	17	1	5					26	17	1	5	0	0	0	3	0	26
Shimla	Theog	1							0								0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5							0								0	0	0	0	0	0	0	0	0	0
Shimla	Nalagarh	5							0								0	0	0	0	0	0	0	0	0	0
Shimla	Kotgah	2							0								2	2	0	0	0	0	0	0	0	2
Solan	Baddi	2							0	2							2	2	0	0	0	0	0	0	0	2
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	27	1	8	0	3	0	3	39	27	1	8	0	0	3	0	39	
Grand Total		400	99	0	1	0	4	15	119	149	2	10	0	3	33	197	248	2	11	0	0	7	48	316		

Source: Livelihood Survey, JICA Study Team (2017)

21.4 Advantages of being a member

3) JFMC

District	Division	No of Respondents Interviewed (a)	JFM						Total	Non JFM						Total	Total									
			1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)		1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)		1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)	Total			
Bilaspur	Bilaspur	60						0									0	0	0	0	0	0	0	0	0	0
	Bharmour	20						0									0	0	0	0	0	0	0	0	0	0
Chamba	Chamba WL	20						0		2	1	1					4	2	11	1	0	0	0	0	4	4
	Pangi	20						0									0	0	0	0	0	0	0	0	0	0
Kinnaur	Kinnaur	40						0									0	0	0	0	0	0	0	0	0	0
	Sarahan WL	20						0		1							1	2	1	0	0	0	0	0	1	2
Kullu	Kullu	20						0									0	0	0	0	0	0	0	0	0	0
	Kullu WL	20						0									0	0	0	0	0	0	0	0	0	0
Lahaul & Spiti	Spiti(W/L)	20						0									0	0	0	0	0	0	0	0	0	0
Mandi	Karsog	20	3					1	4								0	3	0	0	0	0	0	0	1	4
	Mandi	20						0									0	0	0	0	0	0	0	0	0	0
	Kotgah	20	2					2									0	2	0	0	0	0	0	0	0	2
Shimla	Rampur	21						0									0	0	0	0	0	0	0	0	0	0
	Theog	20						0									0	0	0	0	0	0	0	0	0	0
Total of Territorial		341	5	0	0	0	0	1	6	3	1	1	0	0	0	1	6	8	1	1	0	0	0	2	12	
Kangra	Bajinath	3						0									0	0	0	0	0	0	0	0	0	0
Kullu	Kullu	11						0									0	0	0	0	0	0	0	0	0	0
Mandi	Mandi	3						0									0	0	0	0	0	0	0	0	0	0
Kangra	Palampur	1						0									0	0	0	0	0	0	0	0	0	0
Kullu	Parvati	10						0									0	0	0	0	0	0	0	0	0	0
Kinnaur	Kinnaur	21						0									0	0	0	0	0	0	0	0	0	0
Shimla	Theog	1						0									0	0	0	0	0	0	0	0	0	0
Solan	Nalagarh	5						0									0	0	0	0	0	0	0	0	0	0
Shimla	Kotgah	2						0									0	0	0	0	0	0	0	0	0	0
Solan	Baddi	2						0									0	0	0	0	0	0	0	0	0	0
Total of Graziers/ Grassland		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total		400	5	0	0	0	0	1	6	3	1	1	0	0	0	1	6	8	1	1	0	0	2	12		

Source: Livelihood Survey, JICA Study Team (2017)

21.4 Advantages of being a member

4) SHG (Savings & Credit)

District	Division	No of Respondents Interviewed (a)	JFM						Total	Non JFM						Total	Total									
			1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)		1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)		1 Learn new skills and knowledge	2 Save money	3 Meet friends/ neighbours	4 Better Marketing	5 Better access to loan	6 Others (unspecified reasons)	Total			
Bilaspur	Bilaspur	60	1	1				2									0	1	1	0	0	0	0	0	0	2
	Bharmour	20						0		1	1						1	3	11	0	0	0	0	1	0	3
Chamba	Chamba WL	20																								

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

21.4 Advantages of being a member
5) SHG (IGA)

District	Division	No of Respondents Interviewed (a)	JFM						Total	Non JFM						Total	Total					
			1	2	3	4	5	6		1	2	3	4	5	6		1	2	3	4	5	6
			Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)	Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)	Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)		
Bilaspur	Bilaspur	60							0						0	0	0	0	0	0	0	
	Bharmour	20	1						1						0	0	0	0	0	0	1	
Chamba	Chamba WL	20							0						0	0	0	0	0	0	0	
	Pangi	20							0						0	0	0	0	0	0	0	
Kinnaur	Kinnaur	40							0						0	0	0	0	0	0	0	
	Sarahan WL	20							0						0	0	0	0	0	0	0	
Kullu	Kullu	20							0						0	0	0	0	0	0	0	
	Kullu WL	20							0	1					1	1	0	0	0	0	1	
Lahaul & Spiti	Spiti(W/L)	20							0	1					1	1	0	0	0	0	1	
Mandi	Karsog	20							0						0	0	0	0	0	0	0	
	Mandi	20							0						0	0	0	0	0	0	0	
	Kotgarh	20	1						1						0	0	1	0	0	0	1	
Shimla	Rampur	21							0						0	0	0	0	0	0	0	
	Theog	20							0						0	0	0	0	0	0	0	
Total of Territorial		341	1	1	0	0	0	0	2	2	0	0	0	0	2	3	1	0	0	0	4	
Kangra	Bajnath	3							0						0	0	0	0	0	0	0	
Kullu	Kullu	11							0	1					0	0	0	0	0	0	0	
Mandi	Mandi	3							0						0	0	0	0	0	0	0	
Kangra	Palampur	1							0						0	0	0	0	0	0	0	
Kullu	Parvati	10							0	1					1	1	0	0	0	0	1	
Kinnaur	Kinnaur	21							0	8	6	2	1		17	8	6	2	1	0	17	
Shimla	Theog	1							0						0	0	0	0	0	0	0	
Solan	Nagarh	5							0						0	0	0	0	0	0	0	
Shimla	Kotgarh	2							0						0	0	0	0	0	0	0	
Solan	Badli	2							0						0	0	0	0	0	0	0	
Total of Graziers/Grassland		59	0	0	0	0	0	0	0	10	8	2	1	0	21	10	8	2	1	0	21	
Grand Total		400	1	1	0	0	0	0	2	2	2	0	0	0	4	3	3	0	0	0	6	

Source: Livelihood Survey, JICA Study Team (2017)

21.4 Advantages of being a member

6) Mahila Mandal

District	Division	No of Respondents Interviewed (a)	JFM						Total	Non JFM						Total	Total					
			1	2	3	4	5	6		1	2	3	4	5	6		1	2	3	4	5	6
			Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)	Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)	Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)		
Bilaspur	Bilaspur	60	1	4	1			3	9						0	1	4	1	0	0	3	9
	Bharmour	20	1	1					2						0	1	1	0	0	0	0	2
Chamba	Chamba WL	20							0	3	1	1			5	3	1	1	0	0	0	5
	Pangi	20	3	2					5						0	3	2	0	0	0	0	5
Kinnaur	Kinnaur	40	3	2	1				4	2	1				3	5	1	1	0	0	0	7
	Sarahan WL	20							0	3	2				5	3	0	2	0	0	0	5
Kullu	Kullu	20	1		1				2	5		2			7	6	0	3	0	0	0	9
	Kullu WL	20							0	4	1	2			7	4	1	2	0	0	0	7
Lahaul & Spiti	Spiti(W/L)	20							0	11		4			15	11	0	4	0	0	0	15
Mandi	Karsog	20							0						0	0	0	0	0	0	0	
	Mandi	20							0	1		1			2	1	0	1	0	0	0	2
	Kotgarh	20	1	1					2	2			2		4	3	1	0	2	0	0	6
Shimla	Rampur	21	2	1					3						0	2	1	0	0	0	0	3
	Theog	20	1		1				2						0	1	0	1	0	0	0	2
Total of Territorial		341	13	9	4	0	0	3	29	31	3	12	2	0	48	44	12	16	2	0	3	77
Kangra	Bajnath	3							0						0	0	0	0	0	0	0	0
Kullu	Kullu	11							0	1	1				2	1	1	0	0	0	0	2
Mandi	Mandi	3							0						0	0	0	0	0	0	0	0
Kangra	Palampur	1							0		1				1	0	1	0	0	0	0	1
Kullu	Parvati	10							0	1					1	1	0	0	0	0	0	1
Kinnaur	Kinnaur	21							0	8	6	2	1		17	8	6	2	1	0	0	17
Shimla	Theog	1							0						0	0	0	0	0	0	0	
Solan	Nagarh	5							0						0	0	0	0	0	0	0	
Shimla	Kotgarh	2							0						0	0	0	0	0	0	0	
Solan	Badli	2							0						0	0	0	0	0	0	0	
Total of Graziers/Grassland		59	0	0	0	0	0	0	0	10	8	2	1	0	21	10	8	2	1	0	0	21
Grand Total		400	13	9	4	0	0	3	29	41	11	14	3	0	69	54	20	18	3	0	3	98

Source: Livelihood Survey, JICA Study Team (2017)

21.4 Advantages of being a member

7) Yuvak Mandal

District	Division	No of Respondents Interviewed (a)	JFM						Total	Non JFM						Total	Total					
			1	2	3	4	5	6		1	2	3	4	5	6		1	2	3	4	5	6
			Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)	Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)	Learn new skills and knowledge	Save money	Meet friends/ neighbours	Better Marketing	Better access to loan	Others (unspecified reasons)		
Bilaspur	Bilaspur	60	1		1			1	3	1				1	2							5
	Bharmour	20							0	1					1							1
Chamba	Chamba WL	20							0						0							0
	Pangi	20							0						0							0
Kinnaur	Kinnaur	40							0	1					1							1
	Sarahan WL	20							0	2	1				3							3
Kullu	Kullu	20	2		1				3	2					2							5
	Kullu WL	20							0						0							0
Lahaul & Spiti	Spiti(W/L)	20							0	3		2			5							5
Mandi	Karsog	20							0						0							0
	Mandi	20							0	1					0							1
	Kotgarh	20							0						0							0
Shimla	Rampur	21							0	1					1							1
	Theog	20							0						0							0
Total of Territorial		341																				

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

21. Participation in Community Organisations/ Village Governance (5)

21.5 Frequency of Attending Meetings

1) Ward Sabha

District	Division	No of Respondents Interviewed (a)	JFM				Non JFM				Total				Total (%)			
			1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total
Bilaspur	Bilaspur	60	1	3		4		1		1	1	4	0	5	20.0	80.0	0.0	100.0
Chamba	Bharmour	20				0				0	0	0	0	0	-	-	-	0.0
	Chamba WL	20				0				0	0	0	0	0	-	-	-	0.0
	Pangi	20				0				0	0	0	0	0	-	-	-	0.0
Kinnaur	Kinnaur	40	2	2		4				0	2	2	0	4	50.0	50.0	0.0	100.0
	Sarahan WL	20				0	1	2	3	1	2	0	3	33.3	66.7	0.0	100.0	
Kullu	Kullu	20				0				0	0	0	0	0	-	-	-	0.0
	Kullu WL	20				0				0	0	0	0	0	-	-	-	0.0
Lahaul & Spiti	Spiti(WL)	20				0	1		1	1	0	0	1	100.0	0.0	0.0	100.0	
	Karsog	20	2	1	1	4			0	2	1	1	4	50.0	25.0	25.0	100.0	
Mandi	Mandi	20				0				0	0	0	0	0	-	-	-	0.0
	Kotgarh	20		2		2	1	1	2	1	3	0	4	25.0	75.0	0.0	100.0	
Shimla	Rampur	21				0				0	0	0	0	0	-	-	-	0.0
	Theog	20		3		3		1	1	0	4	0	4	0.0	100.0	0.0	100.0	
Total of Territorial		341	5	11	1	17	3	5	0	8	8	16	1	25	32.0	64.0	4.0	100.0
Kangra	Bajinath	3				0		1	1	0	1	0	1	0.0	100.0	0.0	100.0	
Kullu	Kullu	11				0		3	3	0	3	0	3	0.0	100.0	0.0	100.0	
Mandi	Mandi	3				0		2	2	0	2	0	2	0.0	100.0	0.0	100.0	
Kangra	Palampur	1				0		1	1	0	1	0	1	0.0	100.0	0.0	100.0	
Kullu	Parvati	10				0	2	3	5	2	3	0	5	40.0	60.0	0.0	100.0	
Kinnaur	Kinnaur	21				0	8	1	9	8	1	0	9	88.9	11.1	0.0	100.0	
Shimla	Theog	1				0			0	0	0	0	0	-	-	-	0.0	
Solan	Nalagarh	5				0			2	2	0	0	2	0.0	0.0	100.0	100.0	
Shimla	Kotgarh	2				0			0	0	0	0	0	-	-	-	0.0	
Solan	Baddi	2				0			2	0	2	0	2	0.0	100.0	0.0	100.0	
Total of Graziers/ Grasslan		59	0	0	0	0	10	13	2	25	10	13	2	25	40.0	52.0	8.0	100.0
Grand Total		400	5	11	1	17	13	18	2	33	18	29	3	50	36.0	58.0	6.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

21.5 Frequency of Attending Meetings

2) Gram Sabha

District	Division	No of Respondents Interviewed (a)	JFM				Non JFM				Total				Total (%)			
			1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total
Bilaspur	Bilaspur	60	1	34		35		17	2	19	1	51	2	54	1.9	94.4	3.7	100.0
Chamba	Bharmour	20	5	6		11	2	7	9	7	13	0	20	35.0	65.0	0.0	100.0	
	Chamba WL	20				0	6	14	20	6	14	0	20	30.0	70.0	0.0	100.0	
	Pangi	20	2	8		10	2	8	10	4	16	0	20	20.0	80.0	0.0	100.0	
Kinnaur	Kinnaur	40	12	7		19	9	10	19	21	17	0	38	55.3	44.7	0.0	100.0	
	Sarahan WL	20				0	7	13	20	7	13	0	20	35.0	65.0	0.0	100.0	
Kullu	Kullu	20		10		10	5	5	10	5	15	0	20	25.0	75.0	0.0	100.0	
	Kullu WL	20				0	4	12	16	4	12	0	16	25.0	75.0	0.0	100.0	
Lahaul & Spiti	Spiti(WL)	20				0	7	12	1	20	7	12	1	20	35.0	60.0	5.0	100.0
	Karsog	20		8		8	1	8	1	10	1	16	1	18	5.6	88.9	5.6	100.0
Mandi	Mandi	20		10		10	3	6	9	3	16	0	19	15.8	84.2	0.0	100.0	
	Kotgarh	20	2	8		10	1	9	10	3	17	0	20	15.0	85.0	0.0	100.0	
Shimla	Rampur	21	4	6		10	3	5	2	10	7	11	2	20	35.0	55.0	10.0	100.0
	Theog	20		11		11		9	9	0	20	0	20	0.0	100.0	0.0	100.0	
Total of Territorial		341	26	108	0	134	50	135	6	191	76	243	6	325	23.4	74.8	1.8	100.0
Kangra	Bajinath	3				0	1	2	3	1	2	0	3	33.3	66.7	0.0	100.0	
Kullu	Kullu	11				0	1	6	7	1	6	0	7	14.3	85.7	0.0	100.0	
Mandi	Mandi	3				0		2	2	0	2	0	2	0.0	100.0	0.0	100.0	
Kangra	Palampur	1				0		1	1	0	1	0	1	0.0	100.0	0.0	100.0	
Kullu	Parvati	10				0	1	7	8	1	7	0	8	12.5	87.5	0.0	100.0	
Kinnaur	Kinnaur	21				0	16	4	20	16	4	0	20	80.0	20.0	0.0	100.0	
Shimla	Theog	1				0			0	0	0	0	0	-	-	-	0.0	
Solan	Nalagarh	5				0		1	2	3	0	1	2	3	0.0	33.3	66.7	100.0
Shimla	Kotgarh	2				0			0	0	0	0	0	-	-	-	0.0	
Solan	Baddi	2				0		2	2	0	2	0	2	0.0	100.0	0.0	100.0	
Total of Graziers/ Grasslan		59	0	0	0	0	19	25	2	46	19	25	2	46	41.3	54.3	4.3	100.0
Grand Total		400	26	108	0	134	69	160	8	237	95	268	8	371	25.6	72.2	2.2	100.0

Source: Livelihood Survey, JICA Study Team (2017)

21.5 Frequency of Attending Meetings

3) JFMC

District	Division	No of Respondents Interviewed (a)	JFM				Non JFM				Total				Total (%)			
			1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total	1 Regularly	2 Sometimes	3 Never	Total
Bilaspur	Bilaspur	60				0				0	0	0	0	0	-	-	-	0.0
Chamba	Bharmour	20				0				0	0	0	0	0	-	-	-	0.0
	Chamba WL	20				0	1		1	1	0	0	1	100.0	0.0	0.0	100.0	
	Pangi	20				0				0	0	0	0	0	-	-	-	0.0
Kinnaur	Kinnaur	40				0				0	0	0	0	0	-	-	-	0.0
	Sarahan WL	20				0		1	1	0	1	0	1	0.0	100.0	0.0	100.0	
Kullu	Kullu	20		1		1				0	0	1	0	1	0.0	100.0	0.0	100.0
	Kullu WL	20				0				0	0	0	0	0	-	-	-	0.0
Lahaul & Spiti	Spiti(WL)	20				0				0	0	0	0	0	-	-	-	0.0
	Karsog	20	5	2		7			7	5	2	0	7	71.4	28.6	0.0	100.0	
Mandi	Mandi	20				0				0	0	0	0	0	-	-	-	0.0
	Kotgarh	20	1	1		2			0	1	1	0	2	50.0	50.0	0.0	100.0	
Shimla	Rampur	21				0				0	0	0	0	0	-	-	-	0.0
	Theog	20				0				0	0	0	0	0	-	-	-	0.0
Total of Territorial		341	6	4	0	10	1	1	0	2	7	5	0	12	58.3	41.7	0.0	100.0
Kangra	Bajinath	3				0				0	0	0	0	0	-	-	-	0.0
Kullu	Kullu	11				0				0	0	0	0	0	-	-	-	0.0
Mandi	Mandi	3				0				0	0	0	0	0	-	-	-	0.0
Kangra	Palampur	1				0				0	0	0	0	0	-	-	-	0.0
Kullu	Parvati	10				0				0	0	0	0	0	-	-	-	0.0
Kinnaur	Kinnaur	21				0				0	0	0	0	0	-	-	-	0.0
Shimla	Theog	1				0				0	0	0	0	0				

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

21.5 Frequency of Attending Meetings

4) SHG (Savings & Credit)

District	Division	No of Respondents Interviewed (a)	JFM				Non JFM				Total				Total (%)			
			1	2	3	Total	1	2	3	Total	1	2	3	Total	Regularly	Sometimes	Never	Total
Bilaspur	Bilaspur	60	1			1			0	1	0	0	1	100.0	0.0	0.0	100.0	
	Bharmour	20				0			2	2	0	0	2	100.0	0.0	0.0	100.0	
Chamba	Chamba WL	20				0			0	0	0	0	-	-	-	-	0.0	
	Pang	20				0			0	0	0	0	-	-	-	-	0.0	
Kinnaur	Kinnaur	40	2			2			0	2	0	0	2	100.0	0.0	0.0	100.0	
	Sarahan WL	20				0			1	1	0	0	1	100.0	0.0	0.0	100.0	
Kullu	Kullu	20				0			1	1	0	0	1	100.0	0.0	0.0	100.0	
	Kullu WL	20				0			0	0	0	0	-	-	-	-	0.0	
Lahaul & Spiti	Spiti(W/L)	20				0			0	0	0	0	-	-	-	-	0.0	
Mandi	Karsog	20				0			0	0	0	0	-	-	-	-	0.0	
	Mandi	20				0			1	1	0	0	1	100.0	0.0	0.0	100.0	
	Kotgarh	20				0			2	2	0	0	2	100.0	0.0	0.0	100.0	
Shimla	Rampur	21				0			0	0	0	0	-	-	-	-	0.0	
	Theog	20				0			1	1	0	0	2	50.0	50.0	0.0	100.0	
Total of Territorial		341	3	0	0	3	8	1	0	9	11	1	0	12	91.7	8.3	0.0	100.0
Kangra	Bajinath	3				0			0	0	0	0	-	-	-	-	0.0	
Kullu	Kullu	11				0			0	0	0	0	-	-	-	-	0.0	
Mandi	Mandi	3				0			0	0	0	0	-	-	-	-	0.0	
Kangra	Palampur	1				0			0	0	0	0	-	-	-	-	0.0	
Kullu	Parvati	10				0			0	0	0	0	-	-	-	-	0.0	
Kinnaur	Kinnaur	21				0			3	3	0	0	3	100.0	0.0	0.0	100.0	
Shimla	Theog	1				0			0	0	0	0	-	-	-	-	0.0	
Solan	Nalagarh	5				0			0	0	0	0	-	-	-	-	0.0	
Shimla	Kotgarh	2				0			0	0	0	0	-	-	-	-	0.0	
Solan	Baddi	2				0			0	0	0	0	-	-	-	-	0.0	
Total of Graziers/ Grasslan		59	0	0	0	0	3	0	0	3	3	0	0	3	100.0	0.0	0.0	100.0
Grand Total		400	3	0	0	3	11	1	0	12	14	1	0	15	93.3	6.7	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

21.5 Frequency of Attending Meetings

5) SHG (IGA)

District	Division	No of Respondents Interviewed (a)	JFM				Non JFM				Total				Total (%)			
			1	2	3	Total	1	2	3	Total	1	2	3	Total	Regularly	Sometimes	Never	Total
Bilaspur	Bilaspur	60				0			0	0	0	0	0	-	-	-	-	0.0
	Bharmour	20	1			1			1	2	0	0	2	100.0	0.0	0.0	100.0	
Chamba	Chamba WL	20				0			0	0	0	0	-	-	-	-	0.0	
	Pang	20				0			0	0	0	0	-	-	-	-	0.0	
Kinnaur	Kinnaur	40				0			0	0	0	0	-	-	-	-	0.0	
	Sarahan WL	20				0			1	1	0	0	1	100.0	0.0	0.0	100.0	
Kullu	Kullu	20				0			0	0	0	0	-	-	-	-	0.0	
	Kullu WL	20	1			1			0	1	0	0	1	100.0	0.0	0.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20	1			1			0	1	0	0	1	100.0	0.0	0.0	100.0	
Mandi	Karsog	20				0			0	0	0	0	-	-	-	-	0.0	
	Mandi	20				0			0	0	0	0	-	-	-	-	0.0	
	Kotgarh	20	1			1			0	1	0	0	1	100.0	0.0	0.0	100.0	
Shimla	Rampur	21				0			0	0	0	0	-	-	-	-	0.0	
	Theog	20				0			0	0	0	0	-	-	-	-	0.0	
Total of Territorial		341	4	0	0	4	2	0	0	2	6	0	0	6	100.0	0.0	0.0	100.0
Kangra	Bajinath	3				0			0	0	0	0	-	-	-	-	0.0	
Kullu	Kullu	11				0			0	0	0	0	-	-	-	-	0.0	
Mandi	Mandi	3				0			0	0	0	0	-	-	-	-	0.0	
Kangra	Palampur	1				0			0	0	0	0	-	-	-	-	0.0	
Kullu	Parvati	10				0			0	0	0	0	-	-	-	-	0.0	
Kinnaur	Kinnaur	21				0			2	2	0	0	2	100.0	0.0	0.0	100.0	
Shimla	Theog	1				0			0	0	0	0	-	-	-	-	0.0	
Solan	Nalagarh	5				0			0	0	0	0	-	-	-	-	0.0	
Shimla	Kotgarh	2				0			0	0	0	0	-	-	-	-	0.0	
Solan	Baddi	2				0			0	0	0	0	-	-	-	-	0.0	
Total of Graziers/ Grasslan		59	0	0	0	0	2	0	0	2	2	0	0	2	100.0	0.0	0.0	100.0
Grand Total		400	4	0	0	4	4	0	0	4	8	0	0	8	100.0	0.0	0.0	100.0

Source: Livelihood Survey, JICA Study Team (2017)

21.5 Frequency of Attending Meetings

6) Mahila Mandal

District	Division	No of Respondents Interviewed (a)	JFM				Non JFM				Total				Total (%)			
			1	2	3	Total	1	2	3	Total	1	2	3	Total	Regularly	Sometimes	Never	Total
Bilaspur	Bilaspur	60	4	4		8			0	4	4	0	8	50.0	50.0	0.0	100.0	
	Bharmour	20	1			1			0	1	0	0	1	100.0	0.0	0.0	100.0	
Chamba	Chamba WL	20				0			4	4	0	0	4	100.0	0.0	0.0	100.0	
	Pang	20	3			3			0	3	0	0	3	100.0	0.0	0.0	100.0	
Kinnaur	Kinnaur	40	3			3			4	7	1	0	8	87.5	12.5	0.0	100.0	
	Sarahan WL	20				0			3	3	2	0	5	60.0	40.0	0.0	100.0	
Kullu	Kullu	20	1			1			5	6	0	0	6	100.0	0.0	0.0	100.0	
	Kullu WL	20				0			6	6	0	0	6	100.0	0.0	0.0	100.0	
Lahaul & Spiti	Spiti(W/L)	20				0			9	9	2	0	11	81.8	18.2	0.0	100.0	
Mandi	Karsog	20				0			0	0	0	0	-	-	-	-	0.0	
	Mandi	20				0			1	1	0	0	1	100.0	0.0	0.0	100.0	
	Kotgarh	20				2			2	2	3	0	7	28.6	71.4	0.0	100.0	
Shimla	Rampur	21	2	1		3			0	3	11	0	3	66.7	33.3	0.0	100.0	
	Theog	20	1			1			0	1	0	0	1	100.0	0.0	0.0	100.0	
Total of Territorial		341	15	7	0	22	34	8	0	42	49	15	0	64	76.6	23.4	0.0	100.0
Kangra	Bajinath	3				0			2	2	0	0	2	100.0	0.0	0.0	100.0	
Kullu	Kullu	11				0			2	2	1	0	3	66.7	33.3	0.0	100.0	
Mandi	Mandi	3				0			0	0	0	0	-	-	-	-	0.0	
Kangra	Palampur	1				0			1	1	0	0	1	100.0	0.0	0.0	100.0	
Kullu	Parvati	10				0			0	0	0	0	-	-	-	-	0.0	
Kinnaur	Kinnaur	21				0			8	8	3	0	11	72.7	27.3	0.0	100.0	
Shimla	Theog	1				0			0	0	0	0	-	-	-	-	0.0	
Solan	Nalagarh	5				0			0	0	0	0	-	-	-	-	0.0	
Shimla	Kotgarh	2				0			0	0	0	0	-	-	-	-	0.0	
Solan	Baddi	2				0			0	0	0	0	-	-	-	-	0.0	
Total of Graziers/ Grasslan		59	0	0	0	0	13	4	0	17	13	4	0	17	76.5	23.5	0.0	

Attachment II.2.7.2 Seasonal Calendars

i) Sarog Village, Bilaspur Forest Division

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Snow	/											/
Income				Peas/ Beans		Capsicum/ Cabbage	Beans		Apple			
Expenditure			School	/								
Orchards (spending)	↑ Cuttings	↑ Cuttings										↑ Cuttings
Subzi (spending)			↑ Cuttings	↑ Cuttings	↑ Cuttings							
Work load (W)			White wash the house							Grass + Fuelwood		
Work load (G)	← Cutting, spray fertilisers →							← Harvesting →				
Nepali Labourers	/							/				
MGNERGA (G)											/	
MGNERGA (W)	/										/	

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

ii) Ribba Village, Kinnaur Forest Division

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Orchards	Pruning			← Manuring →			← Irrigation →			Fruit Plucking		
Agriculture	Snow			weeding and seed sowing	← Irrigation →			Grass cutting		Harvest olga, fofar, rajma	Seed Sowing	
Animal Husbandry	Feeding				Open grazing	← Wool cutting →						
Govt. Job	/								/		/	
Private Job								Leave by private job holder				
Buisness / Shop	Grocery Tea	Shop stall										
Wool craft	Weaving											Weaving
Wood craft	/											

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

iii) Yournath Vilalge, Lahaul Forest Division

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
Vegetable	← Snow →			Souring pea,potato,cabbage, rajma,reddish etc	Vegetable weeding	Vegetable weeding, irrigation	Pea Harvest, Transport and sale	Cabbage harvest, transport and sale	Potato harvest, transport, sale	No work due to snow			
Fruit	← Pear, Khubani, Apricot, flowering →			Cherry Transplantation	Irrigation	Irrigation	Cherry Harvest	Apricot ready		Apple /pear harves	Prunin g work		
Agriculture	← →			Barley, wheat , sowing	Weeding	← Irrigation →			Harvest	No work due to snow			
Wool Industry	← Weaving →		Wool cuttin g			Wool work in wool industry				ool cutti		Weaving	
Fodder	← Stallfeed in village 15 sheep + Goats →				← Sheep , goats in pastures →								
	← Stallfeed 03 cattle/HH →				← Stall feed →						← Open grazing →		

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

**Attachment II.2.7.3 Gender Roles in NTFP Harvesting and Processing – Panaul Village
(Hlet Tikkal, Bilaspur Forest Division)**

NTFPs/medicinal plant	Production/cultivation	Who goes to harvest (From farm)	Who goes to harvest (From village)	Processing (cleaning, drying, grading etc.)	Processing	Taking to market	Selling	Spending (who decides)	If there is a SHG/producer group/cooperative etc.)
Mango	M/F	All the members of family except old persons	MC/FC	Whole family	Old persons use to dry and process mango to prepare amchur	Mostly M	M	M	No
Jamun	M/F	Whole family	MC/FC	-----	Old person dry seeds to produce anti-sugar medicine	-----	-----	-----	-----
Harad	M/F	F	F	Old members and females	Old members and females	-----	-----	-----	-----
Baheda	M/F	F	F	Old members and females	Old members and females	-----	-----	-----	-----
Amla	M/F	M/F	M/F	Old members and females	Old members and females	-----	-----	-----	-----
Anjir	Old persons	M/F	MC/FC	-----	-----	-----	-----	-----	-----
Akhee	-----	-----	MC/FC	-----	-----	-----	-----	-----	-----
Gurnu	-----	-----	MC/FC	Children	-----	-----	-----	-----	-----
Kadi-patta	-----	M/F	F/M/ MC/FC	-----	-----	-----	-----	-----	-----
Ber	-----	-----	MC/FC	-----	-----	-----	-----	-----	-----
Galot	-----	-----	F	-----	F	-----	-----	-----	-----
Drengal tardi	M/F	M/F	M	F	-----	-----	-----	-----	-----
Bana	M/F	M/F	M	F	-----	-----	-----	-----	-----
Basuti	-----	M/F	M/F	Old members	-----	-----	-----	-----	-----
Bariya	M/F	M/F	M/F	Old members	-----	-----	-----	-----	-----
Nashpati	M/F	M/F	M/F	Old members and females	M/F	-----	M/F	M	No
Grass	M/F	M/F	M/F	M/F	M/F	-----	M/F	M	No
Fuel wood	-----	M/F	M/F	M/F	-----	-----	-----	-----	-----

Remarks: F=Female/ M=Male/ FC=Female Children/ MC=Male Children

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

Attachment II.2.8.1 Summary Table for SHGs

Name of SHG, District	Navjot Knitting CIG, Kullu	Jogani CIG, Kullu	Maa Kali SHG, Kullu	Baggi Village SHG, Kullu
Main activity Group (G) Individual (I)	Knitting (I)	Handloom (I)	Collection and selling pine needles and firewood, traditional handloom (G)	1. Only saving and inter-loaning (new group) (G) 2. Apricot oil (before)
Established year	2012 and mobilized in 2015	2015	2016	1. March 2017 2. 2002-2003
Assisted by	Mid-Himalayan Watershed Dev. Project	Mid-Himalayan Watershed Dev Project	NABARD/MKM	1. NABARD/HPMKM 2. Jagriti NGO (the members are in 2 SHGs)
No. of member/ age /education	10/ 20-30s/ Mostly 10+2	10/ 30-55 / from 5-10+2	8/ 25-49 years / 8-9 classes	11/ 31-61 year old/ from 5 to 10+2
Saving/month	INR 100/member	INR100/member	INR 100/member	1. INR 50 /month 2. INR 100/month
Inter-loaning (i/r) Purpose:	2% month Buy yarns, school fee etc.	1%/month Agriculture, household items	No because of bank loan	2%/month Household items
Bank credit Purpose:	NA	NA	1 st INR 7,000 (12%), 2 nd 36,000(12%)	NA
Income/month	INR 3,000/member	INR. 3,500-5,000/member	INR 3,000 to 4,000/by group	NA
Market	Ordered locally	Local, Bhuttico	Hotels, Kullu market	NA
Strength/potential	Sufficient saving and experiences accumulated for bank credit	-High demand from local area	-Diversification of activities by seasons. -Homogeneity of group	-Experiences in SHG activities
Weakness/threat	-It is project-driven SHGs and no autonomous actions taken -No support in post project	-Not responding to increasing demand	-Role of pine needles for cushioning apples may soon be replaced by new form of packaging using trays.	-Taking SHG as project/donor-driven group but not "self-help".
Training/capacity building needs	-Credit linkage with Bank -SHG cluster and Federation	-Credit linkage with Bank -SHG cluster and Federation	-Promotion of microenterprise -Forest conservation and NTFPs	-Review and reviving the group and its activity
Lessons learned for the project	-Exist strategy such as linking the SHGs/CIGs to cluster/ federation is so important and the project need to incorporate in the implementation plan.	-In handloom IGA, the most of work is done individually and the members are not very keen on group activities. But providing common spaces as well as machines may promote efficiency and increase their income further.	-Group has a good strategy of ensuring constant income by diversifying activities (since some are seasonal and also they have small agri land holding). -When members are related or close with each other, it is easier to work together and share resources.	It is an example to show that the sustenance of SHG can be negatively affected by the convenience of donors. (a NGO stop buying the products from the group). It implies that the project should not have producer-buyer relationship directly

Name of SHG, District	Panchvir Varnagi SHG, GNHP, Kullu	Pine needle SHGs (4) GNHP, Kullu	Nav Durga SHG, Mandi	Sholi Mata SHG, Mandi
Main activity Group (G) Individual (I)	1. Knitting, 2. Drying apples, 3. Kidney beans, 4. bakery (to be started)	Pine needle crafts (baskets, accessories, vases etc) (G)	1. Basket (I) 2. Shopping Bag (I)	1. Knitting (G) 2. Shopping bags (G)
Established year	2016 (Worked as WSCG since 2003)	Jan – May 2017	2003	2012
Assisted by	NABARD/BTCA	NABARD/BTCA	NABARD/MSJVS	NABARD/MSJVS
No. of member/ age /education	10/ 20-60 years / 5 to 10+2 class	47 (4 SHGs)	8 (originally 10)/30-45 years / max 10+2	10/ 23 to 68 years /5 class to 10+2
Saving/month	INR 50/member	INR 30/member (1 group) (linked to one under Mid Himalayan project) INR 100 /member (3 groups)	INR 100/member	INR 100/ member at present. Increasing to INR 200 (from Aug)
Inter-loaning (i/r) Purpose:	2%/month Consumption purpose	2 % month (1 group) Personal	2%/month Consumption & emergency needs	2%/month Buy yard each took INR 5,000/machine
Bank credit (i/r) Purpose:	INR 10,000 (12%) by 1 member for 2 months To buy a sowing machine	1 group took INR 10,000 for 2 months	4-5 times since 2004. To buy Sowing/knitting machines	INR 20,000 (2013), INR. 100,000 (2016), INR. 200,000 (2016) Construct houses and others.
Income/month	Not yet calculated	INR 1,000-2,000/group	Not available	INR 2,500/member but more in winter season
Market	GNHP souvenir shop at Sai Ropa	GNHP souvenir shop at Sai Ropa	Locally ordered (cannot make too many to be sold at market.)	Saturday market
Strength/potential	Trained on bakery and provided an oven by WWF linked upgrade of water flour mill	-Producing good quality products -A Master trainer in the group to train other members.	Long years of experiences. Credit with bank, Having an active woman in the group.	A good leader with a good business sense, confident on products.
Weakness/threat	Depending solely on the souvenir shop for marketing	Not having knowledge on pricing and marketing.	Group lacks a foresight to achieve growth	Other members are active yet rely on the capacity of leader
Training/capacity building needs	-IGA for eco-tourism	-Basic knowledge on pricing -IGA for ecotourism	- Skill upgradation for matured SHGs	- Skill upgradation for matured SHGs -Exposure visits to advanced SHGs
Lessons learned for the project	Since the WSCG time in 2003, the group was in existence for many years. But the Group is still weak in terms of their organizational management and their IGA activities.	- A group without knowledge of pricing could be vulnerable to competitions or markets outside their community. -IGA should be linked to the awareness for forest management (e.g., forest fire)	Having an “active woman” in a group makes other members to work easier with better connection with external supports such as NABARD.	Having “confidence” in products that groups make is important as it drives their motivation to produce something good and earn more.

Source: JICA Study Team (2017)

Attachment II.2.8.2 Case Studies of SHGs and Lessons Learnt

1. A Case Study of Successful SHGs: (1) Knitting Group in Mandi District

Background: Under the Aegis of SHG-BLP intervention by NABARD and partnering NGO-MSJVS, the Sholi Mata SHG was formed in 2012 with 10 women members aged between 23 to 68 years. The group is operational in the Sadar Block of Mandi District, with close proximity to the town.



Activity: The vibrant group is engaged in two key IGAs – Knitting and Making Shopping Bags.

Prior to the project intervention, the group was

already engaged in knitting activities but at individual household level. The group has adopted an interesting approach to manufacturing that draws synergies from capabilities and capacities of individual members. Of the 10 members only 4 members own knitting machines and remaining are adept in knitting by hand. While the group was aware that hand-woven products command a higher selling price, their production was not cost effective to meet high market demand. Hence, they have divided the production process into two: members with machine made sweater's back, while others hand knit the front with intricate patterns. This approach not only took less time to manufacture but also makes their products stand out from the products solely knitted using machines, hence giving them a competitive advantage.

SHG's president, though educated up to class 5, was a highly motivated leader and driven to mobilise her group in adopting latest designs and effective production techniques to improve the quality and thus, the sell well in the Saturday local market (their only sale avenue). She holds a marked presence in the market and is effective in training other members on selling and customer pleasing qualities. The group is able to sell their produce without a backlog and each member easily earns INR 2,500 per month even in off-season. Projecting a higher demand for their products in coming winter months, the group has already entered into the third credit cycle with INR 200,000 loan. The group vehemently voiced the desire to diversify their activities through attending requisite training. Unlike most of the groups met during the field study, Sholi Mata SHG had all members as active members. Each one has a story to tell and an experience to share that has left an indelible mark in their attitude towards self, and a social standing in their homes and community.

Key Lessons Learned from the Group

- ✓ Good leadership brought effective teamwork (group dynamics).
- ✓ Member's willingness to learn or to improve encouraged them to produce quality products and attributed to confidence-building.
- ✓ Member's commitment to the activity gradually won the support of their family and society.
- ✓ Compatibility between existing skill set and proposed interventions is the key to sustainability.

Source: Field Interviews, JICA Study Team (2017)

2. A Case Study of Successful SHGs: (2) Multi-Purpose Group in Kullu District

Background: Maa Kali SHG is a year-old group of 8 women members (aged 25 to 49 years) from Saldheri Village in Dugilag GP, District Kullu. The group was formed with support from a local NGO – Mahila Kalyan Mandal and NABARD's SHG-BLP intervention. All women members come from modest background with education up to class 9 and average land holding less than 1 ha per household (family landholding are divided amongst brothers) with BPL status.

Activity: The group has adopted an enterprising survival strategy involving a combination of livelihood activities linked to their access to forest resources and market demand. SHG has identified key activities as – 1) pine needle collection to sell for apple packaging; 2) firewood collection to sell to the hotels in Kullu; 3) traditional handloom, and 4) knitting. Owing to marginal land holding, the members do not practice



even subsistence agriculture and thus, are highly depended on external livelihood sources to meet their ends. Therefore, forest resources i.e. pine needles and fuel wood provide a vital income source for the forest dependent communities like Saldheri village. Prior to group formation, members worked in individual capacity; however, SHG formation has now made their task more efficient and economically viable. Since the income from extraction and sale of (free) forest resources is seasonal in nature (Pine Needle for 3 months and Firewood 8-9 months), the group introduced traditional handloom and knitting activities as additional source of income especially during winter months. With the microcredit of INR 36,000, each member took around INR 5,000 loans to purchase raw materials for their handloom and knitting activities. Driven to augment these additional activities, the group underwent a knitting training by MKM and are willing to purchase two additional knitting machines as a group asset. With an additional income of INR 500-800 per month, all the members are able to repay INR 200 as monthly loan instalment and save INR 100 to group corpus. The sheer intelligence and dire need of the group member got them under the spotlight for NABARD support. They are willing to learn more to earn more for themselves, their children, and families.

Key Lessons Learned from the Group

- ✓ Diversified activities help the group to meet seasonal variations and market demands
 - ✓ Working together helped the group achieve higher economic viability of the activities.
 - ✓ Cohesiveness of group allowed sharing resources without troubles
 - ✓ Formation of SHG was well received by reaching to the most needed or desired sections of Society
- Source: Field Interviews, JICA Study Team (2017)

Attachment II.3.6.1. Indicative Project Work Quantity

Component 1

	Item	Unit	Quantity
1.	Sustainable Forest Management		
1.1	Preparatory Works for Participatory Forest Management		
1.1.1	Identification and Selection of Interventions Areas	VFDS	400
1.1.2	Identification of PFM mode or Departmental mode	VFDS	400
1.1.3	Surveying and Mapping of Intervention Areas	VFDS	400
1.1.4	Identification and Selection of Target Communities	VFDS	400
1.1.5	Engagement of Mobilisers, Ward Level Facilitators	VFDS	400
1.1.6	Community Mobilisation	VFDS	400
1.1.7	Preparation of FEMP and CD&LIP	VFDS	400
1.1.8	Annual Planning/ Revisiting of Micro Plan (4th Year)	VFDS	400
1.2	Participatory Forest Management Mode		
1.2.1	Site Specific Planning & Monitoring		
	a) Drone and its accessories	ranges	55
	b) Site Specific Planning	10 ha	405
	c) Site Specific Monitoring (1st time)	10ha	405
	c) Site Specific Monitoring (2nd time)	10ha	405
1.2.2	Drainage Line Treatment (ex-situ SWC work)	ha	492
1.2.3	Improvement/ densification of Moderately Dense Forest		
	1) ANR without planting		
	a) Year 0 Fencing work	ha	1,150
	b) Year 0 Fencing work (additional work)	ha	1,150
	c) Year 0 SWC Work	ha	1,150
	d) Year 1 Maintenance	ha	1,150
	e) Year 1 Maintenance additional work	ha	1,150
	f) Year 2 Maintenance	ha	1,150
	g) Year 2 Maintenance additional work	ha	1,150
	h) Year 3 Maintenance	ha	1,150
	i) Year 3 Maintenance additional work	ha	1,150
	j) Year 3 SWC work	ha	1,150
	2) ANR with gap planting of 200 seedlings/ha (tall plant) (Tribal)		
	a) Year-1 Preparation for planting	ha	1,150
	b) Year 0 Planting year	ha	1,150
	c) Year 0 Plantation & Maintenance additional work	ha	1,150
	d) Year 0 SWC work	ha	1,150
	e) Year 1 Maintenance (10% replanting)	ha	1,150
	f) Year 1 Maintenance additional work	ha	1,150
	g) Year 2 Maintenance	ha	1,150
	h) Year 2 Maintenance additional work	ha	1,150
	i) Year 3 Maintenance	ha	1,150
	j) Year 3 Maintenance additional work	ha	1,150
	k) Year 3 SWC work	ha	1,150
1.2.4	Afforestation/ improvement of Open/ Scrub Forest - Fuelwood & Fodder plantation		
	1) Fuel wood and Fodder Plantation 1,100 normal plants/ha		
	a) Year-1 Preparation for planting	ha	925
	b) Year 0 Planting year	ha	925
	c) Year 0 Plantation & Maintenance additional work	ha	925

Item	Unit	Quantity
d) Year 0 SWC Work	ha	925
e) Year 1 Maintenance (10% replanting)	ha	925
f) Year 1 Maintenance additional work	ha	925
g) Year 2 Maintenance (5% replanting)	ha	925
h) Year 2 Maintenance additional work	ha	925
i) Year 3 Maintenance	ha	925
j) Year 3 Maintenance additional work	ha	925
k) Year 3 SWC Maintenance work	ha	925
2) Tree + Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha)		
a) Year-1 Preparation for planting	ha	462
b) Year 0 Planting year	ha	462
c) Year 0 Plantation & Maintenance additional work	ha	462
d) Year 0 SWC Work	ha	462
e) Year 1 Maintenance (10% replanting)	ha	462
f) Year 1 Maintenance additional work	ha	462
g) Year 2 Maintenance (5% replanting)	ha	462
h) Year 2 Maintenance additional work	ha	462
i) Year 3 Maintenance	ha	462
j) Year 3 Maintenance additional work	ha	462
k) Year 3 SWC Maintenance work	ha	462
3) Tall Plant Block Plantation (500 tall plants/ha) with Wooden Fence Posts		
a) Year-1 Preparation for planting	ha	154
b) Year 0 Planting work	ha	154
c) Year 0 Plantation & Maintenance additional work	ha	154
d) Year 0 SWC Work	ha	154
e) Year 1 Maintenance (10% replanting)	ha	154
f) Year 1 Maintenance additional work	ha	154
g) Year 2 Maintenance (5% replanting)	ha	154
h) Year 2 Maintenance additional work	ha	154
i) Year 3 Maintenance	ha	154
j) Year 3 Maintenance additional work	ha	154
k) Year 3 SWC Maintenance work	ha	154
1.2.5	Improvement of Forest quality at key concerned Forest Areas	
1) Planting 200 tall plants/ha + Rehabilitation 100% of invasive plants areas (Wooden Fence)		
a) Year-1 Preparation for planting and rehabilitation	ha	161
b) Year 0 Planting and rehabilitation	ha	161
c) Year 0 Plantation & Maintenance additional work	ha	161
d) Year 0 SWC Work	ha	161
e) Year 1 Maintenance (10% replanting) and rehabilitation	ha	161
f) Year 1 Maintenance additional work	ha	161
g) Year 2 Maintenance (5% replanting) and rehabilitation	ha	161
h) Year 2 Maintenance additional work	ha	161
i) Year 3 Maintenance and rehabilitation	ha	161
j) Year 3 Maintenance additional work	ha	161
k) Year 3 SWC Maintenance work	ha	161
1.2.6	Improvement of Pastures/ Grasslands (including in-situ SWC works)	
1) Dry Alpine Pasture Models (Broadcasting Method) (Tribal)		
a) Year 0	ha	160
b) Year 0 Additional work	ha	160
c) Year 0 SWC Work	ha	160
d) Year 1	ha	160
e) Year 1 Maintenance additional work	ha	160
f) Year 2	ha	160
g) Year 2 Maintenance additional work	ha	160
2) Dry Alpine Pasture Models (Patch/Strip Method)		

Item		Unit	Quantity
	a) Year 0	ha	160
	b) Year 0 Additional work	ha	160
	c) Year 0 SWC Work	ha	160
	d) Year 1	ha	160
	e) Year 1 Maintenance additional work	ha	160
	f) Year 2	ha	160
	g) Year 2 Maintenance additional work	ha	160
	3) Establishment of Fallow Grassland / Pasture	ha	450
1.2.7	Forest Fire Protection		
	1) Fire Patrol		
	1st year	ha	2,000
	2nd year	ha	2,000
	3rd year	ha	2,000
	4th year	ha	2,000
	2) Pine needle Collection and Utilization Survey and Capacity Building	districts	3
	3) Pine needle Collection and Utilization	ranges	10
1.2.8	Forestry Interventions at outside of Forest Areas		
	1) Tree + Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha)		
	a) Year-1 Preparation for planting	ha	310
	b) Year 0 Planting year	ha	310
	c) Year 0 Plantation & Maintenance additional work	ha	310
	d) Year 0 SWC Maintenance work	ha	310
	e) Year 1 Maintenance (10% replanting)	ha	310
	f) Year 1 Maintenance additional work	ha	310
	g) Year 2 Maintenance (5% replanting)	ha	310
	h) Year 2 Maintenance additional work	ha	310
	i) Year 3 Maintenance	ha	310
	j) Year 3 Maintenance additional work	ha	310
	k) Year 3 SWC Maintenance work	ha	310
1.3	Training of VFDSs		
1.3.1	Training of VFDSs	no. (for VFDS)	400
1.3.2	Exposure Visits		
1.3.2.1	Within State	no. (for VFDS)	400
1.3.2.2	Out of State	no. (for VFDS)	400
1.3.3	Joint Workshop		
1.3.3.1	Range	VFDS	400
1.3.3.2	Division	VFDS	400
1.4	Department Mode		
1.4.1	Site Specific Planning & Monitoring		
	b) Site Specific Planning	10ha	748
	c) Site Specific Monitoring	10ha	748
	c) Site Specific Monitoring	10ha	748
1.4.2	Improvement of Forest Boundary Management at Project Intervention Areas		
	1) Survey for Geo-referencing Forest Boundaries	km	483
	2) Installation of boundary pillar	km	483
	3) Maintenance of Forest Boundary Pillars	km	483
1.4.3	Improvement of Nurseries		
	1) Total cost of improvement of nursery at Range Level	range	45
	2) Nursery Maintenance Cost for Range Level Nursery (5%)	range	45
	3) Total cost of improvement of nursery at Circle Level	circle	6
	4) Nursery Maintenance Cost for Circle Level Nursery (5%)	circle	6
1.4.4	Seedling Production		
	1) 1~1.5 year seedlings of normal chil/broad leaves plants		
	a) Year -1	seedlings	2,448,000
	b) Year -1 additional work	seedlings	2,448,000
	2) 2~2.5 years seedlings of tall/chil/broad leaves plants		
	a) Year -2	seedlings	1,299,000

Item		Unit	Quantity
	b) Year -2 additional work	seedlings	1,299,000
	c) Year -1	seedlings	1,299,000
	d) Year -1 additional work	seedlings	1,299,000
	3) ~ 3.5 years seedlings of tall deodar/ban oak plants		
	a) Year -3 raising of plants in polythene bags	seedlings	745,000
	b) Year -3 additional work	seedlings	745,000
	c) Year -2 shifting of plants in polythene bags	seedlings	745,000
	d) Year -2 additional work	seedlings	745,000
	e) Year -1	seedlings	745,000
	f) Year -1 additional work	seedlings	745,000
	4) Nursery cost of plants for shrubs (Tribal)	seedlings	3,488,000
1.4.5	Non-PFM Drainage Line Treatment (ex-situ SWC work: including treatable surface Erosion Control)	ha	1,849
1.4.6	Secondary Silvicultural Operations for Improvement of Existing Forests		
	1) Tending Operation		
	a) Year 0 Fencing work	ha	1,028
	b) Year 0 Fencing work (additional work)	ha	1,028
1.4.7	Improvement/ densification of Moderately Dense Forest		
	1) ANR without planting		
	a) Year 0 Fencing work	ha	1,196
	b) Year 0 Fencing work (additional work)	ha	1,196
	c) Year 0 SWC Work	ha	1,196
	d) Year 1 Maintenance	ha	1,196
	e) Year 1 Maintenance additional work	ha	1,196
	f) Year 2 Maintenance	ha	1,196
	g) Year 2 Maintenance additional work	ha	1,196
	h) Year 3 Maintenance	ha	1,196
	i) Year 3 Maintenance additional work	ha	1,196
	j) Year 3 SWC work	ha	1,196
	2) ANR with gap planting of 200 seedlings/ha (tall plant)		
	a) Year-1 Preparation for planting	ha	1,196
	b) Year 0 Planting year	ha	1,196
	c) Year 0 Plantation & Maintenance additional work	ha	1,196
	d) Year 0 SWC work	ha	1,196
	e) Year 1 Maintenance (10% replanting)	ha	1,196
	f) Year 1 Maintenance additional work	ha	1,196
	g) Year 2 Maintenance	ha	1,196
	h) Year 2 Maintenance additional work	ha	1,196
	i) Year 3 Maintenance	ha	1,196
	j) Year 3 Maintenance additional work	ha	1,196
	k) Year 3 SWC work	ha	1,196
1.4.8	Afforestation/ improvement of Open/ Scrub Forest - Fuelwood & Fodder plantation		
	1) Fuel wood and Fodder Plantation 1,100 normal plants/ha (Tribal)		
	2) Tree + Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha) (Tribal)		
	3) Tall Plant Block Plantation (500 tall plants/ha) with CC Fence Posts (Tribal)		
	a) Year-1 Preparation for planting	ha	2,199
	b) Year 0 Planting work	ha	2,199
	c) Year 0 Plantation & Maintenance additional work	ha	2,199
	d) Year 0 SWC Work	ha	2,199
	e) Year 1 Maintenance (10% replanting)	ha	2,199
	f) Year 1 Maintenance additional work	ha	2,199
	g) Year 2 Maintenance (5% replanting)	ha	2,199
	h) Year 2 Maintenance additional work	ha	2,199
	i) Year 3 Maintenance	ha	2,199
	j) Year 3 Maintenance additional work	ha	2,199
	k) Year 3 SWC Maintenance work	ha	2,199
1.4.9	Improvement of Forest quality at key concerned Forest Areas		
	1) ANR with gap planting of 200 seedlings/ha (tall plant) (Tribal)		
	a) Year-1 Preparation for planting and rehabilitation	ha	242
	b) Year 0 Planting year	ha	242
	c) Year 0 Plantation & Maintenance additional work	ha	242
	d) Year 0 SWC Work	ha	242

Item		Unit	Quantity
	e) Year 1 Maintenance (10% replanting)	ha	242
	f) Year 1 Maintenance additional work	ha	242
	g) Year 2 Maintenance	ha	242
	h) Year 2 Maintenance additional work	ha	242
	i) Year 3 Maintenance	ha	242
	j) Year 3 Maintenance additional work	ha	242
	k) Year 3 SWC Maintenance work	ha	242
1.4.10	Improvement of Pastures/ Grasslands (including in-situ SWC works)		
	1) Dry Alpine Pasture Models (Broadcasting Method) (Tribal)		
	a) Year 0	ha	108
	b) Year 0 Additional work	ha	108
	c) Year 0 SWC Work	ha	108
	d) Year 1	ha	108
	e) Year 1 Maintenance additional work	ha	108
	f) Year 2	ha	108
	g) Year 2 Maintenance additional work	ha	108
	2) Dry Alpine Pasture Models (Patch/Strip Method) (Tribal)		
	a) Year 0	ha	108
	b) Year 0 Additional work	ha	108
	c) Year 0 SWC Work	ha	108
	d) Year 1	ha	108
	e) Year 1 Maintenance additional work	ha	108
	f) Year 2	ha	108
	g) Year 2 Maintenance additional work	ha	108
	3) Establishment of Fallow Grassland / Pasture	ha	1,300
1.4.11	Forest Fire Management		
	1) Forest Fire Management (Tribal)		
	a) Creation of Fire line	km	483
	b) Maintenance of Fire line (1 year)	km	483
	c) Maintenance of Fire line (2 year)	km	483
	d) Maintenance of Fire line (3 year)	km	483
1.5	Training of Project related staff of HPFD		
1.5.0	Preparation of Livelihood Improvement Strategy and Plan	LS	1
1.5.1a	TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation	no. (for Division)	36
1.5.1b	TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation (Follow up)	no. (for Division)	36
1.5.2a	Training for GP Mobilisers and Facilitators	no. (for VFDS)	400
1.5.2b	Training for GP Mobilisers and Facilitators Follow up	no. (for VFDS)	400
1.6	Research		
1.6.1	Monitoring Data Accumulation for Nursing and Planting of Tall Plants	LS	1
1.6.2	Monitoring Data Accumulation for Effective Pasture Management	LS	1
1.6.3	Study for Effective SWC and Land Slide Control Measures	LS	1

Source: JICA Study Team (2017)

Component 2

Item		Unit	Quantity
2.1	Scientific Biodiversity Management		
2.1.1	Preparatory Works	LS	1
2.1.2	Protected area management improvement in core zone or buffer zone	LS	1
2.1.3	Human-wildlife conflict mitigation/management		
	Human-wildlife conflict mitigation/management	LS	1
	Rapid Response Team	divisions	14
2.1.4	Wildlife habitat improvement	LS	1
	Wildlife habitat improvement Water Pond	no	100
2.1.5	Recovery programmes for endangered wildlife	LS	1
2.2	Training of Project related Staff of HPFD (ref.4.2.1)		
2.2.0	Preparation of Livelihood Improvement Strategy and Plan	LS	1
2.2.1a	TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation	no. (for Division)	36
2.2.1b	TOT for DMU Subject Matter Specialist/ FTU Coordinators for	no. (for Division)	36

	Item	Unit	Quantity
	Field Facilitation (Follow up)		
2.2.1a	Training for GP Mobilisors and Facilitators	no. (for BMC)	20
2.2.2b	Training for GP Mobilisors and Facilitators Follow up	no. (for BMC)	20
2.3	Research		
2.3.1	Pilot Project on Biodiversity Corridor (Baseline survey for biodiversity corridor)	Set	1
2.3.2	Basic study for designing Biodiversity Census	Set	1
2.4	Community Based Biodiversity Management		
2.4.1	Preparatory Works		0
2.4.1.1	Identification of Potential Intervention Area	BMC	20
2.4.1.2	Identification of BMC	BMC	20
2.4.1.3	Survey and Mapping (ref.1.1.3)	BMC	20
2.4.1.4	Engagement of GP Mobilisors/ Ward Facilitators	BMC	20
2.4.1.5a	Training of GP Mobilisors/ Ward Facilitators	BMC	20
2.4.1.5b	Training of GP Mobilisors/ Ward Facilitators (Follow-up)	BMC	20
2.4.1.6	Community Mobilisation	BMC	20
2.4.1.7	Preparation of CBMP and CD&LIP	BMC	20
2.4.1.8	Annual Planning/ Revisiting of Micro Plan (4th Year)	BMC	20
2.4.2	Community Based Biodiversity Management		
2.4.2.1	Satoyama Based Biodiversity Conservation Activities		
2.4.2.1 a	Promotion of Sustainable use and Management of Natural Resources (Major Cost to be represented by forestry activities)		
1	Site Specific Planning & Monitoring		
	b) Site Specific Planning	10 ha	70
	c) Site Specific Monitoring (1st time)	10ha	70
	c) Site Specific Monitoring (2nd time)	10ha	70
2	Drainage Line Treatment (ex-situ SWC work)	ha	73
3	Improvement/ densification of Moderately Dense Forest		
	1) ANR without planting	ha	173
	2) ANR with gap planting of 200 seedlings/ha (tall plant)	ha	173
4	Afforestation/ improvement of Open/ Scrub Forest - Fuelwood & Fodder plantation		
	1) Fuel wood and Fodder Plantation 1,100 normal plants/ha	ha	139
	2) Tree+Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha)	ha	69
	3) Tall Plant Block Plantation (500 tall plants/ha) with Wooden Fence Posts	ha	23
5	Improvement of Forest quality at key concerned Forest Areas		
	2) ANR with gap planting of 200 seedlings/ha (tall plant)	ha	24
6	Improvement of Pastures/ Grasslands (including in-situ SWC works)		
	1) Dry Alpine Pasture Models (Broadcasting Method)	ha	20
	2) Dry Alpine Pasture Models (Patch/Strip Method)	ha	20
	3) Establishment of Fallow Grassland / Pasture	ha	90
7	Forest Fire Protection		0
	1) Fire Patrol	ha	300
8	Forestry Interventions at outside of Forest Areas		0
	1) Tree+Shrubs/Perennial Herbs Plantation (1,100 trees + 4,400 plants/ha)	ha	30
2.4.2.1 b	Designation of Biodiversity Registers (Survey and planning)	BMCs	20
2.4.2.1 c	Implementation of CBMP	BMCs	20
2.4.2.2	Eco Clubs	Ls	1
2.5	Training of BMCs		
2.5.1	TOT for DMU Subject Matter Specialist/ FTU Coordinators for Field Facilitation	no. (for Division)	36
2.5.2	Training of BMCs and sub-committee	no. (for BMC)	20
2.5.3	Exposure Visits		
2.5.3.1	Within State	no. (for BMC)	20
2.5.3.2	Out of State	no. (for BMC)	20
2..5.4	Joint Workshop		
2.5.4.1	Range	no. (for BMC)	20
2.5.4.2	Division	no. (for BMC)	20
2.6	Biodiversity Monitoring System	Biennial	5

Source: JICA Study Team (2017)

Component 3

Item		Unit	Quantity
3.1	Community Development		
3.1.1	Preparation of CD&LIP (ref.1.1.7 or 2.4.1.7)		
3.1.2	Transfer of Funds	VFDS/ BMC sub committee	460
3.1.3	Implementation of CD activities (ref.3.1.2)		
3.1.4	Preparation of Guidelines Manuals and Training Programmes for Community Development (ref.1.5.0)		
3.1.5	Research: Pilot Project on Hydro Cultural Fodder Production	LS	1
3.2	NTPF based Livelihood Improvement		
3.2.1	Preparatory Works		
	a) NTFP Assessment	Clusters	11
	b) Establishment of Him Jadi-Buti Society	Nos.	1
3.2.2	NTPF Enterprise Development Clusters	Clusters	11
3.2.3	NTPF Research and Development	Nos.	1
3.2.4	NTPF Cultivation		
3.2.5	NTPF Market Research and Promotion	Nos.	1
3.2.6	NTPF Training and Extension	Nos.	1
3.2.7	NTPF Publicity and Communication	Nos.	1
3.3	Non NTFP based Livelihood Improvement		
3.3.1	Preparation of Livelihood Improvement Strategy and Plan	LS	1
3.3.2	Preparation of CD&LIP (ref.1.1.7 or 2.4.1.7)		
3.3.3	Formation/ Reviving CIGs/ SHGs	VFDS/ BMC sub committee	460
3.3.4	Implementation of Household/ Community level livelihood improvement	CIG/ SHG	920
3.3.5	Promotion of Cluster based Livelihood Activities	LS	1
3.3.6	Capacity Development for CIGs/ SHGs and Cluster based Organisations		
3.3.6.0	Preparation of Manuals and Guidelines	LS	1
3.3.6.1	TOT for DMU/FTU for Livelihood Improvement	Division	36
3.3.6.2	Training for GP Motivators and Facilitators (VFDS)	no. (for VFDS)	400
	Training for GP Motivators and Facilitators (BMC)	no. (for BMC)	20
3.3.6.3	Training for CIGs/ SHGs	no VFDS/ BMC sub committee	460
3.3.6.4	Exposure Visits		
3.3.6.4.1	Within State	CIG/ SHG	920
3.3.6.4.2	Out of State	CIG/ SHG	920
3.3.7	Capacity Development for CIGs/ SHGs and Cluster Based Organisation (ref.3.3.6)		

Source: JICA Study Team (2017)

Component 4

Item		Unit	Quantity
4.1	Preparatory Works		
4.1.1	Establishment of PMU and Field Level Units		
4.1.2	Strengthening of PMU and Field Level Units		
4.1.2.1	Mobility Support (vehicle hiring instead of procuring)		
	a) PMU	months	120
	b) FCCU	months	826
	c) FTU	months	6,018
	d) Project Divisions	months	1,904
4.1.2.2	Equipment Support		
	a) PMU	Nos.	1
	b) FCCU	Nos.	7
	c) FTU	Nos.	55
	d) Project Divisions	Nos.	16
4.1.2.3	Office		
	a) PMU	Nos.	1

Item		Unit	Quantity
	b) FCCU	Nos.	7
	c) FTU	Nos.	55
	d) DMU	Nos.	16
4.1.2.4	Furniture		
	a) PMU	Nos.	1
	b) FCCU	Nos.	7
	c) FTU	Nos.	55
	d) DMU	Nos.	16
4.1.3	Recruitment of the Personnel/ Subject Matter Specialists/ Resource Organisations		
4.1.3.1	Human Resource Support		
	1) PMU		
	a) Contractual/ Direct Hiring	months	120
	b) Outsourcing	months	120
	c) short term SMS 1	months	15
	d) short term SMS 2	months	15
	e) short term SMS 3	months	6
	2) FCCU		0
	a) Contractual/ Direct Hiring	months	826
	b) Outsourcing	months	826
	3) Project Division - Contractual/ Direct Hiring	months	1,904
	4) FTU		
	a) Contractual/ Direct Hiring	months	6,490
	b) Outsourcing	months	6,490
4.1.3.2	Support for VFDS/BMC		
	1) Strengthening support to VFDS/BMC	VFDS/BMC	420
	2) Operation support to VFDS/BMC	months	37,800
	3) Maintenance Corpus Contribution to VFDS/BMC	VFDS/BMCs	420
4.1.4	Preparation of Gender Action Plan	LS	1
4.1.5	Environmental and Social Consideration		
	a) Environmental and Social Consideration Expert (ESCE)	MM	10
	b) Environmental and Social Consideration Field Expert (ESCFE)	MM	30
4.2	Capacity Development		
4.2.1	Implementing Agency		
4.2.1.1	Training Plan Development		
	1) National	LS	1
	2) Overseas	LS	1
4.2.1.2	Regular Trainings		
	1) Officers		
	a) Within State	batches	14
	b) Outside State	batches	22
	2) Frontline Staff		
	a) Within State	batches	44
	b) Outside State	batches	66
4.2.1.3	Refresher Trainings		
	1) Officers		
	a) Within State	batches	5
	b) Outside State	batches	7
	2) Frontline Staff		
	a) Within State	batches	15
	b) Outside State	batches	22
4.2.1.4	Exposure Visits	nos.	
	a) National/ Within State	batches	18
	b) Overseas 1	batches	2
	c) Overseas 2	batches	2
4.2.1.5	Workshops/ Seminars		
	a) National Annual Workshop	nos.	1
	b) State-level workshops/ seminars	nos.	9
4.2.2	Gender Training		
4.2.2.1	Gender Training (PMU)	LS	1
4.2.2.2	Gender Training FCCU/ FTU (TOT Mode)	Division	16
4.2.2.3	Gender Training VFDS/ BMC/ Sub Committees/ Cluster Organisations/ VFDS/BMC Motivators/ Ward Facilitators (VFDS)	no. (for VFDS)	400

Item		Unit	Quantity
	Gender Training VFDS/ BMC/ Sub Committees/ Cluster Organisations/ VFDS/BMC Motivators/ Ward Facilitators (BMC)	no. (for BMC)	20
4.2.2.4	Gender Training (e) CIGs/ SHGs	CIG/ SHG	920
4.2.3	Environmental and Social Consideration		
	a) Training (PMU/FCCU) at Circle Level	batches	28
	b) Training (DMU/FTU) at Division Level	batches	64
4.3	Monitoring & Evaluation (M&E)		
4.3.1	Establishing and operationalising M&E System		
4.3.1.1	Monitoring		
	1) Biodiversity Monitoring System (to be covered in Component 2)		
	2) Concurrent Monitoring & Periodic Review		
	a) PMU	quarters	38
	b) Project Divisions	months	1,728
	c) Project Circles	quarters	278
	d) Governing Body of PMU	quarters	40
	e) HPC of PMU	half-years	20
	f) Gram Panchayats	months	38,400
	3) Community Self-monitoring	quarters	12,800
	5) Computerized Accounting System		
	a) PMU	PMU	1
	b) FCCU	FCCU	7
	7) Annual Strategy Planning & Review Workshops		
	a) PMU	PMU	9
	b) Project Circles	Circles	63
4.3.1.2	Impact Assessment		
	1) Annual Outcome Assessments	Annual	9
	2) Baseline and Impact Surveys		
	a) Socio-economic/ Gender Surveys		
	i) Baseline	times	1
	ii) Impact (mid and end-term)	times	2
	b) Physical Surveys		
	i) Baseline	times	1
	ii) Impact (mid and end-term)	times	2
	3) Thematic and Short Studies	times	6
4.3.1.3	Audits & Transparency		
	1) Social Audits		
	a) Batch-1	audits	1470
	b) Batch-2	audits	2,460
	c) Batch-3	audits	1,500
	2) Statutory Financial Audits		
	a) PMU	audits	10
	b) Project Divisions	audits	160
	c) VFDS/BMCs		
	i) Batch-1	audits	735
	ii) Batch-2	audits	1,230
	iii) Batch-3	audits	750
	3) Concurrent Audits		
	a) PMU	audits	10
	b) Project Divisions	audits	160
	4) Grievance Redressal, RTI and Public Disclosure		
4.3.2	Enhancement and Promotion of GIS/ MIS/ ICT		
	a) Development of Mobile Apps. for M&E and Incident Reporting	ls.	1
	b) GIS Monitoring	ls.	1
	c) Computerised GIS/MIS staff	ls.	1
4.3.3	Communication and Publicity		
4.3.3.1	Publicity		
	a) Newsletter	editions	36
	b) Publicity events (exhibitions/ melas etc.)	events	14
	c) Short Films	films	4
	d) Website Development		
4.3.3.2	Publication		
	a) Annual Report and Plan	years	10

Item		Unit	Quantity
	b) Quarterly Reports	quarters	38
	c) Guidelines & Manuals/ Handbooks	times	3
	d) Project Registers/ IEC material/ Success Stories	times	3
4.4	Research		
4.4.1	Basic Study for Strengthening of ICT at HPFD	LS	1
4.5	PMC		
4.5.1	Procurement of PMC	LS	1
4.5.2	Deployment of PMC specialists (ref.4.5.3)		
4.5.3	Provision of Technical and Managerial Advisory Services	LS	1
4.5.4	Preparation of Reports (ref.4.5.3)		
4.6	Phase Out		
4.6.1	Implementing Agency		
4.6.1.1	Preparation of Phase-Out/ Sustainability Mechanism Plan	LS	1
4.6.1.2	Transfer of Assets and Resources	LS	1
4.6.2	Community Based Organisations		
4.6.2.1	Preparation of Phase-Out/ Sustainability Mechanism Plan (VFDS)	VFDS	400
	Preparation of Phase-Out/ Sustainability Mechanism Plan (BMC)	BMC	20
4.6.2.2	Revisiting of FEMP/ CBMP and CD&LIP	VFDS/ BMC sub-committee	460
4.6.2.3	Phase Out Training (VFDS)	VFDS	400
	Phase Out Training (BMC)	BMC	20
	Phase Out Training (CIG/ SHGs)	CIG/ SHGs	920
4.6.3	FEMP/ CBMP Fund		
4.6.3.1	Preparation of Operation Manual of FEMP/ CBMP Fund	LS	1
4.6.3.2	Transfer of the FEMP/ CBMP Fund	VFDS/ BMC sub-committee	460

Source: JICA Study Team (2017)

Attachment II.3.7.1.1 Indicative Terms of Reference of GP Mobiliser (BMC only) and Ward Facilitators (VFDS/ BMC)

(1) GP Mobiliser (BMC only)

1.1 Objectives:

As a member-secretary of the BMC, the mobilisers are expected to guide and supervise project interventions as well as to facilitate community action, meetings, events and training and other associated activities in the Project.

1.2 Tasks:

- 1) To develop a deep understanding of communities in GP on the project and promote their active participation in every project activities
- 2) To assist BMC and BMC sub committees, CIG/ SHG in group formation, meeting, workshops, training and exposure visits.
- 3) To make regular and extended field visits at project sites to manage project implementation and coordinate project activities.
- 4) To keep records of meetings or discussions attended in the project on monthly basis.
- 5) To execute other tasks as requested by the project management

1.3 Profile/Qualification:

- 1) Reside in and belong to the targeted GP
- 2) Minimum Education Qualification: University Graduate
- 3) Strong interpersonal communication skills
- 4) Well known and respected in the community
- 5) Able to give time required for the work assigned and open to travel within the GP

(2) Ward Facilitators

1.1 Scope of Assignment:

Ward Facilitators are engaged for a cluster of wards and will function as an interface between VFDS/ BMC sub committees, FTU, DMU and CIGs/ SHGs established at wards. The facilitators shall provide the day to day guidance to the VFDS/ BMC sub committees in planning and implementation of the project interventions while helping them to maintain records and hold regular meetings.

1.2 Tasks:

- 1) To facilitate community mobilization and group formation of community institutions
- 2) To assist the project in organizing training sessions for VFDS/ BMC members and CIG/ SHGs.

- 3) To facilitate coordination with the stakeholders
- 4) To facilitate linkages with the financial or other related institutions for IGA activities
- 5) To provide guidance to VFDS/ BMC members, and CIG/ SHGs in holding meetings, maintaining records, planning and implementation of the project interventions and record keeping
- 6) To execute other tasks as requested by the project management.

1.3 Profile/Qualification:

- 1) Minimum Education Qualification: +2 passed
- 2) Resident of the wards where project is implemented
- 3) Respected in the community
- 4) Having prior experience in working as a part of the community institutions
- 5) Having learning capacity to absorb the new skills including record keeping and facilitation
- 6) Good communication skills

Attachment II.3.7.1.2 Potential Soil Water Conservation (SWC) Works

1. Basic Concept of SWC Works

Basic concept of SWC is shown below.

1.1 Purpose

The general purposes of SWC Works are shown below.

- 1) Improve degraded forest lands,
- 2) Improve soil, water and soil moisture conditions of treatment areas and their surrounding forest areas (including pasturelands), and
- 3) Restore landslide affected areas

1.2 Necessity

Forest land degradations are mainly caused by; i) erosions, ii) dry conditions, and ii) land slides. Measures to improve soil, water and soil moisture conditions are crucial to reverse such degraded forest lands to better functional and qualitative forest lands.

1.3 Background

The forest areas in HP are mostly located in steep slope and have vulnerable geological characters. Also, the climate condition in the central and lower regions of the state shows dry, and in the medium elevation areas, many heavy rains during the rainy season, in the high elevation areas, except cold desert areas, the rain fall is very less and it is very dry, and mostly no rainfall and very cold climate in the cold desert areas.

Due to such sever conditions of topographical, geological and climatic features in HP, the forest land is very vulnerable and damaged easily. Therefore, the intervention to resolve the damaged forest lands is crucially important. The SWC works are regarded as one of such important interventions.

2 SWC Works

2.1 List of Recommended SWC Works Measures

The recommended measures are listed in Table 2.1 below based on the evaluation of measures listed in “Manual on Soil and Water Conservation with focus on Watershed Management, HPFD, 2012”. The evaluation was done by the JICA study Team based on observations and inspections of existing SWC works in visited divisions. Based on the evaluations of SWC Works, the prioritised and feasible measures for the project interventions are listed in Table 2.1. Some measures which are not listed in Table 2.1 but included in the manual can be also taken up for the implementation in case site conditions and needs/necessities exist and sufficient technologies/experiences are available for such implementation.

Table 2.1 List of Recommended SWC Works Measures for the Project

Category		Place	Measures	Purpose or Functions	
I. Soil and water conservation measures	(1) Bio-engineering measures	Slope	Contour wattling [live hedge, which is composed with trench, banking, planting on banking]	- Restore eroded condition - Improve water and soil moisture condition - Improve survival ratio of planted seedlings by those above	
		Small stream or gully	Vegetated Palisade Wall	- Catch and save the debris behind - Generate stable condition for vegetation	
		Small stream	Live check dam Brush wood check dam	- Improve water and soil moisture condition by above	
	(2) Mechanical measures	Small stream	Dry stone check dam Gabion check dam		
			Lower stream	Gabion/ Masonry/ Concrete drop structure	- Catch and save the debris and water behind the dam - Generate stable condition for vegetation
		Masonry/concrete drop structure with apron		- Improve water and soil moisture condition by above	
		Silt detention structure (concrete)			
		Dry hill	Concrete/ masonry pond	- Catch water in the pond - Improve water and soil moisture condition - Provide water to animals	
	II. Measures for landslide control	Land slide triggered by weak geology	Landslide	Combination of: (a) Retaining wall (b) Series of staggered retaining walls on the slope (c) Geo-jute (d) Log crib (e) Gunny bag	- Restore eroded condition - Stabilize the slope - Generate vegetation bases - Realize stable slope and recovery by the vegetation by above

Source: JICA Study Team (2017)

Issues on SWC Works for Landslide caused by Road Opening and SWC Works for Typical Landslips

The SWC works, which will tackle i) the landslide¹ caused by road opening and ii) landslip, are described in the Manual by HPFD 2012.

However, these will not be taken for the Project. The reasons are:

The landslide caused by road opening is very often found in HP because of steep topography, vulnerable geology, and sever weather condition. The recovery of the landslide along the road is one of the most important issues of the state government.

In principle, the responsibility for restoration of the landslide caused by road opening shall be owned by the Public Work Department (PWD) and other relevant departments which administer roads. Primarily, HPFD's responsibility is treatment of the degraded forest areas and not that of road areas. According to HPFD, the responsibility demarcation related to the landslide caused by the road opening is regarded as; the landslide in the road area shall be restored by PWD and respective departments, and the landslide in the forest area to be restored by HPFD.

According to information based on the Manual and achievements HPFD, the measures against landslides are considered as rather weak to protect the road, because most of the structures constructed

¹ The definition of "landslip" in the Manual by HPFD 2012 is called as "landslide" and the land slide in the manual is called as "slope failure" generally. However, in this report words in the manual are used.

by HPFD are dry stone walls or dry stone walls with wire. These structures are not strong enough as measures which enable to protect such important property includes human lives, sufficiently. Usually, for such protection purpose, the structures shall be constructed by concrete or masonry, at least gabion structures. However, these structures have not been taken up by HPFD. The dry stone wall with GI (galvanized iron) wire structure looks similar with the gabion structures but is not the same as gabion. The single knot of the wire, which is used by HPFD normally as stone wall with wire, is not durable enough for disaster prevention work in accordance with technical guideline of the PWD. Generally, the gabion net is prepared at factories with double knots and transported to the construction sites. Therefore, the dry stone wall with GI wire and gabion wall are quite different. Furthermore, HPFD doesn't have much experiences of construction of masonry or concrete wall structures on the landslide. Therefore, it is more effective and advantageous for the HPFD to improve its technical capacity for such civil engineering interventions, and then start these works in the near future.

For the typical type of the landslip, any SWC works will not be taken for the Project based on the reasons below.

- ◆ Restoration of the typical type of landslip requires detail study with topographic survey, water channel observation, geology study, boring tests, analysis water flow system, slope stability analysis, comparison analysis with some case of works, etc.
- ◆ After the detail study above, detail design work shall be taken.
- ◆ Unfortunately, HPFD doesn't have civil engineers or specialists for those works above.
- ◆ The study takes long time period with much costs.

Basic Principles for Landslides/ Landslips related SWC works for the Project

Therefore, in the Project plan, the SWC works related to the landslide/landslip are selected with following criteria and principles.

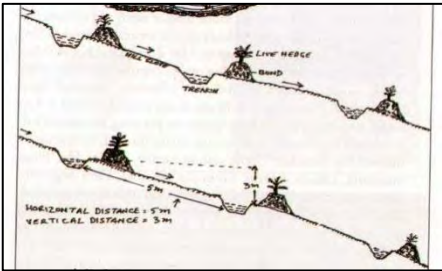



- ◆ SWC works for the landslides which are located at both of upper and lower side of the major road will not be taken up. However, if conditions allow, SWC works for the landslides which are located down side of the road with enough distance from the road can be taken up,
- ◆ SWC works inside forest areas without relation with road and other important properties will be taken up, and
- ◆ SWC works for the landslip will not be taken up



2.2 Description of SWC Works

The details of recommended SWC works listed in the Table 2.1 are described in Table 2.2 .

Table 2.2 Potential SWC Works for the Project

Type of SWC Works	Description
I. Soil and water conservation measures (1) Bio-engineering measures at slope	
Contour wattling [live hedge, which is composed with trench, banking, planting on banking]	This will be used to improve the condition of water and soil moisture in the forest area or the planation places. The tangible operations of the work are:

Type of SWC Works	Description
<p>(Example picture quoted from the Manual)</p> 	<p>Excavation of trench along the planation line Banking the excavated soil under the trench The seedlings will be planted on the bank in case of usage of this work with planation work.</p>
<p>I. Soil and water conservation measures (1) Bio-engineering measures at stream or gully</p>	
<p>Vegetated Palisade Wall</p> <p>(Example picture quoted from the Manual)</p> 	<p>This work will be used for i) stabilization of gully/ small stream bed and ii) generating of vegetation recovery.</p> <p>Tangible operations of the work are: Digging holes for wood sticks Installation of the wood stick into the hole Tie the sticks and fill the gaps</p> <p>This structure is not strong or weak for run-off water and sediment flow. Therefore, this type will be used for the stream/ gully where no usual water flows and almost no sediment flow is expected.</p>
<p>Live check dam Brush wood check dam</p> <p>(Example picture quoted from the Manual)</p> 	<p>This work will be used for i) stabilization of gully/ small stream bed and ii) generating of vegetation recovery</p> <p>Tangible operations of the work are: Installation of stakes to hold the main body which is composed with wooden cross bars Install the cross bars which save silt and moisture</p> <p>This structure is not strong or weak for run-off water and sediment flow. Therefore, this type will be used for the stream/ gully where no usual water flows and almost no sediment flow is expected.</p>
<p>I. Soil and water conservation measures (2) Mechanical measures</p>	
<p>Dry stone check dam</p> <p>(Example picture quoted from the Manual)</p> 	<p>This will be used for i) stabilization of gully/ small stream bed by decreasing the gradient of gully/ stream bed and storage debris and silt behind the dam, ii) generate vegetation basis behind the dam, and iii) improve water and soil moisture condition of the surrounding area.</p> <p>Tangible operations of the work are: Excavation of the gully/ stream bed to install the dam basis Install lose stones and boulders</p> <p>This structure is not strong compared with gabion/ masonry/concrete dams. Therefore, this will be used at small scale stream or stream with the width between 1 to 3m. the height of the dam shall be less than 1.5m including foundation.</p>

Type of SWC Works	Description
<p>Gabion check dam/ wire crate check dam</p> <p>(Example picture quoted from the Manual)</p> 	<p>This will be used for i) stabilization of gully/ small stream bed by decreasing the gradient of gully/ stream bed and storage debris and silt behind the dam, ii) generate vegetation basis behind the dam, and iii) improve water and soil moisture condition of the surrounding area.</p> <p>Tangible operations of the work are: Excavation of the gully/ stream bed to install the dam basis Set gabion net or wire crate Install lose stones and boulders Close the net or crate</p> <p>This structure is stronger than dry stone check dam but not strong compared with masonry/concrete dams. Therefore, this will be used at small to middle scale stream or stream with the width between 2 to 6m. The height of the dam will be less than 1.5m including foundation excludes spill way.</p> <p>(Size of Gabion check dam/ wire crate dam) 2 sizes of check dam were considered in this report. - Small size: L=6m, H=1.5m (exclude spill way) - Middle size: L=12m, H= 1.5m (-ditto-)</p>
<p>Masonry drop structure</p> <p>Masonry drop structure with apron</p>	<p>This will be used for i) stabilization of small or middle scale stream bed by decreasing the gradient of stream bed and storage debris, silt and water behind the dam, ii) generate vegetation basis behind the dam, and iii) improve water and soil moisture condition of the surrounding area. Apron will be used for water retention for animals just in case.</p> <p>Tangible operations of the work are: Excavation of the stream bed and side to install the dam basis Build stone with cement which fills the gaps between stone/boulders</p> <p>This structure is stronger than gabion check dam but not strong compared with concrete dam. Therefore, this will be used at middle scale stream or stream with the width between 2 to 6m. difference between this and gabion is porous or not and this will be used for water retention purpose to improve the dry condition at the site. The height of the dam will be between 1.5m to 3.0 m including foundation excludes spill way.</p> <p>(Size of Masonry drop) 2 sizes of drop were considered in this report. - Small size: L=6m, H=1.5m (exclude spill way) - Middle size: L=12m, H= 2.5m (-ditto-)</p>
<p>Silt detention structure (concrete)</p> <p>(Example picture quoted from the Manual)</p> 	<p>This will be used for i) stabilization of middle or large scale stream/river bed by decreasing the gradient of stream bed and storage debris, silt and water behind the dam, ii) generate vegetation basis behind the dam, and iii) improve water and soil moisture condition of the surrounding area. Apron will be used for water retention and prevent erosion of the lower side of the structure.</p> <p>Tangible operations of the work are: Excavation of the stream bed and side to install the dam basis Build framework Installation of concrete into the frame</p> <p>This structure is the strongest check dam among the several types. Also, this type is massive concrete without porous. Therefore, this will be used at middle or big scale stream/river with the width</p>

Type of SWC Works	Description
	<p>between 6 to 12m. This will be used for water retention purpose to improve the dry condition at the site. The height of the dam will be between 3m to 4.5 m including foundation excludes spill way.</p> <p>(Size of concrete silt detention dam) 3 sizes of dam were considered in this report. - Small size: L=6m, H=1.5m (exclude spill way) - Middle size: L=12m, H= 2.5m (-ditto-) - Large size: L= 20m, H= 4.0m (-ditto-), with side wall</p>
Concrete pond	<p>This will be used for i) retention of water, ii) improvement of water and soil moisture condition of the surrounding area, and iii) water supply for animals in the dry weather area.</p> <p>Tangible operations of the work are: Excavation of the gentle slope Build framework Installation of concrete into the frame</p> <p>This structure is water retention pond. The water will be retained in the pond and the overflow water will improve the water and soil moisture condition surrounding the structure. Also, it can provide water to the animals in case.</p> <p>(size of concrete pond) 3 sizes of dam were considered in this report. - Small size: L=5.8m, Depth=1.0m - Middle size: L=8.8m, H= 1.0m - Large size: L= 15.8m, H= 2.0m</p>
<p>II. Measures for landslide control For Land slide triggered by weak geology</p>	
<p>Combination of: (a) Retaining wall (b) Series of staggered retaining walls on the slope (c) Geo-jute (d) Log crib (e) Gunny bag</p>	<p>The series of structures will be used to restore the eroded or collapsed slope.</p> <p>(a) Retaining wall: This will be constructed at the lowest position of the landslide. High pressure of the soil, with water in case, to the wall is expected. Therefore, the wall shall be constructed by masonry or concrete.</p> <p>(b) Series of staggered retaining walls on the slope This will reduce run-off water speed and divert the water flow, then prevent slope erosion and stabilize the slope. Also, it becomes vegetation recovery basis, because the wall can keep soil and soil moisture behind the wall.</p> <p>(c) Geo-jute This will protect the slope surface between wall to wall, and keep soil moisture, then accelerates vegetation recovery.</p> <p>(d) Log crib, (e) gunny bag It will be used to support the function of (b) above.</p>

Source: JICA Study Team (2017) based on the information of the Manual of HPFD 2012

2.3 Categorization of WSC Works applied to components of the Project

The SWC works are planned one of the sub-components of Component 1, Sustainable Forest Management. In Component 1, the subcomponents are classified into two categories as PFM (Participatory Forest Management) Mode and Departmental Mode.

(1) SWC Works in PFM Mode

Simple and easy works is required for the SWC works in PFM mode, because the local people who will work for this are assumed as normal persons without any expertise of civil engineering. Therefore, the Bio-engineering measures on the slope and small gully or stream will be taken as this category.

1) ex-situ SWC works (Drainage Line Treatment) with PFM Mode

Not limited to below but following measures for small gullies and streams will be mainly taken up for the PMF mode.

(Bioengineering measures): Vegetated palisade wall, live check dam, brush wood check dam

(Mechanical measure): Dry stone check dam, masonry check dam, masonry pond

2) in-situ SWC works with PFM Mode

The major purpose is to improve soil and moisture regimes of the treatment areas such as plantation areas to improve the survival and growth of planted trees. Not limited to below, but following measures to be adopted reflecting the site conditions and treatment objectives

contour wattling, pits, vegetative barriers, dry stone check dams/walls

(2) SWC Works in Departmental Mode

1) ex-situ SWC Works with Departmental Mode

All of recommended SWC works are considered to be implemented in this mode, reflecting site conditions and objectives of SWC works. Additionally, the further capacity development for the HPFD staff members will be required during the preparatory stage.

2) in-situ SWC works with Departmental Mode

Basically, the same approach and methods as the PFM mode will be adopted

(3) Categorization of SWC Works in Component 1:Sustainable Forest Management

With consideration of the conditions above, all recommendable SWC works are categorized below.

Table 2.3 SWC Works Measures for Sustainable Forest Management

PFM Mode				
Category		Place	Measures	In/Ex-situ
I. Soil and water conservation measures	(1) Bio-engineering measures	Slope	Contour wattling [live hedge, which is composed with trench, banking, planting on banking]	In-situ
		Small stream or gully	Vegetated Palisade Wall	Both In/Ex-situ
		Small stream	Live check dam Brush wood check dam	
	(2) Mechanical measures	Small stream	Dry stone check dam	Ex-situ
		Dry hill	Masonry pond	
Department Mode				
Category		Place	Measures	In/Ex-situ
I. Soil and water conservation measures	(1) Bio-engineering measures	Slope	Contour wattling [live hedge, which is composed with trench, banking, planting on banking]	In-situ
		Small stream or gully	Vegetated Palisade Wall	Both In/Ex-situ
		Small stream	Live check dam Bush check dam	
	(2) Mechanical measures	Small stream	Dry stone check dam Gabion check dam	Mostly Ex-situ
		Lower stream	Gabion/ Masonry/ Concrete drop structure Masonry/concrete drop structure with apron Silt detention structure (concrete)	
		Dry hill	Concrete/ masonry pond	Both In/Ex-situ
II. Measures for landslide control	Land slide triggered by weak geology	Landslide	Combination of: (a) Retaining wall (b) Series of staggered retaining walls on the slope (c) Geo-jute (d) Log crib (e) Gunny bag	Mostly Ex-situ

Source: JICA Study Team (2017)

(4) SWC Works for Other Components

SWC works will be used for the other components, 1) Component 2: Biodiversity Conservation, and 2) Component 3: Community development and livelihood improvement.

1) SWC Works for biodiversity conservation

Water supply for animals, is required for this component. Drinking ponds are proposed for this but concrete pond is not recommended from landscape aspect. Three sizes of pond designs are considered in this report. And the small or middle size ponds are recommended for this purpose. However, the actual size shall be determined based on the condition of the site. In general, middle size pond shall be used at pastures/ grasslands and small size pond shall be used for small pastures/ grasslands and forest areas.

2) SWC works for community development

Big scale works and any measures which requires heavy equipment or special engineering knowledge are not considered for this component, because most of the work will be implemented by the local people. Therefore, in case the water harvesting is necessary, small size masonry check dam and/or pond are proposed.

3 Indicative SWC Works Models

3.1 Indicative Concepts of SWC Work

The concept of the SWC works are considered based on three categorized areas such as, 1) cold desert area, 2) dry low land area ,and 3) normal forest area. The characteristics of these are described below. However actual plan, design and implementation shall be site specific and objective oriented.

(1) Cold Desert Area

1) Condition and problem of this area on the aspect of water, soil, and soil moisture conditions

The area in northern part HP, Lahaul division, Spiti division and northern part of Kinnaur division are typical type of areas in this category. The natural condition characteristics of this area are less rainfall (almost zero), cold temperature, much snow falls, poor and thin soil layer, and steep topography. Most of the forest activities such as plantation, ANR are not implemented much due to those natural conditions. However, the necessity of SWC works are high, the reasons are described below.

The area is severe for vegetation development due to the weather conditions mainly. Meanwhile, much snow fall makes much water flow and run-off after snow melting and they erode the slope, stream floor and banks and grassland. Therefore, for the aspect of forest are conservation, SWC works shall be implemented to resolve these problems and improve the forest area condition.

2) Necessary and proposal of SWC Work measures for this area

Major target places for the SWC works are slope of pasture, grassland, small stream such as zero level river, and small gully area. In the stream, the major problems are caused by snow melted water; therefore, stream/ gully plug structures such as concrete, masonry, gabion, and drystone check dams are considered. However, concrete check dam is not available in the area due to less experience by HPFD and masonry type is also not recommended, because the weight of snow which will be piled behind the check dam is estimated much and when it will be melted the behind of the check dam will be filled by water. Masonry type doesn't have porous function which will release the water to reduce the pressure. It means the masonry type is not much strong enough as same as concrete but can't reduce the pressure as same as porous type dam. Therefore, masonry type is not recommended. Recommended type of check dam is gabion type and drystone type for gentle stream gradient place.

3) Effectiveness of the measures in this area on aspect of SWC

These check dams will store the snow up to spring to early summer season, the melted snow water will be released little by little and flow to the lower stream without erosion. Also, the stored snow or melted snow water will be released through the dam little by little, and improve the water and soil moisture condition of surrounding places.

(2) Dry Low Land Area

1) Condition and problem of this area on the aspect of water, soil, and soil moisture condition

The area of low land of Bilaspur, Mandi, Kullu, and Rampur are included. The area condition is described as below:

Very less rainfall and almost no snow falls in this area and the temperature is high. During the dry season, most of the vegetation get draught damage and tree and grass growth are much low. Also, the dry weather condition accelerates the pasture/ grassland degradation. Therefore, in this area, general forest function such as water storage and provision of good habitats for animals don't work well. Especially, the planted seedlings in this area has not good survival ratio of due to shortage of water and soil moistures for the planted seedlings.

2) Necessary and proposal of SWC Work measures for this area

Due to the sever dry weather condition, water, soil moisture conditions are poor in this area. They make un-healthy forest condition and loose the general forest functions. Therefore, recovery of the water and soil moisture condition in this area is crucial. The water and soil moisture shortage shall be resolved by SWC works on the slope area.

Concrete silt retention dams, masonry or gabion check dams, and water ponds are recommended for this area. The concrete silt retention dam and water pond are recommended in the lower place where the river or stream floor and slope gradient are gentle, because steep slope are not appropriate to reserve water. Masonry check dam will be implemented on the middle portion and gabion check dam will be installed in the upper-stream of stream. The type of check dam will be considered based on the gradient and width of the stream.

For the planation area, to catch and reserve the rainfall and run-off water on the slope, and accelerate the penetration of water into the ground is very important for improvement of the water and soil moisture condition in the plantation area. For this point of view, the trench and banking works along the planted seedling line on the contour-line is recommend. Some of the vegetation measures such as vegetation barrier is nominated in the HPFD manual 2012. However, in this dry area, these are considered not effective and not recommended.

3) Effectiveness of the measures in this area on aspect of SWC

The check dams in the rivers or stream play to generate water pockets behind the dams at the beginning stage after construction. The pockets will be filled by silt, sand, gravels time by time and the water pockets will be replaced to the soil pockets finally. Even as the soil pockets behind the dams, they will storage water in themselves during rainy season and the soil can keep the moisture during the dry season. Therefore, the check dams can work to reserve water and soil moisture whole seasons and right after from the construction and after the construction.

The trench work along the planted seedling can catch and reserve water and provide them to the planted seedlings during the rainy season. The storage water will improve the soil moisture condition for the planted seedlings and help them to grow. Therefore, the trench work can assist the planted trees growth and improve the survival ratio of the plantation work.

(3) Normal Forest Area

1) Condition and problem of this area on the aspect of water, soil, and soil moisture condition

There are many forest areas in this area, because the weather condition, moderate amount of rainfall, not cold temperature, is good for trees to grow. However, monsoon weather tend to make damage on both slope and stream areas. The high intention rainfall makes erosion on the slope and generate debris in the stream. The stream floor and banks are eroded by the flush flood and sediment flow. The eroded soil at stream floor and banks are erodes them at the lower portion of the stream again. The erosion of the stream floor and banks influence not only the eroded places but also the lower portions. The high intention rainfall makes not only erosion on the slope but also sometimes cause the landslide. The landslide will generate much amount of sediment which will flow the stream and erode the stream floor and banks. Therefore, the landslide also one of the biggest issues to be tackled in this area. Meanwhile, this area has variety of conditions such as, dry weather area, cold area on the high-altitude. These areas have the problems as same as the other areas which are described above.

2) Necessary and proposal of SWC Work measures for this area

The typical problems in this area is erosion by high intention rainfall. Therefore, restoration of erosion, landslide, protect stream/ river floor and banks against the flash flood and sediment flow are necessary. Trench and banking on the slope can work to catch the eroded soil and keep the water/ soil moisture in the plantation area. Some of vegetation barrier can work here in case the HPFD has work experience. The recommended SWC works measure in the stream/ river are check dams. The type of check dams will be considered based on the stream or river condition such as, whether usual water flow are there or not, stream/ river width and gradient of floor. The stream is steep and mostly no usual water flow in the upper stream; therefore, dry stone dam or gabion check dam are recommended there. In the middle of the stream/river, mostly usual water is expected; therefore, the dry stone check dam is not recommended due to unstable structure for these. Therefore, gabion or masonry check dams are recommended. In the lower-stream, much usual water flow and wide stream/ river are expected. The water pressure is much more than the upper-stream; therefore, concrete or masonry check dams are recommended.

The SWC works measure on the landslide are different from the other areas above. Due to the steep slope area in HP mountainous areas, most of the landslides has steep slope gradient, the erosion continues in most of the case; therefore, natural vegetation recovery can't be expected. Therefore, SWC works need to stop erosion first. And also the structures are expected become vegetation recovery bases. Based on this consideration, masonry retention wall is planned on the lowest place of the landslide. The run-off speed and energy are much and easily erode the slope. Therefore, run-off water's speed and energy shall be reduced on the slope of the landslide. The staggered retention walls are planned for this function. The gabion walls can't be constructed closely each other, because the excavation area of the lower places effect to the upper-side. Some distance shall be kept between walls. Therefore, staggered distribution is recommended. The log crib and gunny bags with terracing work are expected supplement the slope stabilization between walls and becomes vegetation bases. The

slope covering work can prevent soil erosion, stabilize the slope, and keep the moisture of the soil. It will work for acceleration of vegetation recovery.

3) Effectiveness of the measures in this area on aspect of SWC

i) Stream area

The check dams will work to prepare pocket behind themselves and reserve the sediment there. The piled sediment behind the dams has gentle slope generally and it can reduce the water and sediment flow in the stream. Then, they can prevent the further erosion in the stream and lead the water and sediment flow safely to the down-stream. They are expected to work for stability of the stream/rivers and also the pocket filled by flowed sediment can be expected to become bases of vegetation recovery.

ii) Slope area

the combination of trench and banking works can be expected to work cut the run-off on the slope and reduce erosion. Also, they can keep water and soil moisture for the planted seedling. Both prevention of erosion and keep moisture can be provided by the works.

iii) Landslide area

The combination of retention wall, staggered walls, log crib, gunny bags with terracing and slope covering can work stop further erosion on the landslide and work for vegetation recovery. The vegetation recovery is essential for the slope stabilization. Therefore, these SWC works measures are expected as supporting facilities for the vegetation recovery, because these artificial structures can't work for long time but they can support the vegetation self-recovery which can keep the slope stability and healthy forest condition.

3.2 Indicative SWC Works Models

The indicative SWC works models are considered for each type of categorised areas.

The dimension or scale of the structures such as length, height of check dams is considered based on the typical size of the stream/rivers. And respective models for PFM mode and departmental mode are considered for each area. The indicative SWC works models for each area for both of PFM and departmental mode are shown in tables under this section. The models are indicative and the actual types, designs, and quantities of SWC works to be introduced shall be decided based on the site-specific conditions and requirements of the intervention areas based on the results of site specific survey, planning and designs.

(1) Cold Desert Area

[Ex-situ SWC Works]: The indicative PFM mode model is shown below.

Table 3.1 Indicative PFM Mode SWC Works in Cold Desert Area (ex-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)	0	ha
Contour line wattling	(800seedling/ha)	10	ha
Contour line wattling	(400seedling/ha)	0	ha
Vegetated Palisade Wall		0	m
Live check dam		0	nos
Brush wood check dam		3	nos
Dry stone check dam	S-size	1	nos
Gabion check dam	S-size	1	nos
Gabion check dam	M-size	0	nos
Masonry check dam	S-size	0	nos
Masonry check dam	M-size	0	nos
Concrete check dam	M-size	0	nos
Concrete check dam	L-size	0	nos
Masonry pond	S-size	1	nos
Masonry pond	M-size	0	nos
Masonry pond	L-size	0	nos
Landslide counter measures*1)		0	ha

Source: Prepared by JICA Study Team (2017)

[Ex-situ SWC Works]: The indicative departmental mode model is shown below.

Table 3.2 Indicative Departmental Mode SWC Works in Cold Desert Area (ex-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)	0	ha
Contour line wattling	(800seedling/ha)	10	ha
Contour line wattling	(400seedling/ha)	0	ha
Vegetated Palisade Wall		0	m
Live check dam		0	nos
Brush wood check dam		0	nos
Dry stone check dam	S-size	20	nos
Gabion check dam	S-size	10	nos
Gabion check dam	M-size	5	nos
Masonry check dam	S-size	0	nos
Masonry check dam	M-size	0	nos
Concrete check dam	M-size	0	nos
Concrete check dam	L-size	0	nos
Masonry pond	S-size	2	nos
Masonry pond	M-size	0	nos
Masonry pond	L-size	0	nos
Landslide counter measures*1)		0	ha

Source: Prepared by JICA Study Team (2017)

(2) Dry Low Land Area

(2) - 1) [PFM mode]

Table 3.3 Indicative PFM Mode SWC Works in Dry Low Land Area (in-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)	0	ha
Contour line wattling	(800seedling/ha)	10	ha
Contour line wattling	(400seedling/ha)	0	ha
Vegetated Palisade Wall		0	nos
Live check dam		0	nos
Brush wood check dam		10	nos
Dry stone check dam	S-size	0	nos
Gabion check dam	S-size	2	nos
Gabion check dam	M-size	0	nos
Masonry check dam	S-size	1	nos
Masonry check dam	M-size	0	nos
Concrete check dam	M-size	0	nos
Concrete check dam	L-size	0	nos
Masonry pond	S-size	2	nos
Masonry pond	M-size	0	nos
Masonry pond	L-size	0	nos
Landslide counter measures*1)		0	ha

Source: Prepared by JICA Study Team (2017)

Table 3.4 Indicative PFM Mode SWC Works in Dry Low Land Area (ex-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)	0	ha
Contour line wattling	(800seedling/ha)	2	ha
Contour line wattling	(400seedling/ha)	0	ha
Vegetated Palisade Wall		0	nos
Live check dam		0	nos
Brush wood check dam		5	nos
Dry stone check dam	S-size	5	nos
Gabion check dam	S-size	2	nos
Gabion check dam	M-size		nos
Masonry check dam	S-size		nos
Masonry check dam	M-size	1	nos
Concrete check dam	M-size		nos
Concrete check dam	L-size		nos
Masonry pond	S-size		nos
Masonry pond	M-size	1	nos
Masonry pond	L-size		nos
Landslide counter measures*1)			ha

Source: Prepared by JICA Study Team (2017)

(2) – 2) [Departmental mode]

Table 3.5 Indicative Departmental Mode SWC Works in Dry Low Land Area (in-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)	0	ha
Contour line wattling	(800seedling/ha)	5	ha
Contour line wattling	(400seedling/ha)	0	ha
Vegetated Palisade Wall		0	nos
Live check dam		0	nos
Brush wood check dam		0	nos
Dry stone check dam	S-size	5	nos
Gabion check dam	S-size	0	nos

Measures	Specification	Quantity	Unit
Gabion check dam	M-size	2	nos
Masonry check dam	S-size	0	nos
Masonry check dam	M-size	1	nos
Concrete check dam	M-size	0	nos
Concrete check dam	L-size	0	nos
Masonry pond	S-size	2	nos
Masonry pond	M-size	0	nos
Masonry pond	L-size	0	nos
Landslide counter measures*1)		0	ha

Source: Prepared by JICA Study Team (2017)

Table 3.6 Indicative Department Mode SWC Works in Dry Low Land Area (ex-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)	0	ha
Contour line wattling	(800seedling/ha)	5	ha
Contour line wattling	(400seedling/ha)	0	ha
Vegetated Palisade Wall		0	nos
Live check dam		0	nos
Brush wood check dam		0	nos
Dry stone check dam	S-size	0	nos
Gabion check dam	S-size	0	nos
Gabion check dam	M-size	2	nos
Masonry check dam	S-size	0	nos
Masonry check dam	M-size	1	nos
Concrete check dam	M-size	0	nos
Concrete check dam	L-size	1	nos
Masonry pond	S-size	0	nos
Masonry pond	M-size	1	nos
Masonry pond	L-size	1	nos
Landslide counter measures*1)		0	ha

Source: Prepared by JICA Study Team (2017)

(3) Normal Forest Area

(3) - 1) [PFM mode]

Table 3.7 Indicative PFM Mode SWC Works in Normal Forest Area (in-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)	0	ha
Contour line wattling	(800seedling/ha)	10	ha
Contour line wattling	(400seedling/ha)	0	ha
Vegetated Palisade Wall		0	nos
Live check dam		0	nos
Brush wood check dam		5	nos
Dry stone check dam	S-size	5	nos
Gabion check dam	S-size	0	nos
Gabion check dam	M-size	0	nos
Masonry check dam	S-size	1	nos
Masonry check dam	M-size	0	nos
Concrete check dam	M-size	0	nos
Concrete check dam	L-size	0	nos
Masonry pond	S-size	2	nos
Masonry pond	M-size	1	nos
Masonry pond	L-size	0	nos
Landslide counter measures*1)		0	ha

Source: Prepared by JICA Study Team (2017)

Table 3.8 Indicative PFM Mode SWC Works in Normal Forest Area (ex-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)		ha
Contour line wattling	(800seedling/ha)	2	ha
Contour line wattling	(400seedling/ha)		ha
Vegetated Palisade Wall			nos
Live check dam			nos
Brush wood check dam		5	nos
Dry stone check dam	S-size		nos
Gabion check dam	S-size	5	nos
Gabion check dam	M-size	2	nos
Masonry check dam	S-size	2	nos
Masonry check dam	M-size	1	nos
Concrete check dam	M-size		nos
Concrete check dam	L-size		nos
Masonry pond	S-size	2	nos
Masonry pond	M-size	1	nos
Masonry pond	L-size		nos
Landslide counter measures*1)		0	ha

Source: Prepared by JICA Study Team (2017)

(3) – 2) [Department mode]

Table 3.9 Indicative Department Mode SWC Works in Normal Forest Area (in-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)		ha
Contour line wattling	(800seedling/ha)	5	ha
Contour line wattling	(400seedling/ha)		ha
Vegetated Palisade Wall			nos
Live check dam			nos

Measures	Specification	Quantity	Unit
Brush wood check dam			nos
Dry stone check dam	S-size		nos
Gabion check dam	S-size	2	nos
Gabion check dam	M-size		nos
Masonry check dam	S-size	1	nos
Masonry check dam	M-size	1	nos
Concrete check dam	M-size	1	nos
Concrete check dam	L-size		nos
Masonry pond	S-size	3	nos
Masonry pond	M-size	1	nos
Masonry pond	L-size		nos
Landslide counter measures*1)		0.1	ha

Source: Prepared by JICA Study Team (2017)

Table 3.10 Indicative Department Mode SWC Works in Normal Forest Area (ex-situ)

Measures	Specification	Quantity	Unit
Contour line wattling	(1,100seedling/ha)		ha
Contour line wattling	(800seedling/ha)	4	ha
Contour line wattling	(400seedling/ha)		ha
Vegetated Palisade Wall			nos
Live check dam			nos
Brush wood check dam			nos
Dry stone check dam	S-size		nos
Gabion check dam	S-size	1	nos
Gabion check dam	M-size	1	nos
Masonry check dam	S-size		nos
Masonry check dam	M-size	1	nos
Concrete check dam	M-size		nos
Concrete check dam	L-size	1	nos
Masonry pond	S-size		nos
Masonry pond	M-size	1	nos
Masonry pond	L-size	1	nos
Landslide counter measures*1)		0.1	ha

4 Implementation Structure

4.1 PFM Mode

The major SWC works to be implemented under PFM mode are contour wattling on slope and vegetated palisade wall, live check dam, and brush wood check dam on small stream or gully. Simple and easy construction structures shall be selected. Therefore, specific designs for these are not required. The community level implementing bodies can carry the work with assistance by the HPFD.

4.2 Departmental Mode

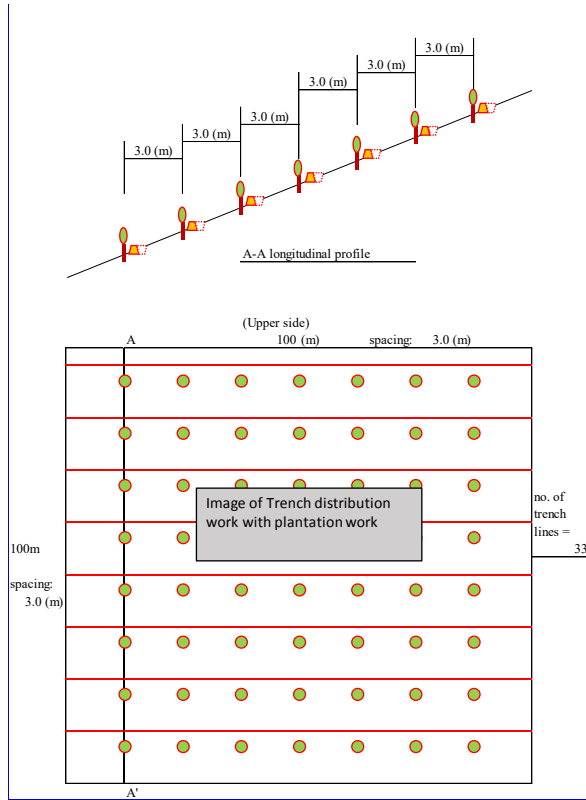
The major SWC works to be implemented under the Department mode are all types of the structures described above. Most of the structures construction except the bio-engineering measure require detail design work. Especially this is crucial for the landslide restoration work.

Also, the construction of these works except bio-engineering works require professional work by contractors. HPFD can prepare designs and implementation by direct employment and direct material / equipment procurement. However, for the effective and efficient implementation, it is better for

HPFD offices to concentrate on supervision of the contractor. Therefore, contract out for construction work instead of direct implementation by HPFD is appreciated. The detail design for the mechanical as well as landslide measures are crucial. Two ways are recommended for this as; i) contract out and ii) direct design work by HPFD offices after capacity development programmes.

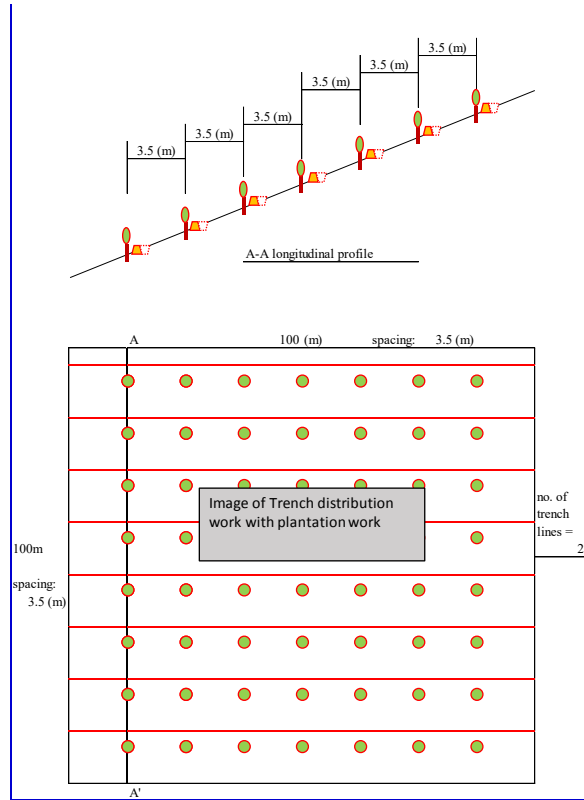
5 Indicative Designs of Major SWC Works

Indicative designs of major potential SWC works for the Project are described hereunder.

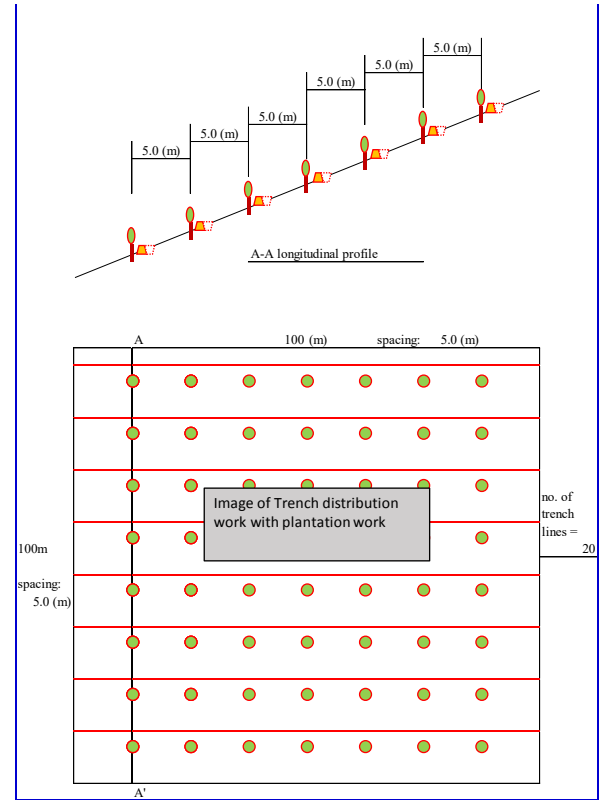


Indicative design of **Contour Line Wattling**

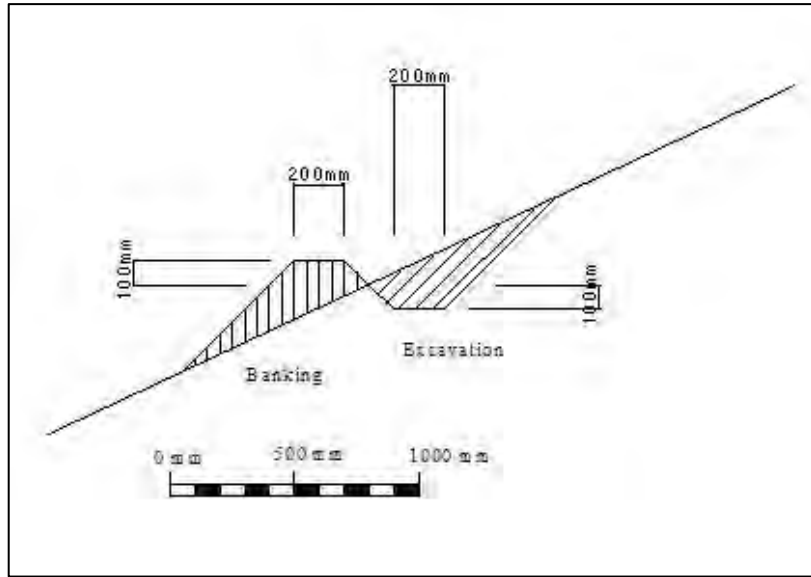
With high density plantation (1,100 seedling /ha)



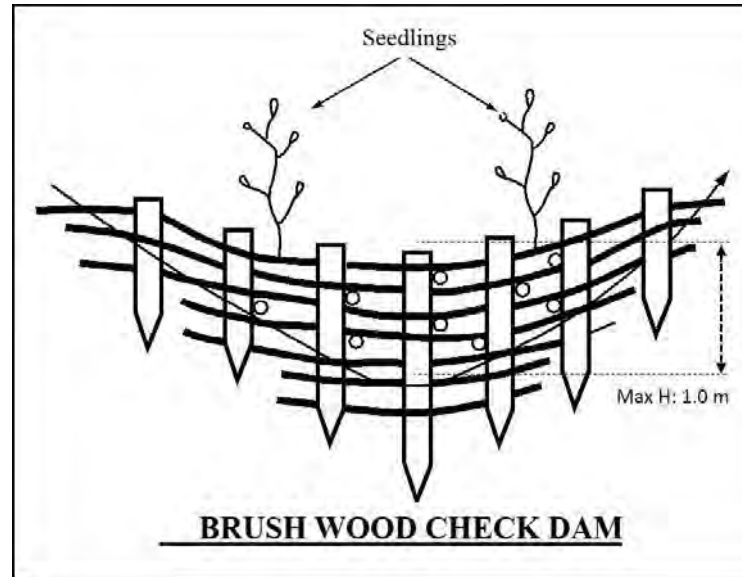
with middle density plantation (800 seedling /ha)



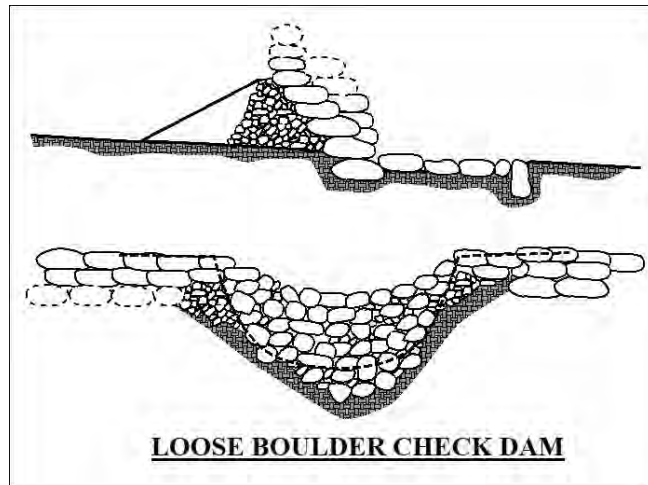
with low density plantation (400 seedling/ ha)



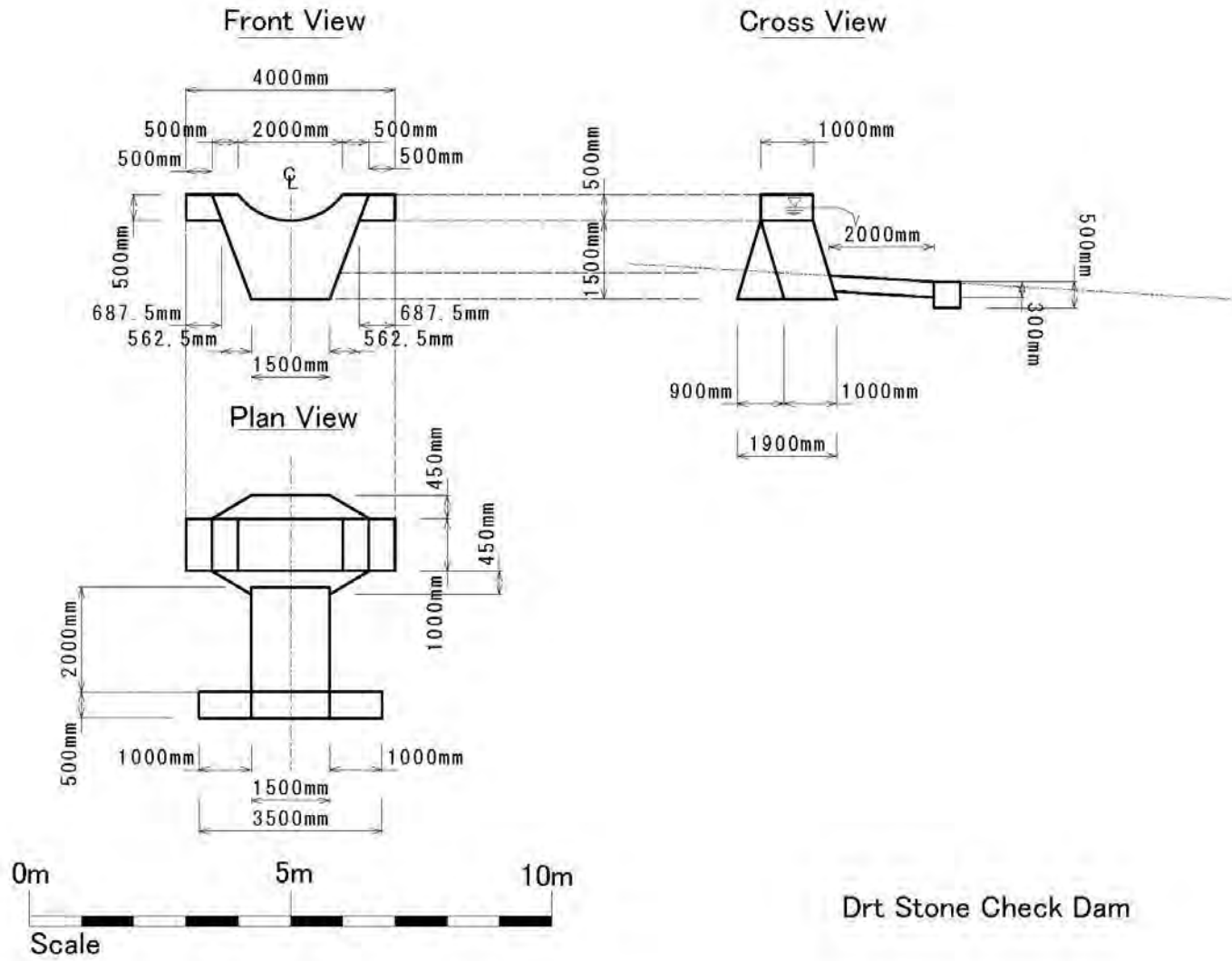
Details of **Trench Work of Contour Line Wattling**

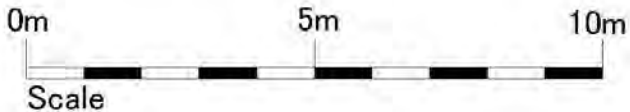
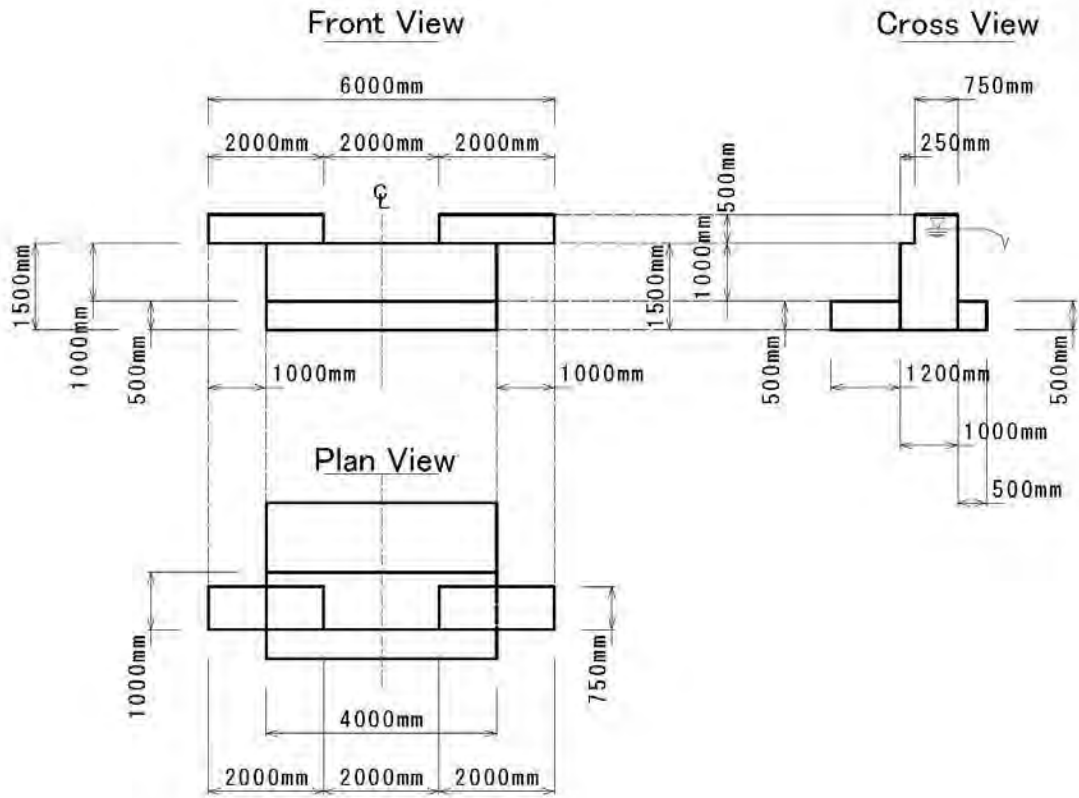


Ref: A manual on Soil and Water Conservation with focus on Watershed management

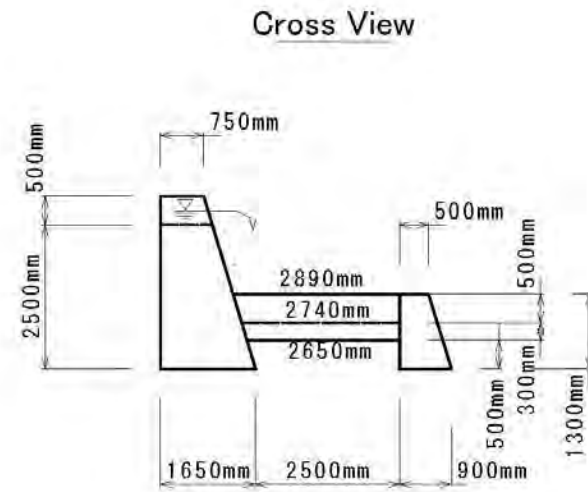
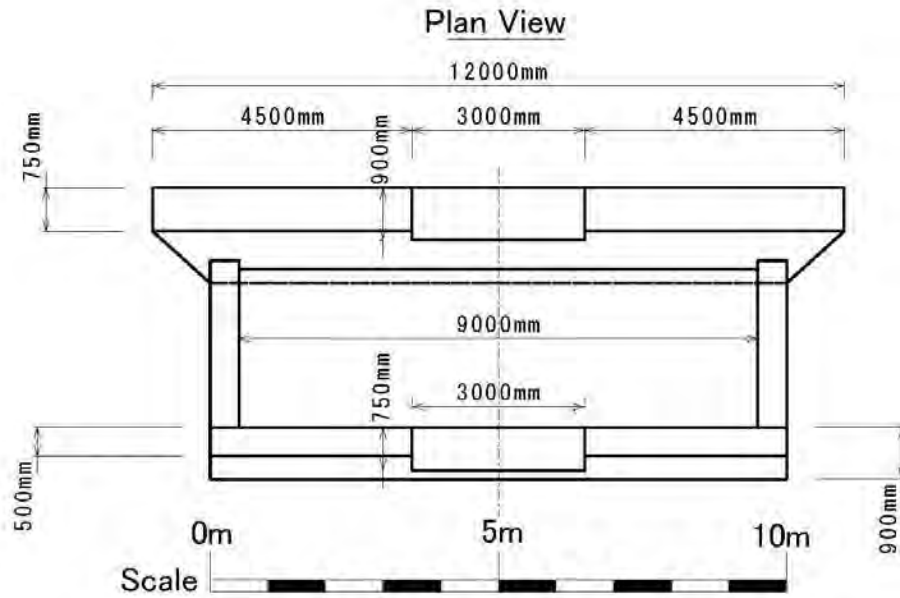
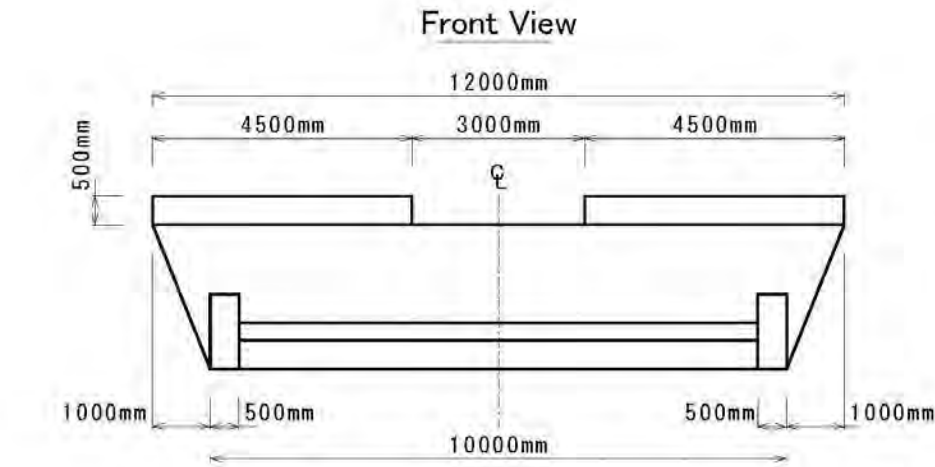


Ref: A manual on Soil and Water Conservation with focus on Watershed management

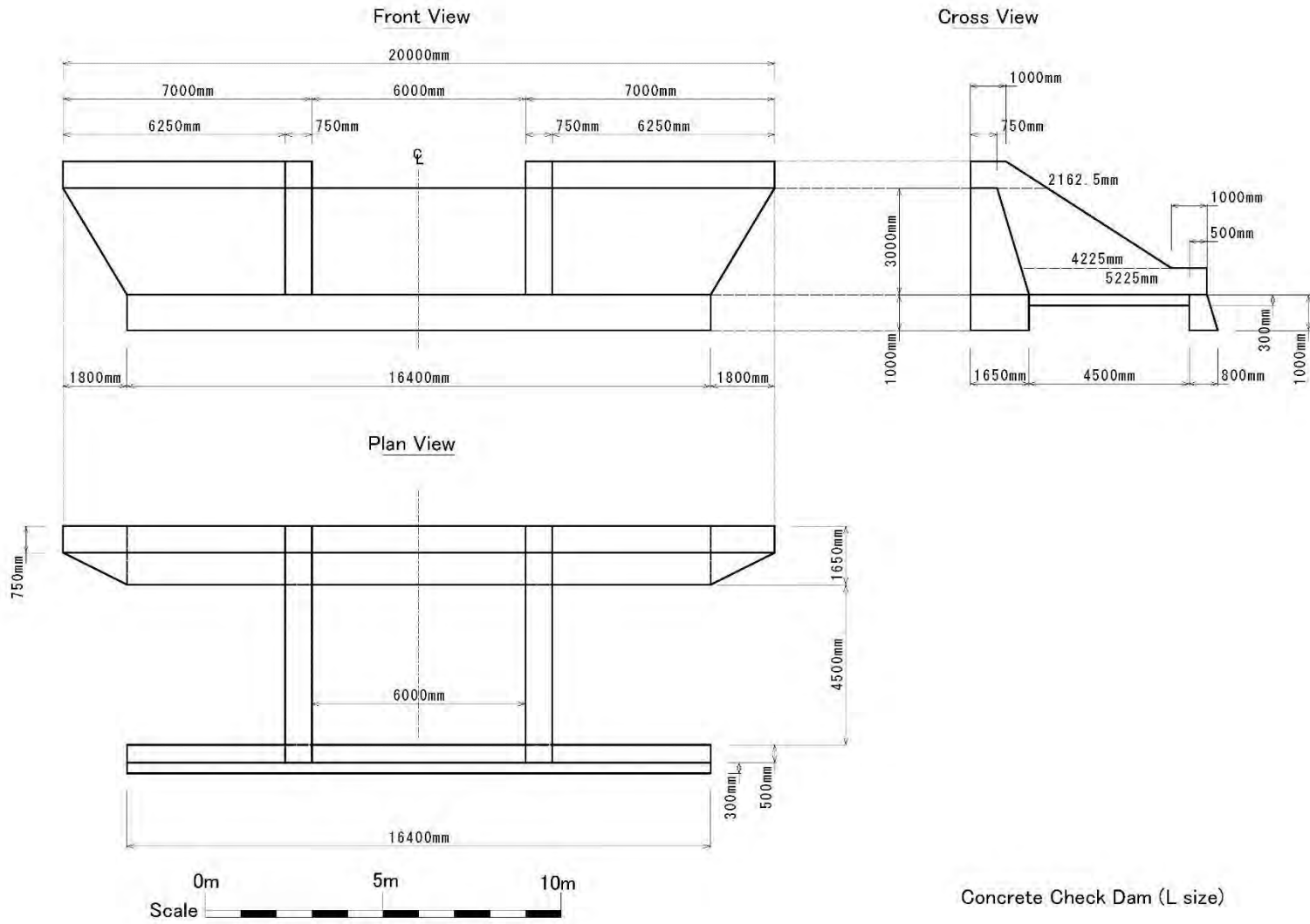


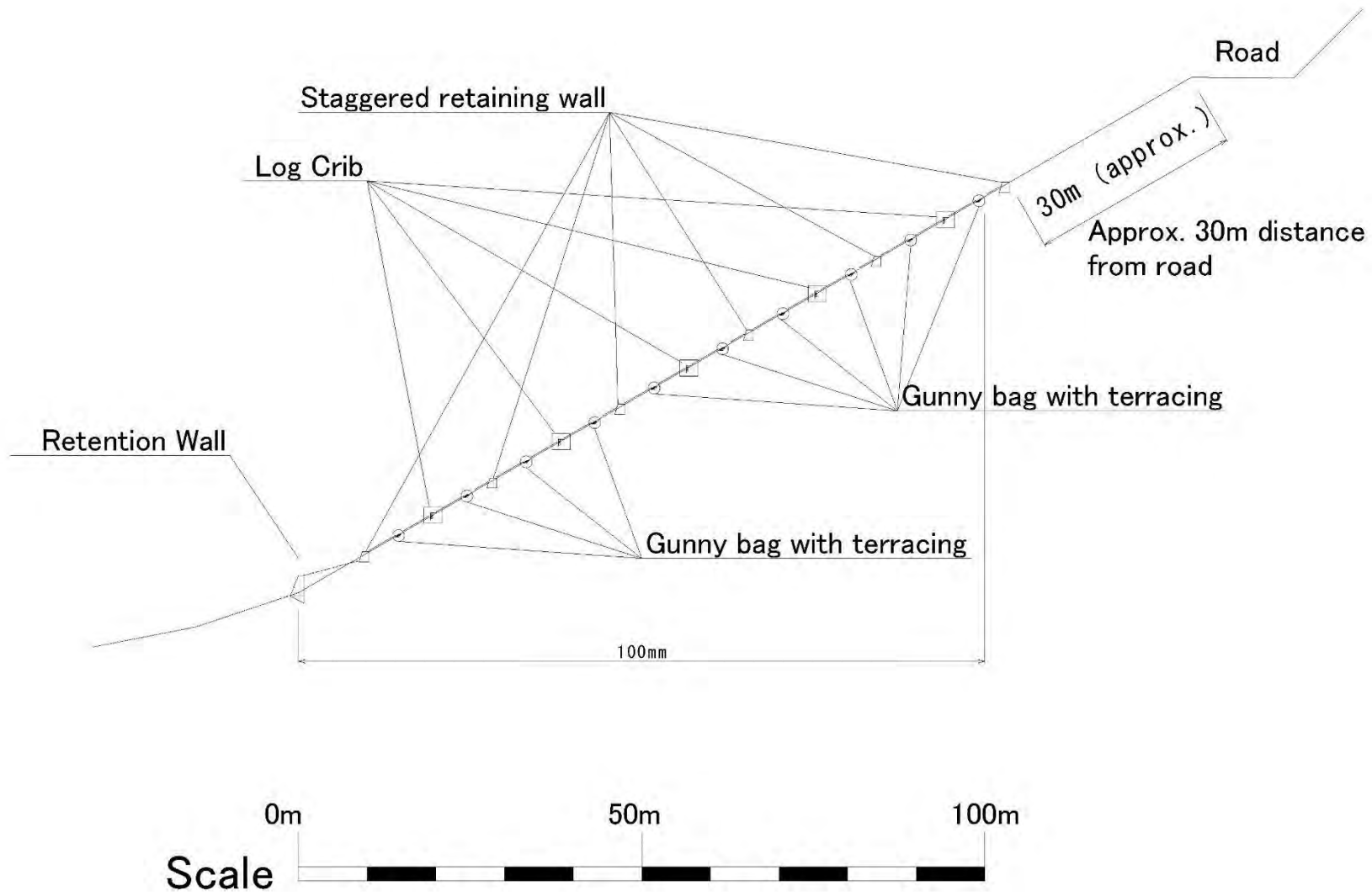


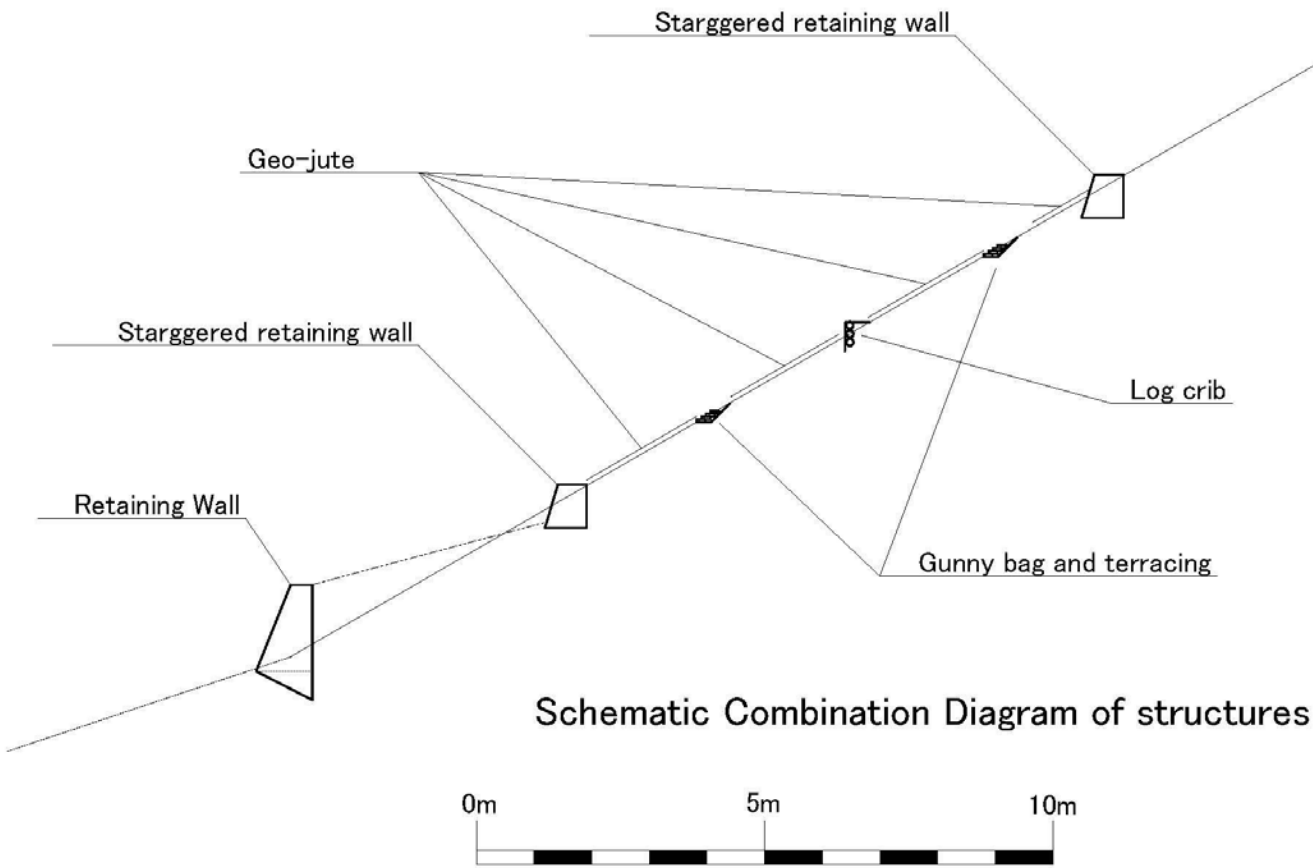
Gabion Check Dam (S size)



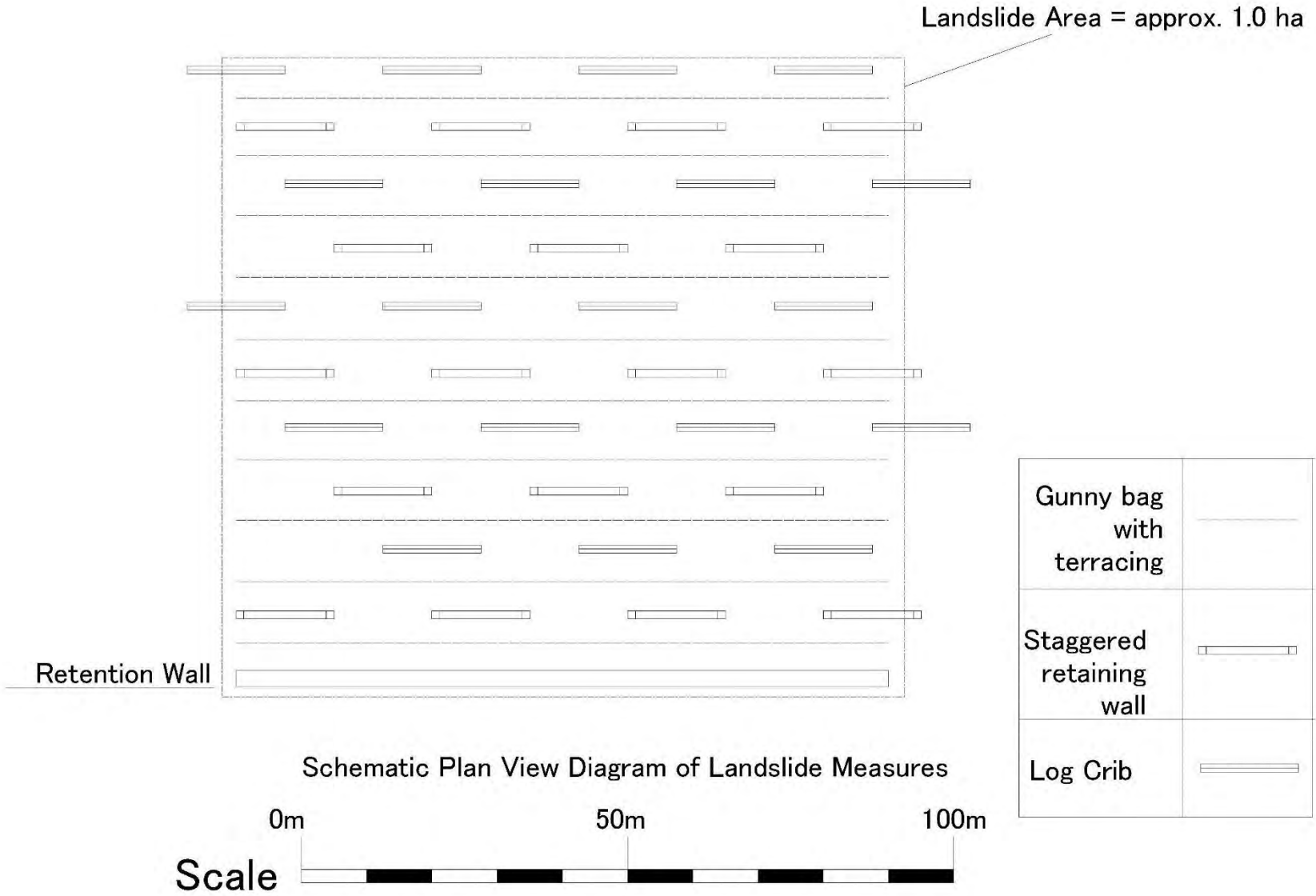
Masonry/ Concrete Check Dam (M size)

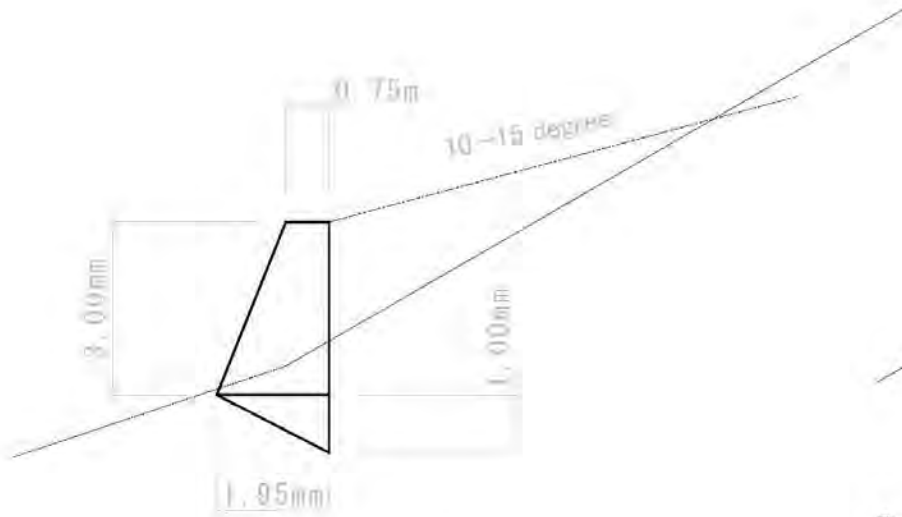




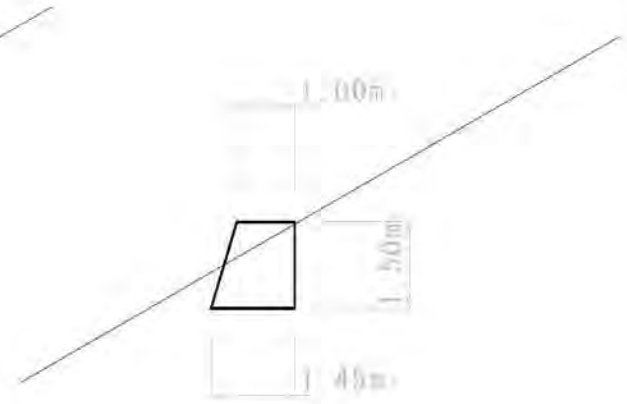


Schematic Combination Diagram of structures on Landslide

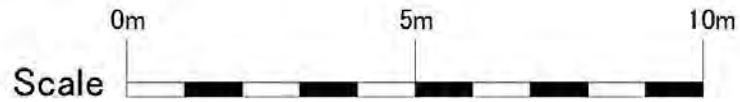




Cross Section of Retaining Wall
(Masonry Wall)



Cross Section of Staggered
Retaining Walls
(Gabion Wall)

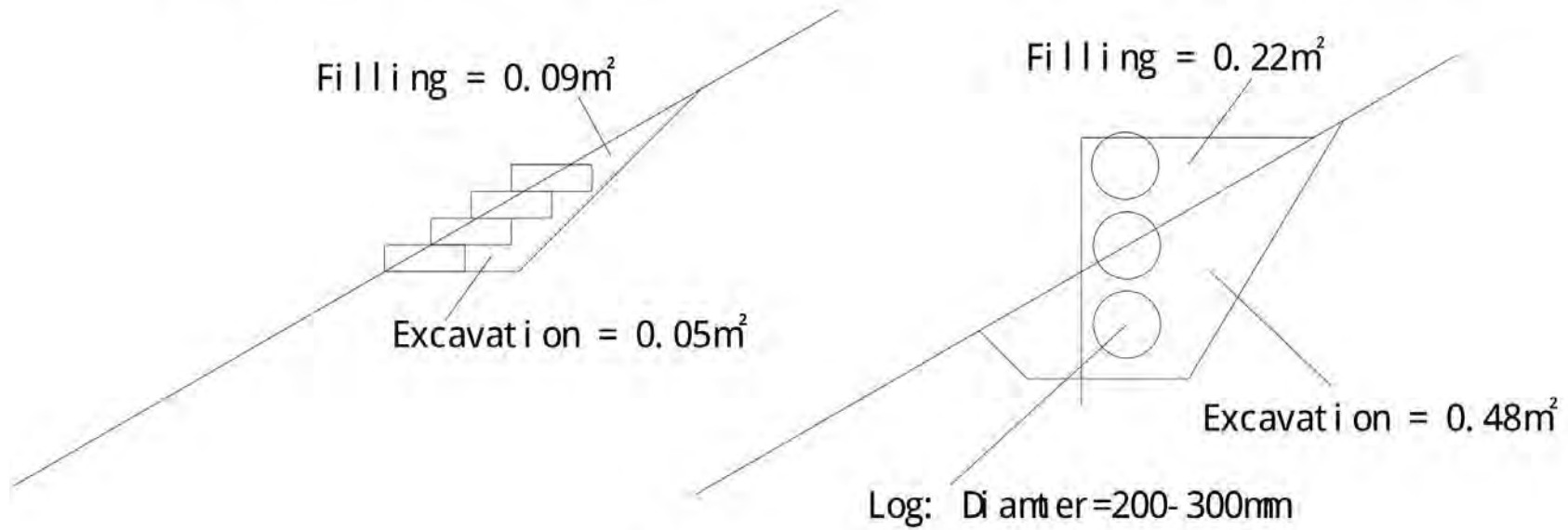


Excavation = 1.87m²
Filling = 8.77m²

Excavation = 1.44m²

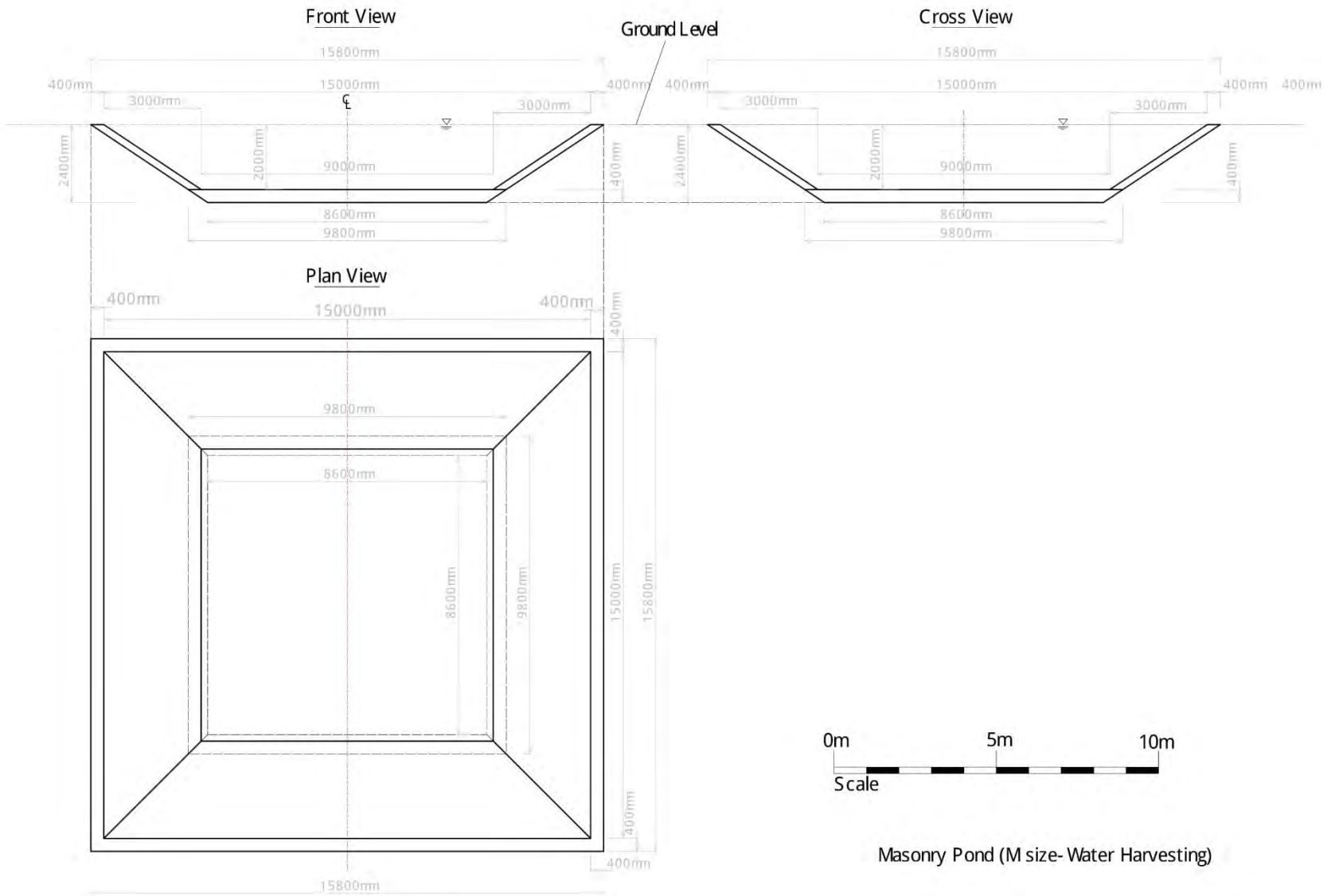
Gunny bags with terracing

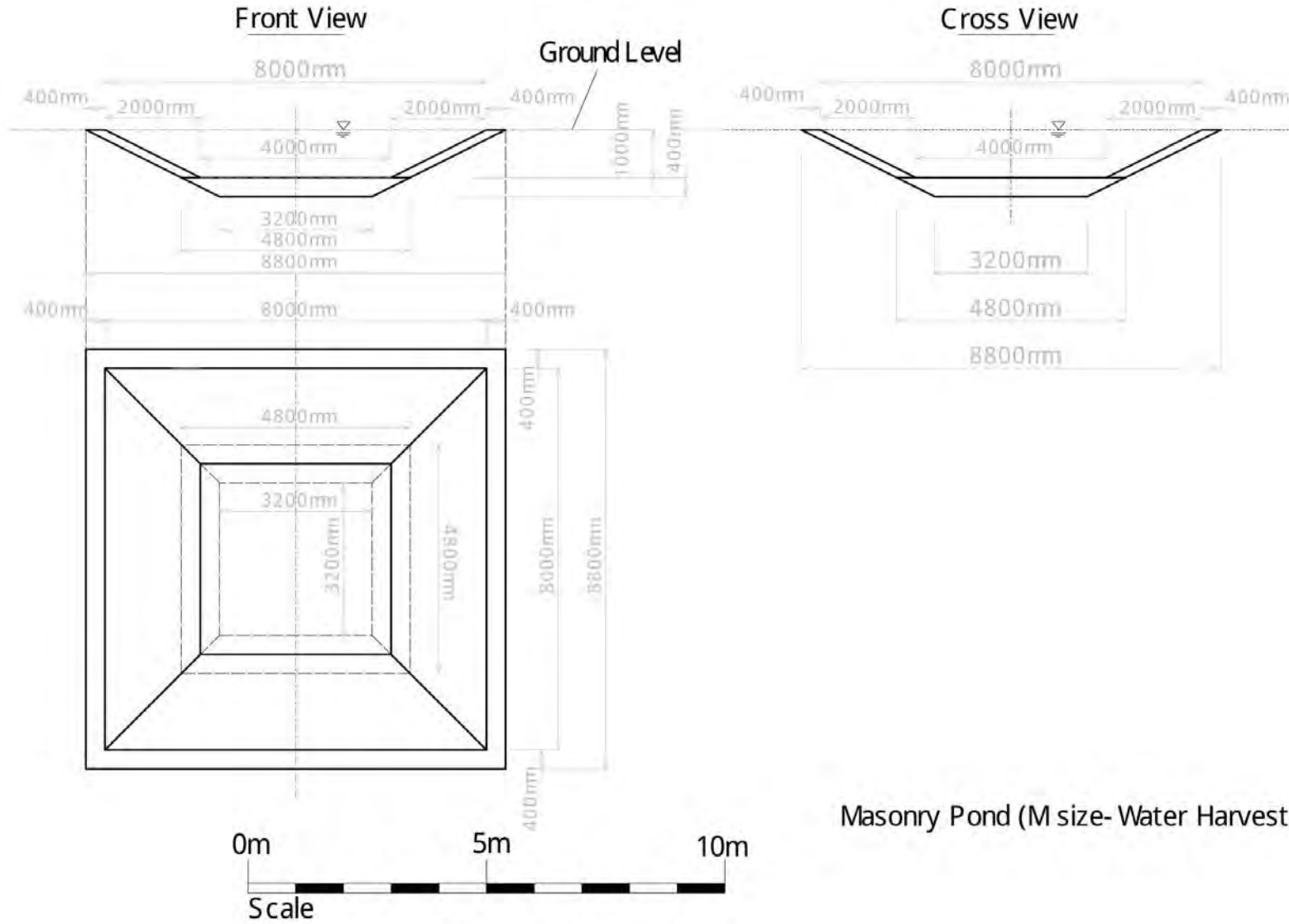
Log crib (wood)



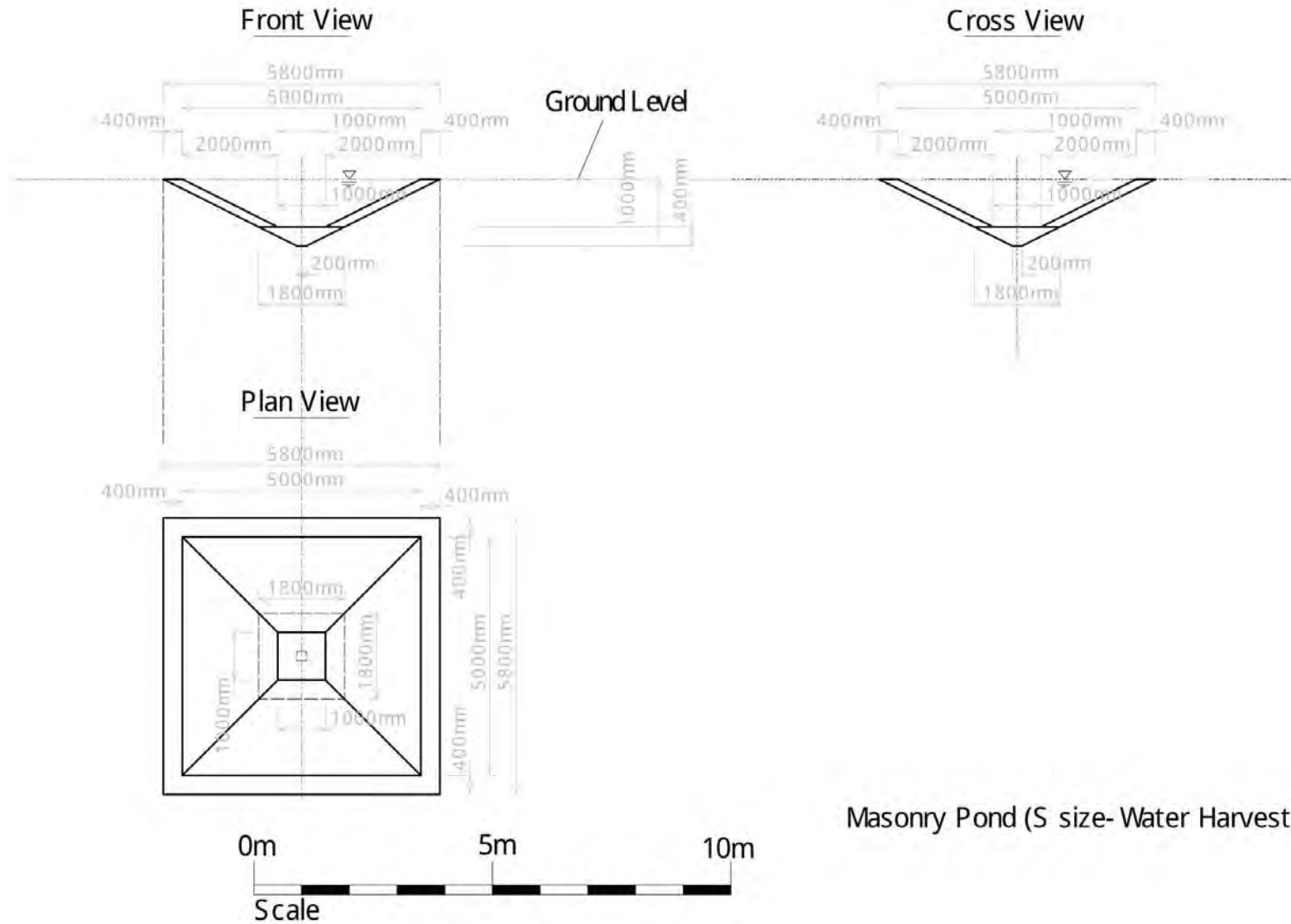
Cross Section of Gunny Bags with Terracing and log crib of Landslide







Masonry Pond (M size- Water Harvesting)



Masonry Pond (S size- Water Harvesting)

Attachment II.3.7.1.3 Potential Species for Planation/ ANR Operations and Potential Medicinal Plant Species in HP

Table 1 Potential Species for Planation and ANR Operations

No	Species	Common Name	Month	Years Required for Tending Works after Planting	Types of Tending Works	Purpose & Utility 1	Purpose & Utility 2	Growth Performance	Preferred Treatment	Feasible Area for Growing	Feasible Project Districts for Growing
1	<i>Abies pindrow</i>	Silver fir	Jul-Aug	a*: 5-7 years b*: 3 years (a: conventional method, b: tall plants)	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Smallwood	Shade Bearer	Block Planting/ Gap Planting	High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
2	<i>Picea smithiana</i>	Spruce	Jul-Aug	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Smallwood	Shade Tolerant	Block Planting/ Gap Planting	High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
3	<i>Cedrus deodara</i>	Deodar/ Cedar	Jul-Aug	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Smallwood, Medicinal	Shade Tolerant	Block Planting/ Gap Planting/ ANR/ Densification	Mid Hill (650 -1800m) High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
4	<i>Pinus roxburghii</i>	Chir/ Chil	Jul-Aug	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Medicinal	Light demanding	Block Planting	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Kullu/ Mandi/ Shimla
5	<i>Pinus wallichiana</i>	Blue Pine/ Kail	Jul-Aug	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Smallwood	Light demanding	Block Planting/ Gap Planting	Mid Hill (650 -1800m)/ High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
6	<i>Pinus gerardiana</i>	Chilgoza	Dec	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Medicinal	Fuelwood	Light demanding	Block Planting	Cold Dry (low rainfall)	Kinnaur
7	<i>Juniperus macropoda</i>	Juniper/ Pencil cedar	Dec	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Fuelwood	Light demanding	Block Planting	Cold Dry (low rainfall)	Kinnaur/ Lahaul & Spiti

No	Species	Common Name	Month	Years Required for Tending Works after Planting	Types of Tending Works	Purpose & Utility 1	Purpose & Utility 2	Growth Performance	Preferred Treatment	Feasible Area for Growing	Feasible Project Districts for Growing
8	<i>Acacia catechu</i>	Khair	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Smallwood	Light demanding	Block Planting/ Gap Planting	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
9	<i>Aegle marmelos</i>	Bel	Jul-Aug	a: 3-5b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Medicinal	Smallwood	Light demanding	Gap Planting/ Densification	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
10	<i>Aesculus indica</i>	Khanor	Dec-Jan	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Fuelwood	Shade Tolerant	Gap Planting/ Densification	Mid Hill (650 -1800m)/ High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
11	<i>Albizzia lebbek</i>	Kala Siris	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Fuelwood	Light demanding	Block Planting/ Fuel & Fodder	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
12	<i>Albizzia stipulata</i>	Ohi	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Fuelwood	Light demanding	Block Planting/ Fuel & Fodder	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
13	<i>Alnus nepalensis/A. nitida</i>	Kunish	Dec-Jan	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fuelwood	Fodder	Light demanding	Block Planting	Mid Hill (650 -1800m)/ High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
14	<i>Azadirachta indica</i>	Neem	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Medicinal	NTPF	Light demanding	Block Planting/ Gap Planting	Shivalik (350 -650 m)	Bilaspur
15	<i>Bauhinia variegata</i>	Kachnar	Dec-Jan Jul-Aug	a/b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Fuelwood	Shade Tolerant	Fuel & Fodder	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Kull/ Mandi/ Shimla
16	<i>Bombax ceiba</i>	Semal	Jul-Aug	a: 3-5 years	Protection, Bush	Timber	NTPF	Light	Block Planting	Shivalik	Bilaspur/

No	Species	Common Name	Month	Years Required for Tending Works after Planting	Types of Tending Works	Purpose & Utility 1	Purpose & Utility 2	Growth Performance	Preferred Treatment	Feasible Area for Growing	Feasible Project Districts for Growing
				b: 3 years	Cutting/ weeding, cleaning, hoeing, Mulching, Pruning			demanding		(350 -650 m)	Mandi/ Shimla
17	<i>Toona ciliata</i>	Toon	Dec-Jan Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Fodder	Light demanding	Block Planting	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
18	<i>Dalbergia sissoo</i>	Tali	Dec-Jan Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Fodder	Light demanding/Shade Tolerant	Block Planting/ Gap Planting	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
19	<i>Emblica officinalis</i>	Amla	Dec-Jan Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Medicinal	Fodder	Light demanding	Gap Planting/ Densification	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
20	<i>Grewia optiva/ G. Oppositifolia</i>	Bihul/Dhaman	Dec-Jan Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Smallwood	Shade Tolerant	Gap Planting/ Densification	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
21	<i>Mangifera indica</i>	Mango	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Smallwood	NTFP	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi
22	<i>Melia azadirachta</i>	Drek	Dec-Jan Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Smallwood	Fuelwood	Light demanding	Block Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
23	<i>Morus alba</i>	Shehtoot	Dec-Jan	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Smallwood	Fodder	Shade Tolerant	Block Planting/ Gap Planting	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
24	<i>Pongamia pinnata</i>	Pongamia	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding,	Smallwood	Fuelwood	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi

No	Species	Common Name	Month	Years Required for Tending Works after Planting	Types of Tending Works	Purpose & Utility 1	Purpose & Utility 2	Growth Performance	Preferred Treatment	Feasible Area for Growing	Feasible Project Districts for Growing
					cleaning, hoeing, Mulching, Pruning						
25	<i>Quercus leucotrichophora</i>	Ban	Jul-Aug	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Fuelwood	Shade Bearer	Gap Planting/ Densification	Mid Hill (650 -1800m)	Kullu/ Mandi/ Shimla
26	<i>Robinia pseudoacacia</i>	Robinia	Dec-Jan	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Fuelwood	Light demanding	Block Planting	Mid Hill (650 -1800m)	Kullu/ Mandi/ Shimla
27	<i>Salix alba</i>	Badha	Dec-Jan Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Smallwood	Fuelwood	Shade Bearer	Gap Planting	Mid Hill (650 -1800m), High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
28	<i>Sapindus mukorossii</i>	Ritha	Dec-Jan Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	NTPF	Fuelwood	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Mandi/ Shimla
29	<i>Syzygium cuminii</i>	Jamun	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Medicinal	Fodder	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
30	<i>Terminalia bellerica</i>	Behra	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Medicinal	Fodder	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
31	<i>Terminalia arjuna</i>	Arjuna	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Medicinal	Fodder	Light demanding	Block Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
32	<i>Terminalia chebula</i>	Harar	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing,	NTPF	Fuelwood	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla

No	Species	Common Name	Month	Years Required for Tending Works after Planting	Types of Tending Works	Purpose & Utility 1	Purpose & Utility 2	Growth Performance	Preferred Treatment	Feasible Area for Growing	Feasible Project Districts for Growing
					Mulching, Pruning						
33	<i>Artocarpus lakoocha</i>	Dheoun	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	NTFP	Fuelwood	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
34	<i>Hicoria carya</i>	Pecanut	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	NTFP	Fuelwood	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
35	<i>Dendrocalamus spp</i>	Bans	Jul-Aug	a/b: 2-3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Smallwood	Fodder	Shade Tolerant	Block Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
36	<i>Terminalia tomentosa</i>	Sain	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Fodder	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur
37	<i>Prunus armenica</i>	Chuli	Dec-Jan	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Medicinal	NTFP	Shade Tolerant	Gap Planting	Mid Hill (650 -1800m), High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
38	<i>Prunus cornuta/ P. Cerassoides/ P.padus</i>	Paza	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Fuelwood	Shade Tolerant	Gap Planting	Mid Hill (650 -1800m)	Kullu/ Mandi/ Shimla
39	<i>Olea glandulifera</i>	Thira	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fodder	Fuelwood	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla
40	<i>Cassia seamia</i>	Cassia	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Smallwood	Fodder	Light demanding	Block Planting	Shivalik (350 -650 m)	Bilaspur/ Mandi/ Shimla

No	Species	Common Name	Month	Years Required for Tending Works after Planting	Types of Tending Works	Purpose & Utility 1	Purpose & Utility 2	Growth Performance	Preferred Treatment	Feasible Area for Growing	Feasible Project Districts for Growing
41	<i>Acacia nilotica</i>	Kikkar	Jul-Aug	a/b: 2-3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fuelwood	Smallwood	Light demanding	Block Planting	Shivalik (350 -650 m)	Bilaspur
42	<i>Butea monosperma</i>	Dhak	Jul-Aug	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Fuelwood	Smallwood	Shade Tolerant	Gap Planting	Shivalik (350 -650 m)	Bilaspur
43	<i>Populus ciliata/ P. Alba/ P deltoides</i>	Poplar	Dec-Jan	a/b: 2-3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Fodder	Shade Tolerant	Block Planting	Shivalik (350 -650 m)/ Mid Hill (650 -1800m)	Bilaspur/ Kullu/ Kinnaur/ Mandi/ Shimla
44	<i>Juglans regia</i>	Walnut	Nov-Dec	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	NTFP	Timber	Light demanding	Gap Planting	Mid Hill (650 -1800m), High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla
45	<i>Acer oblonga/ Acer pictum</i>	Maple	Nov-Dec	a: 3-5 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	Timber	Smallwood	Shade Tolerant	Gap Planting/ Densification	Mid Hill (650 -1800m), High Hill (1800 -2200)	Kullu/ Kinnaur /Mandi/ Shimla
48	<i>Corylus colurna</i>	Thangi/ Hazelnut	Dec-Jan	a: 5-7 years b: 3 years	Protection, Bush Cutting/ weeding, cleaning, hoeing, Mulching, Pruning	NTFP	Fuelwood	Shade Tolerant	Gap Planting	Mid Hill (650 -1800m), High Hill (1800 -2200)	Kullu/ Kinnaur/ Mandi/ Shimla

Note: a: in case of conventional method, b: in case of tall plants

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

Table 2 Potential Medicinal Plant Species in HP

Agro-climatic Zone	Scientific Name	Local Name	Habits
Shivalik /Lower montane zone (< 800 m asl covering about 35% of the total area and about 1/3 of cultivated area.)	<i>Abrus prectorius</i>	Ratti	Perennial climber
	<i>Acacia catechu</i>	Khair	Deciduous tree
	<i>Acalypha indica</i>	Khokali	Herb
	<i>Achyranthes aspera</i>	Putkanda/chirchitta	Perennial herb
	<i>Adhatoda zeylanica</i>	Basuti/Adusa	Evergreen shrub
	<i>Aegle marmelos</i>	Bael	Deciduous tree
	<i>Albizia lebbek</i>	Kala siris	Deciduous tree
	<i>Aloe vera</i>	Gwar patta	Perennial herb
	<i>Argemone mexicanna</i>	Pila –dhatura	Annual herb
	<i>Asparagus racemosus</i>	Satawar	Perennial climber
	<i>Azadirachta indica</i>	Neem	Tree
	<i>Bacopa monnieri</i>	Neer brahmi/Jal brahmi	Creeping sub succulent herb
	<i>Baliospermum montanum</i>	Danti	Shrub
	<i>Bauhinia variegata</i>	Kachnar/karale	Tree
	<i>Bombax ceiba</i>	Simul, Semal	Tree
	<i>Butea monosperma</i>	Palash	Deciduous tree
	<i>Calotropis gigantea</i>	Ark	Shrub
	<i>Carissa carandas</i>	Karunda	Evergreen shrub
	<i>Cassia absus</i>	Chaksu	Biennial herb
	<i>Cassia fistula</i>	Amaltas	Deciduous Tree
	<i>Centella asiatica</i>	Brahmi	Spreading herb
	<i>Cissus quadrangularis</i>	Hadjod	A rambling shrub
	<i>Coccinia grandis</i>	Kaduri	Climber
	<i>Corallocarpus epigaeus</i>	Akasgaddah	Climber
	<i>Cryptolepis buchananii</i>	Dudhi	Twining shrub
	<i>Curculigo orchioides</i>	Kaali musli	Stem less herb
	<i>Cynodon dactylon</i>	Dub	Perennial grass
	<i>Datura fastuosa</i>	Kala Datura	Herb
	<i>Desmodium gangeticum</i>	Salparni	Shrub
	<i>Dioscorea bulbifera</i>	Tardi	Climber
	<i>Dodonaea viscosa</i>	Mehndru	Evergreen shrub
	<i>Eclipta prostata</i>	Bharangraj	Prostate annual herb
	<i>Erythrina stricta</i>		Deciduous tree
	<i>Euphorbia hirta</i>	Dudhi	Annual herb
	<i>Ficus racemosa</i>	Gular	Tree
	<i>Gloriosa superba</i>	Kalihari	Herbaceous climber
	<i>Gmelina arborea</i>	Gambar	Deciduous tree
	<i>Gymnema sylvestre</i>	Gurmar	Extensive twiner
	<i>Hemidesmus indicus</i>	Anantamul	Herb
	<i>Hibiscus rosa- sinensis</i>	Gurhal	Shrub
	<i>Holarrhena antidysenterica</i>	Indrajab	Deciduous shrub/tree
<i>Mangifera indica</i>	Aam	Tree	
<i>Mimosa pudica</i>	Lajwanti	A diffuse prostate Herb	
<i>Moringa oleifera</i>	Sanjana	Deciduous tree	
<i>Mucuna pruriens</i>	Kaunch/Dragal	Climbing shrub	
<i>Murraya koengii</i>	Gandhelu	Shrub	
<i>Nyctanthes arbor-tristis</i>	Harsinghar	Large shrub/tree	
<i>Ocimum basilicum</i>	Tulsi	Woody herb	
<i>Oroxylum indicum</i>	Tatpalanga/ Shyonaka	Tree	
<i>Phyllanthus emblica</i>	Amla	Deciduous tree	
<i>Pongamia pinnata</i>	Karanj	Semi evergreen tree	
<i>Rauwolfia serpentina</i>	Sarpagandha	Shrub	
<i>Ricinus communis</i>	Arand	Perennial shrub	
<i>Sida acuta</i>	Bariara	Annual herb	

Agro-climatic Zone	Scientific Name	Local Name	Habits
	<i>Solanum nigrum</i>	Gurkkamai	Annual herb
	<i>Syzygium cumini</i>	Jamun	Evergreen tree
	<i>Terminalia arjuna</i>	Arjuna	Lofty tree
	<i>Terminalia bellirica</i>	Bahera	Large tree
	<i>Terminalia chebula</i>	Harar	Tree
	<i>Tinospora cordifolia</i>	Gulje	Deciduous climber
	<i>Tribulus lanuginosus</i>	Gokhru	Perennial herb
	<i>Tylophora indica</i>	Antamul	Climber
	<i>Uraria picta</i>	Pithvan/Prshnparni	Perennial Herb
	<i>Vetiveria zizanioides</i>	Khas	Grass
	<i>Vitex negundo</i>	Nirgundi/bahna	Deciduous shrub
	<i>Withania somnifera</i>	Ashwagandha	Shrub
	<i>Wrightia tinctoria</i>	Dudhi	Deciduous tree
Mid hill zone (800-1600 m as covering about 32% of the total area and about 53% of cultivated area)	<i>Abrus precatorius</i>	Ratti	Climber
	<i>Acacia catechu</i>	Khair	Tree
	<i>Achyranthes aspera</i>	Puthkanda	Perennial herb
	<i>Aegle marmelos</i>	Bel/Bael	Tree
	<i>Ajuga bracteosa</i>	Neelkanthi	Perennial herb
	<i>Albizia lebbek</i>	Siris/Kala siris	Tree
	<i>Bauhinia variegata</i>	Kachnar	Tree
	<i>Berberies lycium</i>	Kashmal	Shrub
	<i>Bergenia ciliata</i>	Pashanbed/Patharchat	Perennial herb
	<i>Bombax ceiba</i>	Semal	Tree
	<i>Butea monosperma</i>	Dhak/Palah	Tree
	<i>Cassia fistula</i>	Amal tas	Tree
	<i>Cedrus deodara</i>	Devdar/kele/Dayar	Tree
	<i>Centella asiatica</i>	Brahmi/Mandukparni	Perennial herb
	<i>Cinnamomum tamala</i>	Tejpatta	Tree
	<i>Cissampelos pareira</i>	Padh/patindu	Twining herb
	<i>Costus speciosus</i>	Keu/Kemuk	Perennial herb
	<i>Cuscuta reflexa</i>	Akash bel	Twining parasite
	<i>Cyperus rotundus</i>	Nagmotha	Herb
	<i>Datura stramonium</i>	Safed Datura	Annual herb
	<i>Dioscorea bulbifera</i>	Tardi	Climber
	<i>Dioscorea deltoidea</i>	Singli-mingli	Perennial twining herb
	<i>Eclipta prostata</i>	Bhringraja	Annual herb
	<i>Emblica officinalis</i>	Amla	Tree
	<i>Hedychium acuminatum</i>	Van-haldi/kapur kachri	Perennial herb
	<i>Helicteres isora</i>	Marorphali	Shrb
	<i>Heracleum candicans</i>	Patrala	Perennial herb
	<i>Holarrhena antidysenterica</i>	Kurchi/kura	Tree
	<i>Hypericum perforatum</i>	Basant	Perennial herb
	<i>Jasminum officinale</i>	Peeli chameli/Pitmali	Shrub
	<i>Juglans regia</i>	Akhrot/Khor	Tree
	<i>Leucas cephalotes</i>	Dronpushpi	Annual herb
	<i>Malloutus philippinensis</i>	Kamala/Rohini	Tree
	<i>Mentha longifolia</i>	Jungli podina	Perennial herb
	<i>Morchella esculenta</i>	Guchhi	Fungi
	<i>Moringa oleifera</i>	Sanjana/drum stick	Tree
	<i>Mucuna pruriens</i>	Kaunch	Annual twining herb
	<i>Murraya koenigaii</i>	Gandhela	Shrub
	<i>Myrica esculenta</i>	Kaphal	Tree
	<i>Nerium indicum</i>	Kaner	shrub
<i>Nyctanthes arbor-tristis</i>	Harsingar	Shrub/tree	
<i>Ocimum sanctum</i>	Tulsi	Perennial herb	

Agro-climatic Zone	Scientific Name	Local Name	Habits
	<i>Oroxylum indicum</i>	Tatpalanga	Tree
	<i>Pinus roxburghii</i>	Chil	Tree
	<i>Pistacia khinjuk</i>	Kakarsinghi	Tree
	<i>Plumbago zeylanica</i>	Chitrak/Chitra	Perennial herb
	<i>Pongamia pinnata</i>	Karanj	Tree
	<i>Prinsepia utilis</i>	Bhekhhal	Shrub
	<i>Prunella vulgaris</i>	Austakhaddus	Annual herb
	<i>Prunus cerasoides</i>	Paja/Padam kashta	Tree
	<i>Punica granatum</i>	Daru	Tree
	<i>Pyracantha crenulata</i>	Chota seb	Shrub
	<i>Randia dumetorum</i>	Madanphal	Thorny shrub
	<i>Rauvolfia serpentina</i>	Sarpgandha	Perennial undershrub
	<i>Rhododendron arboreum</i>	Burah	Tree
	<i>Ricinius communis</i>	Arandi	Tall shrub
	<i>Roscoea alpina</i>	Kakoli/Safed musli	Herb
	<i>Roscoea procera</i>	Kakoli/Safed musli	Herb
	<i>Rubia manjith</i>	Manjistha	Herb
	<i>Salvia moorcroftiana</i>	Thuth/Kali jari	Perennial herb
	<i>Sapindus mukorossi</i>	Ritha	Tree
	<i>Sida cordifolia</i>	Bala	Perennial herb
	<i>Solanum khasianum</i>	Ban-Bhindi/kantkari	Under shrub
	<i>Solanum nigrum</i>	Makoi	Herb
	<i>Solanum surattence</i>	Kantkari	Perennial herb
	<i>Spilanthes acmella</i>	Akarkara	Annual herb
	<i>Swertia chirayita</i>	Chirayita	Annual herb
	<i>Symplocos panicuolata</i>	Lodh/Lodar	Shrub/tree
	<i>Tagetes minuta</i>	Jangli gainda	Annual herb
	<i>Taraxacum officinale</i>	Kanphul/Dudhi	Annual herb
	<i>Terminalia arjuna</i>	Arjun	Tree
	<i>Terminalia bellirica</i>	Bahera	Tree
	<i>Terminalia chebula</i>	Harar	Tree
	<i>Tinospora cordifolia</i>	Gulje	Climber
	<i>Thymus serpyllum</i>	Ban ajwain	Perennial herb
	<i>Valeriana jatamansi</i>	Mushkbala	Perennial herb
	<i>Viola serpens</i>	Banaksha/Banfshah	Perennial herb
	<i>Viscum album</i>	Ujjral/Banda	Perennial shrub
	<i>Vitex negando</i>	Nirgandi/Sura/bana	Shrub
	<i>Withania somnifera</i>	Ashvagandha	Perennial under shrub
	<i>Woodfordia fruticosa</i>	Dhai/Dhai ka phul	Shrub
	<i>Zanthoxylum armatum</i>	Tirmir/Tejbal/timbri	Shrub
High hill /Temperate zone (1600-3000 m asl covering about 25% of the total area and about 11% of cultivated area)	<i>Abies spectabilis</i>	Kolroi/Tosh	Tree
	<i>Achillea millefolium</i>	Birnjaisif	Perennial herb
	<i>Achyranthes aspera</i>	Puthkanda	Perennial herb
	<i>Aconitum deinorrhizum</i>	Mohra bish	Perennial herb
	<i>Aconitum heterophyllum</i>	Patish/Atish	Perennial herb
	<i>Acorus calamus</i>	Bare/Bach	Perennial herb
	<i>Aesculus indica</i>	Kanor	Tree
	<i>Ajuga bracteosa</i>	Neelkanthi	Perennial herb
	<i>Angelica glauca</i>	Chora	Perennial herb
	<i>Arctium lappa</i>	Jangli kuth	Perennial herb
	<i>Arnebia benthami</i>	Rattan jot	Perennial herb
	<i>Arnebia euchroma</i>	Rattan jot	Perennial herb
	<i>Atropa acuminata</i>	Jharka	Perennial herb
	<i>Berberis aristata</i>	Kashmal	Shrub
	<i>Berberis chitria</i>	Kashmal/daruhalidi	Shrub

Agro-climatic Zone	Scientific Name	Local Name	Habits
	<i>Berberies lycium</i>	Kashmal	Shrub
	<i>Bergenia ciliata</i>	Pashanbed/Patharchat	Perennial herb
	<i>Bergenia stracheyi</i>	Pashanbed/pakhanbed	Perennial herb
	<i>Betula utilis</i>	Bhojpatra	Tree
	<i>Cedrus deodara</i>	Devdar/keelo/Dayar	Tree
	<i>Centella asiatica</i>	Brahmi/Mandukparni	Perennial herb
	<i>Corydalis govaniana</i>	Bhutkeshi	Perennial herb
	<i>Cuscuta reflexa</i>	Akash bel	Twining parasite
	<i>Dactylorhiza hatagirea</i>	Salampanja/hothpanja	Perennial orchid
	<i>Datisca cannabina</i>	Bajarbhang	Herb
	<i>Datura stramonium</i>	Safed Datura	Annual herb
	<i>Didymocarpus pedicellata</i>	Pathar long/Pathar	Perennial herb
	<i>Dioscorea deltoidea</i>	Singli-mingli	Perennial twining herb
	<i>Eclipta prostata</i>	Bhringraja	Annual herb
	<i>Fritillaria roylei</i>	Kshirkakoli/kakoli	Perennial herb
	<i>Gentiana kurroo</i>	Kutki/Karu	Perennial herb
	<i>Habenaria intermedia</i>	Bridhi	Perennial herb
	<i>Habenaria edgeworthii</i>	Ridhi	Perennial herb
	<i>Hedychium acuminatum</i>	Van-haldi/kapur kachri	Perennial herb
	<i>Heracleum candicans</i>	Patrala	Perennial herb
	<i>Hyoscyamus niger</i>	Khurasani Ajwain	Biennial herb
	<i>Hypericum perforatum</i>	Basant	Perennial herb
	<i>Hyssopus officinalis</i>	Jufa	Shrubby perennial
	<i>Inula racemosa</i>	Poshkar	Perennial herb
	<i>Jasminum officinale</i>	Peeli chameli/Pitmali	Shrub
	<i>Juglans regia</i>	Akhrot/Khor	Tree
	<i>Juniperus communis</i>	Bethar /Juniper	Evergreen shrub
	<i>Jurinea dolomiaea</i>	Dhoop/Jari dhoop	Perennial herb
	<i>Leucas cephalotes</i>	Dronpushpi	Annual herb
	<i>Lilium polyphyllum</i>	Ksheer kakoli	Perennial herb
	<i>Malaxis acuminata</i>	Jiwak	Orchid
	<i>Mentha longifolia</i>	Jungli podina	Perennial herb
	<i>Microstylis muscifera</i>	Rishbhak	Perennial herb
	<i>Morchella esculenta</i>	Guchhi	Fungi
	<i>Myrica esculenta</i>	Kaphal	Tree
	<i>Nardostachys grandiflora</i>	Jatamansi	Perennial herb
	<i>Ocimum sanctum</i>	Tulsi	Perennial herb
	<i>Onosma bracteatum</i>	Ratanjot	Perennial herb
	<i>Origanum vulgare</i>	Van tulsi	Perennial herb
	<i>Paeonia emodi</i>	Udsalap	Perennial herb
	<i>Paris polyphylla</i>	Satva/nagchhatri	Perennial herb
	<i>Phytolacca acinosa</i>	Jharka	Perennial herb
	<i>Picrorhiza kurrooa</i>	Kutki/karru	Perennial herb
	<i>Podophyllum hexandrum</i>	Ban kakari	Perennial herb
	<i>Polygonatum cirrhifolium</i>	Maha meda	Perennial herb
	<i>Polygonatum verticillatum</i>	Meda	Perennial herb
	<i>Polygonum aviculare</i>	Nismoli/machoti	Annual herb
	<i>Potentilla nepalensis</i>	Bajartanti	Perennial herb
	<i>Prinsepia utilis</i>	Bhekhhal	Shrub
	<i>Prunella vulgaris</i>	Austakhaddus	Annual herb
	<i>Prunus armeniaca</i>	Chuli	Tree
	<i>Prunus cerasoides</i>	Paja/Padam kashta	Tree
	<i>Punica granatum</i>	Daru	Tree
	<i>Pyracantha crenulata</i>	Chota seb	Shrub
	<i>Randia dumetorum</i>	Madanphal	Thorny shrub

Agro-climatic Zone	Scientific Name	Local Name	Habits
	<i>Rauvolfia serpentina</i>	Sarpgandha	Perennial undershrub
	<i>Rheum australe</i>	Revandchini/Chukri	Perennial herb
	<i>Rheum moorcroftianum</i>	Chukri	Perennial herb
	<i>Rhododendron anthopogon</i>	Talishpatra/Dhop	Shrub
	<i>Rhododendron arboreum</i>	Burah	Tree
	<i>Rhododendron campanulatum</i>	Kashmiri patta	Rhambling shrub
	<i>Roscoea purpurea</i>	Kakoli/Safed musli	Herb
	<i>Rubia manjith</i>	Manjistha	Herb
	<i>Salvia moorcroftiana</i>	Thuth/Kali jari	Perennial herb
	<i>Saussuria costus</i>	Kuth	Perennial herb
	<i>Selinum vaginatum</i>	Bhutkeshi	Perennial herb
	<i>Skimmia laureola</i>	Nayar/ner Dhoop	Perennial shrub
	<i>Swertia chirayita</i>	Chirayita	Annual herb
	<i>Symplocos paniculata</i>	Lodh/Lodar	Shrub/tree
	<i>Tagetes minuta</i>	Jangli ginda	Annual herb
	<i>Taraxacum officinale</i>	Kanphul/Dudhi	Annual herb
	<i>Taxus wallichiana</i>	Birmi/ Rakhala	Tree
	<i>Thalictrum foliolosum</i>	Mamira/ pilijari	Perennial herb
	<i>Thymus serpyllum</i>	Ban ajwain	Perennial herb
	<i>Trillidium govanianum</i>	Nagchatri	Perennial herb
	<i>Valeriana jatamansi</i>	Mushkbala	Perennial herb
	<i>Viola serpens</i>	Banaksha/Banfshah	Perennial herb
	<i>Viscum album</i>	Ujjral/Banda	Perennial shrub
	<i>Zanthoxylum armatum</i>	Tirmir/tejbal/timbri	Shrub
	Cold dry zone (> 3000m asl covering about 8% of the total area and about 3% of cultivated area)	<i>Aconitum deinorrhizum</i>	Mohrabish
<i>Aconitum heterophyllum</i>		Patish	Perennial herb
<i>Aconitum laeve</i>		Mohra	Biennial herb
<i>Allium consanguineum</i>		Farna/Dimok	Herb perennial
<i>Atropa acuminata</i>		Kadwa Kafal	Herb perennial
<i>Angelica glauca</i>		Chora/Chura	Perennial herb
<i>Arnebia benthamii</i>		Rattan jot	Perennial herb
<i>Arnebia euchroma</i>		Rattan jot/Dimok	Perennial herb
<i>Artemesia brevifolia</i>		Seinski/nurcha	Perennial herb
<i>Bergenia stracheyi</i>		Pashanbed/Dhoklambu	Perennial herb
<i>Betula utilis</i>		Bhojpatra/Bhuj/Bhooj	Tree
<i>Bunium persicum</i>		Kala zira/shingu	Perennial herb
<i>Caltha palustris</i>		Mamiri/Horgul	Perennial herb
<i>Capparis hamalayensis</i>		Kabra/kiari	Shrub
<i>Colchicum luteum</i>		Kukum	Perennial herb
<i>Corydalis govaniana</i>		Bhutjata/Bhutkesi/Nakpo	Perennial herb
<i>Dactylorhiza hatagirea</i>		Salampanja/Hathpanja	Terrestrial orchid
<i>Delphinium brunonianum</i>		Nirbisha/lascar	Perennial herb
<i>Ephedra gerardiana</i>		Somlata /soma/tse	Shrub
<i>Ferula jaeschkeana</i>		Kait	Perennial herb
<i>Fritillaria roylei</i>		Kshirkakoli/kakoli	Perennial herb
<i>Gentiana kurroo</i>		Kutki/Karu	Perennial herb
<i>Heracleum candicans</i>		Patrala	Perennial herb
<i>Hippophae rhamnoides</i>		Chharma	Shrub
<i>Hyssopus officinalis</i>		Juffa	Perennial shrub
<i>Hyoscyamus niger</i>		Khurasani Ajwain	Biennial herb
<i>Juniperus macropoda</i>		Dhup/Dhupi/Padam	Small Tree
<i>Meconopsis aculeate</i>		Achat sarmum	Perennial herb
<i>Nardostachys grandiflora</i>		Jatamansi	Perennial herb
<i>Peganum harmala</i>		Gandhya	Perennial herb
<i>Physochlaina praealata</i>		Bajar bang	Perennial herb

Agro-climatic Zone	Scientific Name	Local Name	Habits
	<i>Podophyllum hexandrum</i>	Bankakri	Perennial herb
	<i>Polygonatum cirrhifolium</i>	Maha meda	Perennial herb
	<i>Polygonatum verticillatum</i>	Mahameda/Salammisri	Perennial herb
	<i>Rheum moorcraftianum</i>	Chukri/Revandchini	Perennial herb
	<i>Rhodiola heterodonta</i>	Rose root	Perennial herb
	<i>Rhododendron campanulatum</i>	Kashmiripatta	Shrub
	<i>Saussurea costus</i>	Kuth	Perennial herb
	<i>Saussurea obvallata</i>	Braham Kamal	Perennial herb
	<i>Valeriana jatamansii</i>	Mushkbala/Nihani	Perennial herb

Source: Non-Timber Forest Produce as Livelihood Option for Rural Communities of Mid Himalayas in Himachal Pradesh, FRLHT (2008)

Attachment II.3.7.1.4 Indicative Work Descriptions of ANR Operations

1. Types of Indicative ANR Operations

Table 1 Indicative Planting Density and Description of ANR

Type of Operation	Indicative Planting Density (Seedlings/ Ha)	Description
Assisted Natural Regeneration (ANR)	Without Gap Planting	Prescription of following silvicultural operations to facilitate natural regeneration: <ul style="list-style-type: none"> - High-stump cutting - Singling of coppice shoots - Climber cutting - Clearance of weeds
ANR with Seed Sowing	Sowing of Seed Patches	In addition to the above silvicultural prescriptions for ANR, regeneration is further supported through sowing of seeds of desired species in patches.
ANR with Gap Planting	Gap Planting (200~ 500 plants)	In addition to the above silvicultural prescriptions for ANR, gap planting/ enrichment planting of timber, fuel wood, fodder, fruit, medical and other NTFP species to be conducted.

Source: Compiled by JICA Study Team (2016) based on existing literature and interviews from concerned stake holders.

2. Indicative Work Schedule

The following work schedule are indicative and shall be determined as per the latest work norms and site conditions.

Assisted Natural Regeneration (ANR) without Gap Planting or Seed Sowing

Table 2 Indicative Work Schedule of ANR without Gap Planting

Year	Period	Activities
Yr 0 (April- March)	May - June	<p><u>Followings can be also conducted in earlier years:</u></p> <ul style="list-style-type: none"> - Selection of Area for ANR, - Measurement of area, - GPS Coordinates and Polygon Formation, - Check for seedlings of desired species, <p><u>Followings must be conducted in this year:</u></p> <ul style="list-style-type: none"> - Remove overshadowing weeds/ grasses around desired seedlings/wildlings, - Remove seedlings of undesired species, - Do soil working for aeration - In case of seed sowing, prepare soil worked patches of 45cm × 45cm, apart by removing weeds/ grasses
	July - Aug	<ul style="list-style-type: none"> - Plant wildlings of desired species in the gaps. - Singling of desired species to remove competition - In case of seed sowing, sowing of seeds collected from the area in the soil worked patches (2-3 seeds per patch)
	Oct - Nov	<ul style="list-style-type: none"> - Remove overshadowing weeds/ grasses around desired seedlings
Yr +1 (April- March)	Oct - Nov	<ul style="list-style-type: none"> - Remove overshadowing weeds/ grasses around desired seedlings
Yr+2 (April- March)	Oct - Nov	<ul style="list-style-type: none"> - Remove overshadowing weeds/ grasses around desired seedlings
Yr +3	May - June	<ul style="list-style-type: none"> - Remove overshadowing weeds/ grasses around desired seedlings,

Year	Period	Activities
(April- March)		- Remove seedlings of undesired species. - Do soil working for aeration
	Oct - Nov	- Remove overshadowing weeds/ grasses around desired seedlings
Yr +4 (April- March)	May - June	- If required repeat activities of Yr +3
Yr +5 (April- March)	May - June	- If required repeat activities of Yr +3

Note: Indicative/ suggestive in-situ SWC works are- Contour Trenching, Dry stone Check Dams/ Gully Plugs, Live Hedges and shall be determined based on site requirements

Source: Compiled by JICA Study Team (2017) based on existing literature and interviews from concerned stake holders

Assisted Natural Regeneration (ANR) with Gap Planting

Following work schedule assumes planting of seedlings which require 2 years of production in nursery.

Table 3 Indicative Work Schedule of ANR with Gap Planting

Year	Period	Activities
Yr -2 (April- March)	April- May	<u>Followings can be also conducted in earlier years:</u> - Selection of Area for ANR, - Measurement of area, - GPS Coordinates and Polygon Formation, - Decide on species - Calculate number of plants/ seedlings of each species to be raised in the nursery (keep margin of 20% extra seedlings),
	June-July	- Start nursery operations to raise seedlings
Yr -1 (April- March)	April - June	- Continue with Nursery operations, - Fence (close) the area, - Do preventive in situ SWC works, - Clean the area from undesired bushes/ weeds - Do the layout (spacing) for digging pits, - Pit digging of appropriate size (conifer – 30cm x 30cm/ BL – 45cm x 45cm),
	July – Aug.	- If required, put appropriate Live Hedge cuttings (Ipomea)/ Bulbils (Agave) along fence (inner side)
Yr 0 (April- March)	May - June	- Remove overshadowing weeds/ grasses around desired seedlings/wildings, - Remove seedlings of undesired species, - Do soil working for aeration
	July - Aug	- Transport the nursery raised seedlings to planting sites - Plant seedlings of desired species in the gaps. - Singling of desired species to remove competition
	Oct - Nov	- Remove overshadowing weeds/ grasses around desired seedlings - Do mulching, hoeing around planted seedlings.
	Yr +1 (April- March)	April- May
Yr +1 (April- March)	July - Aug	- Replace dead seedlings
	Oct - Nov	- Remove overshadowing weeds/ grasses around desired seedlings - Conduct watch and ward,
	Dec. Mar	- Remove overshadowing weeds/ grasses around desired seedlings - Do mulching, hoeing around planted seedlings.
Yr+2 (April- March)	Oct - Nov	- Remove overshadowing weeds/ grasses around desired seedlings

Year	Period	Activities
Yr +3 (April- March)	May - June	-Remove overshadowing weeds/ grasses around desired seedlings, - Remove seedlings of undesired species. - Do soil working for aeration
	Oct - Nov	- Remove overshadowing weeds/ grasses around desired seedlings
Yr +4 (April- March)	May - June	- If required repeat activities of Yr +3
Yr +5 (April- March)	May - June	- If required repeat activities of Yr +3

Note: Indicative/ suggestive in-situ SWC works are- Contour Trenching, Dry stone Check Dams/ Gully Plugs, Live Hedges and shall be determined based on site requirements

Source: Compiled by JICA Study Team (2017) based on existing literature and interviews from concerned stake holders

Attachment II.3.7.1.5 Indicative Work Descriptions of Planation Operation**1. Types of Indicative Plantation Operations****Table 1 Indicative Planting Density and Description of ANR**

Types of plantation	Indicative Planting Density (Seedlings/ Ha)	Description
Fuelwood and Fodder plantation	~1,100 (normal plants) 200~500 (tall plants)	Fast growing species/ desired species will be planted for production of soft timber, fuel wood and fodder. Planting arrangement should ensure alternating plants of Large tree with Medium and Small tree species for formation of canopy layers in future. Inter cropping of grasses for fodder shall be also introduced based on desires of PFM institutions as well as site suitability
NTFP plantation	~1,100 (normal plants) 200~500 (tall plants)	Mixed planting of NTFP species of smaller trees and larger trees on the alternate rows shall be considered. Inter cropping of NTFPs, medicinal plants, grasses shall be also introduced based on desires of PFM institutions as well as site suitability
Other Block Plantation	~1,100 (normal plants) 200~800 (tall plants)	Plantation for timber production, special interest/ niche species, or for environmental protection.

Source: Compiled by JICA Study Team (2016) based on existing literature and interviews from concerned stake holders.

1. Indicative Work Schedule

The following work schedule and designs are indicative and shall be determined as per the latest work norms and site conditions.

Block Plantations

Following work schedule assumes planting of seedlings which require 2 years of production in nursery.

Table 2 Indicative Work Schedule of Block Planation

Year	Period	Activities
Yr -2 (April- March)	April- May	<ul style="list-style-type: none"> - Selection of Area, - Measurement, GPS Coordinates and Polygon Formation, - Map of area with features- (Drainage, Altitudinal range, Aspect, Erosion points, Gullies, Nallahs), - Decide on species and species mixtures - Calculate number of plants/ seedlings of each species to be raised in the nursery (keep margin of 20% extra seedlings),
	June- July	<ul style="list-style-type: none"> - Start nursery operations to raise desired
Yr -1 (April- March)	April - June	<ul style="list-style-type: none"> - Continue with Nursery operations, - Fence (close) the area, - Do preventive in-situ SWC works, - Clean the area from undesired bushes/ weeds or other undesired species, - Do the Layout (spacing) for digging pits, - Pit digging of appropriate size (conifer – 30cm x 30cm/ BL – 45cm x 45cm),
	July – Aug.	<ul style="list-style-type: none"> - If required, put appropriate Live Hedge cuttings (Ipomea)/ Bulbils (Agave) along fence (inner side)
Yr 0 (April- March)	July - Aug	<ul style="list-style-type: none"> - Transport the nursery raised seedlings to plantation site - Do planting as per the design and requirement.
	Oct. – Dec	<ul style="list-style-type: none"> - Do mulching, weeding, hoeing, cleaning operations
Yr +1	April -May	<ul style="list-style-type: none"> - Do mulching, weeding, hoeing, cleaning operations , repair fence,

Year	Period	Activities
(April- March)	July - Aug	- Replace dead seedlings
	Oct - Nov	- Enforce strict watch and ward, - Watering (if budget permissi6ng), - Maintenance of in situ SWC
	Dec- Mar.	- Weeding, hoeing, cleaning operations, enforce strict watch and ward
Yr +2 (April- March)		- Repeat operations as for Yr +1
Yr +3 (April- March)		- Repeat operations as for Yr +1, - If required singling of seedlings
Yr +4 (April- March)		- If required, repeat operations as for Yr +3
Yr +5	(April- March)	- If required Repeat operations as for Yr +4

Note: Indicative/ suggestive in-situ SWC works are- Contour Trenching, Dry stone Check Dams/ Gully Plugs, Live Hedges and shall be determined based on site requirements

Source: Compiled by JICA Study Team (2017) based on existing literature and interviews from concerned stake holders

Fuel and Fodder Plantations

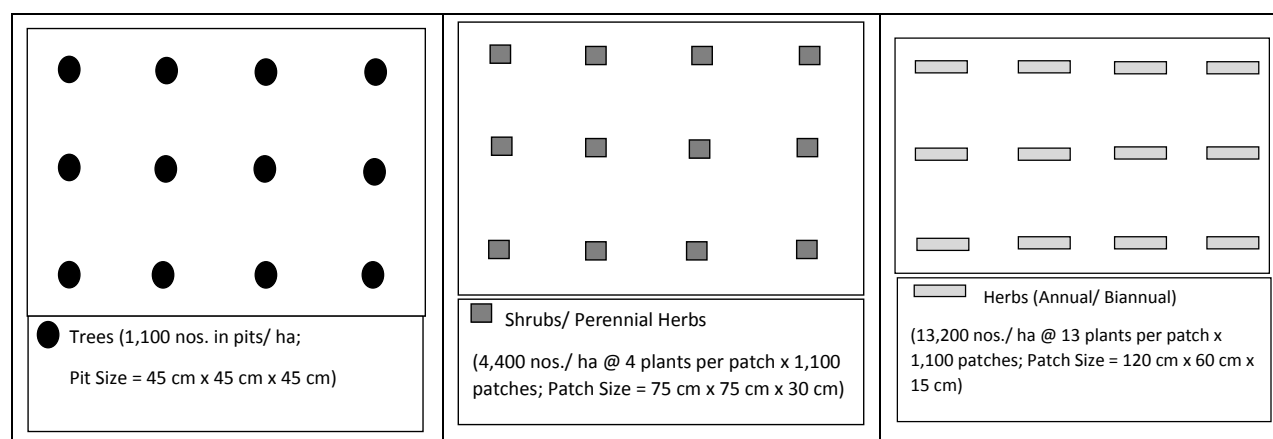
Basically, similar work schedule as that of the block planation can be followed.

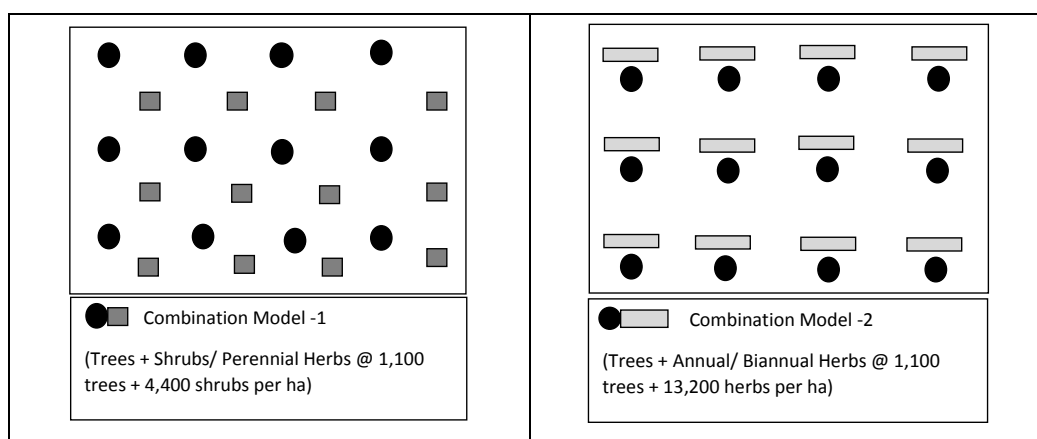
In principle, this will be taken up near habitations in small areas (as per availability) with the objective of growing fast growing, short rotation, fuel and fodder species so as to meet future requirements of fuel and fodder of the nearby communities.

NTFP Plantations

Basically, similar work schedule as that of the block planation can be followed.

As per the existing cost norm in HPFD, not only the planation establishment model, but also models for shrubs/perennial herb establishment, herb (annual/ biannual herbs) establishment, and combinations of these can be considered. Following figures illustrate indicative layouts of such models.





Source: Compiled by JICA Study Team (2017) based on existing literature and interviews from concerned stake holders

Figure 1 Indicative Layout for NTFP Developments

Bamboo Plantations

Basically, similar work schedule as that of the block plantation can be followed.

Can be planted as part of NTFP development but in case of pure plantation establishment, indicative basic design is as follows:

- ◆ Areas are fenced preventing biotic interference (human & Wild animals),
- ◆ 400-500 / Ha pits of appropriate size(45cm . 45cm) dug in desired predefined layout(8m × 8m),
- ◆ nursery raised Poly bag seedlings of Bamboo planted in monsoon with appropriate tending operations for next 1-3 years

Two species of hill bamboos i.e. *Arundinaria falcata* (= *Sinarundinaria falcata* / *Drepanostachyum falcatum*) and *Arundinaria spathiflora* (= *Thamnocalamus spathiflorus*) occur naturally in HP. These species, known locally as 'nirgal', occupy the cool and moist niches in the temperate regions in the State and are mainly put to local use for basketry purposes. This very important group of species is still to attract focused management initiatives.

Dendrocalamus strictus is the only species of tropical bamboos that is found wild in the sub-tropical tracts in the State with total spread of 508 km² (SFR, 2011). However, only about 10,000 hectare of forest land in the State bears concentrated populations of bamboo and is being specifically managed under Bamboo Working Circle. In addition to the native populations of tropical bamboos, the State also has good stock of introduced tropical species like *Dendrocalamus hamiltonii* (Maggar Bans) and *Bambusa nutans* (Dharench) that form an important component of the local agro-forestry practices.

Bamboo plantations can be raised or improvement of existing bamboo can be undertaken, such areas are in Bilaspur, Suket, Jogindernagar, Mandi and Shimla forest divisions besides potential areas of Hill Bamboo *Arundinaria falcata* and *Arundinaria spathiflora*.

Improvement of Existing Bamboo Stock

In relation to bamboo development, if required, improvement operations of existing bamboo stocks to get sustained yield of bamboo and maintain the health of bamboo clumps from congestion and degradation can be also considered. Indicative work schedule is as follows.

Table 3 Indicative Work Schedule of Bamboo Improvement

Year	Period	Activities
Yr -0 (April- March)	Oct- Feb	<ul style="list-style-type: none"> - Remove mature culms to get sustained yield, equivalent to / not exceeding no. Of culms which have come up in the last three years.. - Do cleaning, climber cutting and decongestion of clump to maintain its health. - Cleaning by removing dry culms (completely dry clump to be clear felled) - Clumps to be worked in horse shoe manner, from middle of the clump towards periphery. - Rhizome not to be disturbed. - while removing culms, cut should be given as low as possible

Source: Compiled by JICA Study Team (2017) based on existing literature and interviews from concerned stake holders

Special Interest/ Niche Species Plantations

Basically, similar work schedule as that of the block planation can be followed. However depending of the species, longer maintenance/ tending may be required.

Rehabilitation of Forest Areas with Invasive Species

For planation establishment or gap planting to shade out the area, basically, similar work schedule as that of the block planation and ANR can be considered. However, prior to planation establishment, eradication of invasive species need to be conducted and continual maintenance for eradication are also required concurrently with the planation establishment. The following tables describe indicative work schedule for eradication operations for invasive species.

Table 4 Indicative Work Schedule of Lantana Eradication

Year	Period	Activities
Yr 0 (April- March)	April- May	<ul style="list-style-type: none"> - Identify area to be eradicated of invasive sp. - A strip be created around boundary by removing Lantana or other invasive sp.
	Sept - Oct	- Local grass seed (collected /procured in Sept-Oct) be mixed with soil to make pallets.
	Dec- Jan	<ul style="list-style-type: none"> - Lantana bushes will be removed using Cut Root Stock Methods (CRS) - Bushes be stacked upside down (reverse polarity) & allowed to dry.
	Jan-Feb	- Pallets be broadcasted in the area in the month of Jan-Feb (with the onset of winter rains).
Yr +1 (April- March)	April - June	- Remove Lantana sprouts
	July- Aug	- Broadcasting Grass Seed Pallets
	Oct-Dec	- Remove Lantana sprouts
Yr +2 (April- March)		- Repeat as for Yr+1

Source: Compiled by JICA Study Team (2017) based on existing literature and interviews from concerned stake holders

Table 5 Indicative Work Schedule of Parthenium/ Ageratum/ Eupatorium Eradication

Year	Period	Activities
Yr 0 (April- March)	Sept - Oct	- Identify area to be eradicated of invasive sp. - Complete plants uprooted (before onset of flowering) , collected in heaps and burn
	Dec- Jan	- Remove new sprouts
Yr +1 (April- March)	Sept-Oct	- Remove new sprouts
	Dec- Jan	- Remove new sprouts

Source: Compiled by JICA Study Team (2017) based on existing literature and interviews from concerned stake holders

Attachment II.3.7.1.6 Indicative Work Descriptions of Models for Improvement of Pastures and Grasslands

1. Overviews

Following models/treatments are prepared for cost estimate purposes. The actual treatments to be determined reflecting the ground situations of the concerned pastures/ grasslands.

Dry Alpine Pasture:

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

Other Grasslands:

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

2. Dry Alpine Pasture Models

2.1 Broadcasting Method (Grass Seeds)

Since the natural conditions are hostile and growing period is very short in dry alpine pasture areas, broadcasting of grass seeds after soil working can be introduced as the main interventions for improvement of dry alpine pastures. Following table describes year-wise major activities of this method.

Table 2.1 Broad Casting Method for Dry Alpine Pasture

Year	Period	Activities
Yr -0 (April- March)	April	- Selection of Area, - Measurement of GPS Coordinates and Polygon Formation, - Mapping of area with features- (Drainage, Altitudinal range, Aspect, Erosion points, Gullies, Nallahs), - Selection on species of grasses. - Calculation of quantity of seed required
	May	- Fencing (close) of the area, - Conducting preventive in-situ Soil & Water Conservation (SMC) measures - Weeding and soil working.,
	June	- Broadcasting seeds of grasses
	Sept -Oct	- Fertilization: 60 Kg Nitrogen/ ha and 60 Kg Phosphate/ Ha applied in three splits [first split basal application, second after seedling reaches around 30cm and third at initiation of boot stage of grasses. - Protection work (watch and ward, weeding)
Yr +1 (April- March)	April -March	- Protection Work (watch and ward, weeding) - Fertilization
Yr +2 (April- March)	April -March	- Protection Work (watch and ward, weeding) - Fertilization

Source: Compiled by JICA Study Team (2017) based on information from Indian Grassland and Fodder Research Institute

2.2 Patch/Strip Methods (Grass Tufts or Grass Seeds and Legumes Seeds)

For dry alpine pasture areas where patching of grass tufts or sowing of grass seeds are feasible, either patch method or strip method will be adopted for improvement of pastures. Following table describes year-wise major activities of these methods

Table 2.2 Patch/Strip Methods for Dry Alpine Pasture

Year	Period	Activities
Yr -0 (April- March)	April	<ul style="list-style-type: none"> - Selection of Area, - Measurement of GPS Coordinates and Polygon Formation, - Mapping of area with features- (Drainage, Altitudinal range, Aspect, Erosion points, Gullies, Nallahs), - Selection on species of grasses and legumes - Calculation of quantity of seeds/tufts/ seedlings required to be raised in the nursery
	May	Patch Method: <ul style="list-style-type: none"> - Start nursery operations to raise desired seedlings. and procure legume seeds Strip Method: <ul style="list-style-type: none"> - procure legume/ grass seeds
	June	<ul style="list-style-type: none"> - Fence (close) the area, - Do preventive in-situ SWC - Clean the area from undesired bushes/ weeds/other sp., Patch Method: <ul style="list-style-type: none"> - Do the Layout (spacing) for patches, (30 × 30×10cm), 1m apart in line (along Contour); Line to line distance 4m depending upon slope. Patches should be dug in staggered manner. (approx- 1500 patches) Strip Method: <ul style="list-style-type: none"> - Do the Layout (spacing) for strips, 20cm wide continuous strips scratched against slope of all Scrub and weeds and soil dug (10-15 cm). Strip to strip distance 2 -4 m depending upon slope (gentle slopes distance should be 2 m).
	July – Aug.	Patch Method: <ul style="list-style-type: none"> - Plant grass tufts in alternate patches, 13 tufts per patch, 10cm apart from each other. Keep length of 10cm from base of seedling (remove upper portion) (10,000 tufts) - -Sow legume seeds in alternate patches (6-8 grains of seeds in each patch) Strip Method: <ul style="list-style-type: none"> - Alternate strips to be sown with grasses and legumes seeds. (10,000 Tufts). 10kg legume seed/ Ha. Each running metre of strip should have 8-10 grains of seeds
	Sept -March	<ul style="list-style-type: none"> - Fertilization: 60 Kg Nitrogen/ ha and 60 Kg Phosphate/ Ha applied in three splits [first split basal application, second after seedling reaches around 30cm and third at initiation of boot stage of grasses. - Protection work (watch and ward, weeding)
Yr +1 (April- March)	April -March	<ul style="list-style-type: none"> - Fertilization: 60 Kg Nitrogen/ ha and 60 Kg Phosphate/ Ha applied in three splits [first split basal application, second after seedling reaches around 30cm and third at initiation of boot stage of grasses. - Protection work (watch and ward, weeding)

Source: Compiled by JICA Study Team (2017) based on information from Indian Grassland and Fodder Research Institute

3. Grassland Models

3.1 Silvipastoral Fodder Development Method

Silvipastoral systems have been found to be viable option for obtaining a very high biomass per unit area. Some species consider for fodder trees are *Albizia lebbek*, *Bauhinia variegata*, *Grewia optiva*, *Leucaena leucocephala*, *Dendrocalamus hamiltonii*, *Quercus incana*, *Quercua leucotricophora*.

Following table describes year-wise major activities of this method.

Table 3.1 Silvipastoral Fodder Development Methods for Other Grasslands

Year	Period	Activities
Yr -1 (April- March)	April	<ul style="list-style-type: none"> - Selection of Area, - Measurement of GPS Coordinates and Polygon Formation, - Mapping of area with features- (Drainage, Altitudinal range, Aspect, Erosion points, Gullies, Nallahs), - Selection on species of trees grasses and legumes - Calculation of quantity of seeds/tufts/ seedlings required to be raised in the nursery
	May	<ul style="list-style-type: none"> - Start nursery operations to raise desired tree seedlings
Yr 0	June	<ul style="list-style-type: none"> - Continue with Nursery operations, - Fence (close) the area, - Do preventive in situ Soil & Water Conservation (SWC) - Clean the area from undesired bushes/ weeds/other sp., - Do the Layout (spacing) for Trees, 5m × 5m, pits(45× 45×45cm) , patches for grasses/ legumes, (30 × 30×10cm), 1m apart in line (along Contour); Line to line distance 2-4m depending upon slope. Patches should be dug in staggered manner
	July – Aug.	<ul style="list-style-type: none"> - -Plant Fodder Trees (approximately 200); grass tufts in alternate patches, 10-15 tufts per patch, 10cm apart from each other. Keep length of 10cm from base of seedling (remove upper portion) - Sow legume seeds in alternate patches (6-8 grains of seeds in each patch)
	Sept -March	<ul style="list-style-type: none"> - Fertilization: 60 Kg Nitrogen/ ha and 60 Kg Phosphate/ Ha applied in three splits [first split basal application, second after seedling reaches around 30cm and third at initiation of boot stage of grasses. - Protection work (watch and ward, weeding)
Yr +1 (April- March)	April -March	<ul style="list-style-type: none"> - Protection Work (watch and ward, weeding) - Fertilization

Source: Compiled by JICA Study Team (2017) based on information from Indian Grassland and Fodder Research Institute

3.2 Patch/Strip Methods (Grass Tufts or Grass Seeds and Legumes Seeds)

Year-wise major activities of these methods are basically the same as that of dry alpine pasture.

Table 3.2 Patch/Strip Methods for Other Grasslands

Year	Period	Activities
Yr -0 (April- March)	April	<ul style="list-style-type: none"> - Selection of Area, - Measurement of GPS Coordinates and Polygon Formation, - Mapping of area with features- (Drainage, Altitudinal range, Aspect, Erosion points, Gullies, Nallahs), - Selection on species of grasses and legumes - Calculation of quantity of seeds/tufts/ seedlings required to be raised in the nursery
	May	Patch Method: <ul style="list-style-type: none"> - Start nursery operations to raise desired seedlings. and procure legume seeds Strip Method: <ul style="list-style-type: none"> - procure legume/ grass seeds
	June	<ul style="list-style-type: none"> - Fence (close) the area, - Do preventive in-situ SWC - Clean the area from undesired bushes/ weeds/other sp., Patch Method: <ul style="list-style-type: none"> - Do the Layout (spacing) for patches, (30 × 30×10cm), 1m apart in line (along Contour); Line to line distance 4m depending upon slope. Patches should be dug in staggered manner. (approx- 1500 patches) Strip Method: <ul style="list-style-type: none"> - Do the Layout (spacing) for strips, 20cm wide continuous strips scratched against slope of all Scrub and weeds and soil dug (10-15 cm). Strip to strip distance 2 -4 m depending upon slope (gentle slopes distance should be 2 m).
	July – Aug.	Patch Method: <ul style="list-style-type: none"> - Plant grass tufts in alternate patches, 13 tufts per patch, 10cm apart from each other. Keep length of 10cm from base of seedling (remove upper portion) (10,000 tufts) - -Sow legume seeds in alternate patches (6-8 grains of seeds in each patch) Strip Method: <ul style="list-style-type: none"> - Alternate strips to be sown with grasses and legumes seeds. (10,000 Tufts). 10kg legume seed/ Ha. Each running metre of strip should have 8-10 grains of seeds
	Sept -March	<ul style="list-style-type: none"> - Fertilization: 60 Kg Nitrogen/ ha and 60 Kg Phosphate/ Ha applied in three splits [first split basal application, second after seedling reaches around 30cm and third at initiation of boot stage of grasses. - Protection work (watch and ward, weeding)
Yr +1 (April- March)	April -March	<ul style="list-style-type: none"> - Fertilization: 60 Kg Nitrogen/ ha and 60 Kg Phosphate/ Ha applied in three splits [first split basal application, second after seedling reaches around 30cm and third at initiation of boot stage of grasses. - Protection work (watch and ward, weeding)

Source: Compiled by JICA Study Team (2017) based on information from Indian Grassland and Fodder Research Institute

Attachment II.3.7.1.7 Installation and Maintenance of Forest Boundary Pillars

An important activity in forest boundary management is markings on the ground depicting forest boundaries known as boundary pillars (large) and check pillars (small). There are specifications and design for boundary pillars and check pillars. Boundary pillar registers are maintained at range level showing serially number of boundary pillar and its forward and backward bearing and distance from next pillar, and so on.

1. Installation of Forest Boundary Pillars

Objective of this activity is to delineate forest boundary, prevent any encroachment in the forest, physical manifestation of forest boundary for staff and communities to see and function. The timing as well as activities required for the installation of forest boundary pillars are described in the table below.

Table 1 Activities for Installation of Forest Boundary Pillars

Year	Period	Activities
Year 0	Sept -Oct	<ol style="list-style-type: none"> 1) Ascertain location of Boundary Pillar (BP) from maps 2) Take GPS coordinate 3) Clear area of all grass, bush, debris, roots. 4) Dig foundation (80×80 ×25 cm), 5) Stone rubble filling. 6) Construct BP in cement concrete masonry as per design. 7) Plaster in cement mortar all sides. 8) Engrave BP number on side opposite to next BP. 9) White wash

Source: JICA Study Team (2017)

2. Maintenance of Forest Boundary Pillars

Objective of this activity is to improve longevity of BP, to delineate forest boundary, prevent any encroachment in the forest, physical manifestation of forest boundary for staff and communities to see and function. The timing as well as activities required for the installation of forest boundary pillars are described in the table below.

Table 2 Activities for Maintenance of Forest Boundary Pillars

Year	Period	Activities
Year 0	Sept -Oct	<ol style="list-style-type: none"> 1) Re-Ascertain location of Boundary Pillar (BP) from maps. 2) Take GPS coordinate 3) Asses damage. 4) Repair BP. 5) Plaster in cement mortar all sides. 6) Engrave BP number on side opposite to next BP. 7) White wash

Source: JICA Study Team (2017)

Attachment II.3.7.1.8 Indicative Seedling Production Information for Potential Species for the Project

The following tables were compiled based on following sources of information:

- ◆ Plantation Techniques of Important Trees/ Shrubs/ Herbs of Himachal Pradesh- HPFD (2015)
- ◆ Forest Nursery Handbook; C.D. Katoch (1991)
- ◆ Technology of Forest Nurseries; A. N Chaturvedi(1994)
- ◆ Information for HPFD officers/staff

(1) Normal Plant Seedlings

Table 1. Seedling Production Information for Normal Plants

No	Species	Vernacular Name/ English Name	Type of Seedling Pot, (P), Bare Root (B), Root/ Shoot Cutting (R/S)	Pot Size (cm) Width (W) and Length (L)		Standard Size of Seedling for Planting (cm) Height (H) and Collar Girth (CG)		Sowing Month	Total Nursing Period (month)	Planting Month
				W	L	H	CG			
1	<i>Abies pindrow</i>	Silver fir	P	12.5	22.5	>30	>1.2	Oct-Dec	36 - 42	Jul-Aug
2	<i>Picea smithiana</i>	Spruce	P	12.5	22.5	>30	>1.2	Jun-Jul	36-42	Jul-Aug
3	<i>Cedrus deodara</i>	Deodar/ Cedar	P	12.5	22.5	> 30	> 1.2	Nov-Dec	24- 30	Jul-Aug
4	<i>Pinus roxburghii</i>	Chir/ Chil	P	12.5	22.5	> 30	> 1.2	Sep-Oct	18-24	Jul-Aug
5	<i>Pinus wallichiana</i>	Blue Pine/ Kail	P	12.5	22.5	> 30	>1.2	Mar-Apr	18-30	Jul-Aug
6	<i>Pinus gerardiana</i>	Chilgoza	P	12.5	45	> 23	> 1.0	Jul-Aug	24 - 36	Dec
7	<i>Juniperus macropoda</i>	Juniper/ Pencil cedar	B/P	12.5	22.5	> 30	> 1.0	Nov-Dec	24-36	Dec
8	<i>Acacia catechu</i>	Khair	P	12.5	22.5	>45	> 1.0	Mar	6	Jul-Aug
9	<i>Aegle marmelos</i>	Bel	P	12.5	22.5	>45	>1.0	Jul (Soon after seed collection)	2-24	Jul-Aug
10	<i>Aesculus indica</i>	Khanor	B			>45	>1.5	Dec	12	Dec-Jan
11	<i>Albizzia lebbek</i>	Kala Siris	P	12.5	22.5	>45	>1.5	Feb-Mar	6-18	Jul-Aug
12	<i>Albizzia stipulata</i>	Ohi	P	12.5	22.5	>60	>1.5	Feb-Mar	9-12	Jul-Aug
13	<i>Alnus nepalensis/ A. nitida</i>	Kunish	B			>60	>1.5	Feb-Mar	21	Dec-Jan

No	Species	Vernacular Name/ English Name	Type of Seedling Pot, (P), Bare Root (B), Root/ Shoot Cutting (R/S)	Pot Size (cm) Width (W) and Length (L)		Standard Size of Seedling for Planting (cm) Height (H) and Collar Girth (CG)		Sowing Month	Total Nursing Period (month)	Planting Month
				W	L	H	CG			
14	<i>Azadirachta indica</i>	Neem	P	12.5	22.5	>45	>1.2	Jun-Jul	12	Jul-Aug
15	<i>Bauhinia variegata</i>	Kachnar	R/S	12.5	22.5	>60	1-2	May-Jun	12-15	Jul-Aug
16	<i>Bombax ceiba</i>	Semal	P	12.5	22.5	>60	>1.2	May-Jun	12	Jul-Aug
17	<i>Toona ciliata</i>	Toon	P	12.5	22.5	>60	>1.5	Feb-Mar (Soon after seed collection)	12-18	Jul-Aug
18	<i>Dalbergia sissoo</i>	Tali	P	12.5	22.5	>60	1.5 - 2	Feb-Mar	6-18	Dec-Jan Jul-Aug
19	<i>Emblica officinalis</i>	Amla	P	12.5	22.5	>60	>1.5	Mar-Apr	6-18	Dec-Jan Jul-Aug
20	<i>Grewia optiva/ G. Oppositifolia</i>	Bihul/Dhaman	P	12.5	22.5	>60	>1.5	Feb-Mar	18-24	Dec-Jan Jul-Aug
21	<i>Mangifera indica</i>	Mango	P	12.5	22.5	>60	>1.5	Jun-Jul	12	Jul-Aug
22	<i>Melia azadirachta</i>	Drek	P	12.5	22.5	>60	>1.5	Feb-Mar	12	Dec-Jan Jul-Aug
23	<i>Morus alba</i>	Shehtoot	B			>200	>2	May-Jun	6-18	Dec-Jan
24	<i>Pongamia pinnata</i>	Pongamia	P	12.5	22.5	>60	1-2	May-Jun	12	Jul-Aug
25	<i>Quercus leucotrichophora</i>	Ban	P	12.5	22.5	>45	>1.5	Dec	18-24	Jul-Aug
26	<i>Robinia pseudoacacia</i>	Robinia	R/S			>60	>1.5	Mar-Apr	9	Dec-Jan
27	<i>Salix alba</i>	Badha	B			>200	>2 - 2.5	Dec-Jan	6-12	Dec-Jan Jul-Aug
28	<i>Sapindus mukorossii</i>	Ritha	P	12.5	22.5	>60	>1.5	Jan-Feb	12-18	Dec-Jan Jul-Aug
29	<i>Syzygium cumini</i>	Jamun	P	12.5	22.5	>45	>1.5	Jun-Jul	12	Jul-Aug
30	<i>Terminalia bellerica</i>	Behra	P	12.5	22.5	>60	>1.2	Feb-Mar	18	Jul-Aug
31	<i>Terminalia arjuna</i>	Arjuna	P	12.5	22.5	>60	>1.5	Jun-Jul	12	Jul-Aug
32	<i>Terminalia chebula</i>	Harar	P	12.5	22.5	>45	>1.5	Jun-Jul	18-30	Jul-Aug
33	<i>Artocarpus lakoocha</i>	Dheoun	P	12.5	22.5	>60	>1.2	Jun-Jul	12-24	Jul-Aug

No	Species	Vernacular Name/ English Name	Type of Seedling Pot, (P), Bare Root (B), Root/ Shoot Cutting (R/S)	Pot Size (cm) Width (W) and Length (L)		Standard Size of Seedling for Planting (cm) Height (H) and Collar Girth (CG)		Sowing Month	Total Nursing Period (month)	Planting Month
				W	L	H	CG			
34	<i>Hicoria carya</i>	Pecanut	P	12.5	22.5	>60	>2.0	Mar-Apr	12	Jul-Aug
35	<i>Dendrocalamus spp</i>	Bans	P	12.5	22.5	>60	>1.2	Apr	15-27	Jul-Aug
36	<i>Terminalia tomentosa</i>	Sain	P	12.5	22.5	>45	>1.5	Feb-Mar	18	Jul-Aug
37	<i>Prunus armenica</i>	Chuli	B			>45	>1.5	Sep-Oct	24	Dec-Jan
38	<i>Prunus cornuta/ P. Cerassoides/ Ppadus</i>	Paza	P	12.5	22.5	>45	>1.5	Sep-Oct	9	Jul-Aug
39	<i>Olea glandulifera</i>	Thira	P	12.5	22.5	>45	> 1.2	May -Jun	12	Jul-Aug
40	<i>Cassia seamia</i>	Cassia	P	12.5	22.5	>60	>1.2	Feb-Mar	12	Jul-Aug
41	<i>Acacia nilotica</i>	Kikkar	B	12.5	22.5	>45	>1.0	Mar	6-18	Jul-Aug
42	<i>Butea monosperma</i>	Dhak	P	12.5	22.5	>30	>1.0	Feb-Mar	12	Jul-Aug
43	<i>Populus ciliata/ P. Alba/ P. deltoides</i>	Poplar	Cutting			>200	>2-2.5	Dec-Jan	12	Dec-Jan
44	<i>Juglans regia</i>	Walnut	R/S			>45	>2.0	Nov-Dec	24	Nov-Dec
45	<i>Acer oblonga/ Acer pictum</i>	Maple	B			>60	>1.5	Mar-Apr	12	Nov-Dec
48	<i>Corylus colurna</i>	Thangi/ Hazelnut	B/P	12.5	22.5	>45	>1.0	Nov-Dec	24-36	Dec-Jan

Source: Compiled by JICA Study Team (2017)

(2) Tall Plant Seedlings

Table 2. Seedling Production Information for Tall Plants

No	Species	Vernacular Name/ English Name	Type of Seedling Pot, (P), Bare Root (B), Root/ Shoot Cutting (R/S)	Pot Size (cm) Width (W) and Length (L)		Standard Size of Seedling for Planting (cm) Height (H) and Collar Girth (CG)		Sowing Month	Total Nursing Period (month)	Planting Month
				W	L	H	CG			
1	<i>Abies pindrow</i>	Silver fir	P	20	30	>40	>1.5	Oct-Dec	48 - 52	Jul-Aug
2	<i>Picea smithiana</i>	Spruce	P	20	30	>40	>1.5	Jun-Jul	48-52	Jul-Aug
3	<i>Cedrus deodara</i>	Deodar/ Cedar	P	17.5	30	> 35	> 1.4	Nov-Dec	36-42	Jul-Aug
4	<i>Pinus roxburghii</i>	Chir/ Chil	P	17.5	30	> 40	> 1.5	Sep-Oct	36-42	Jul-Aug
5	<i>Pinus wallichiana</i>	Blue Pine/ Kail	P	17.5	30	> 40	>1.5	Mar-Apr	36-42	Jul-Aug
6	<i>Pinus gerardiana</i>	Chilgoza	P	20	25	> 30	> 1.2	July-Aug	42-48	Dec
7	<i>Juniperus macropoda</i>	Juniper/ Pencil cedar	B/P	17.5	30	> 35	> 1.2	Nov-Dec	42-48	Dec
8	<i>Acacia catechu</i>	Khair	P	17.5	30	>60	> 1.5	Mar	12-18	Jul-Aug
9	<i>Aegle marmelos</i>	Bel	P	17.5	30	>60	>1.5	Jul (Soon after seed collection)	24-36	Jul-Aug
10	<i>Albizia lebbek</i>	Kala Siris	P	17.5	30	>60	>1.7	Feb-Mar	18-24	Jul-Aug
11	<i>Albizia stipulata</i>	Ohi	P	17.5	30	>60	>1.7	Feb-Mar	18-24	Jul-Aug
12	<i>Alnus nepalensis/A. nitida</i>	Kunish	B			>60	>1.5	Feb-Mar	18-24	Dec-Jan
13	<i>Azadirachta indica</i>	Neem	P	17.5	30	>60	>1.5	Jun-July	18-24	Jul-Aug
14	<i>Bombax ceiba</i>	Semal	P	17.5	30	>60	>1.5	May-Jun	18-24	Jul-Aug
16	<i>Toona ciliata</i>	Toon	P	17.5	30	>60	>1.5	Feb-Mar (Soon after seed collection)	18-24	Dec-Jan Jul-Aug
17	<i>Dalbergia sissoo</i>	Tali	P	17.5	30	>60	1.5 - 2	Feb-Mar	24-30	Dec-Jan Jul-Aug
18	<i>Emblica officinalis</i>	Amla	P	17.5	30	>60	>1.5	Mar-Apr	18-24	Dec-Jan Jul-Aug
19	<i>Grewia optiva/ G. Oppositifolia</i>	Bihul/ Dhaman	P	17.5	30	>60	>1.5	Feb-Mar	24-30	Dec-Jan Jul-Aug
20	<i>Melia azadirachta</i>	Drek	P	17.5	30	>60	>1.5	Feb-Mar	12-18	Dec-Jan Jul-Aug

No	Species	Vernacular Name/ English Name	Type of Seedling Pot, (P), Bare Root (B), Root/ Shoot Cutting (R/S)	Pot Size (cm) Width (W) and Length (L)		Standard Size of Seedling for Planting (cm) Height (H) and Collar Girth (CG)		Sowing Month	Total Nursing Period (month)	Planting Month
				W	L	H	CG			
21	<i>Pongamia pinnata</i>	Pongamia	P	17.5	30	>60	1-2	May-Jun	12-18	Jul-Aug
22	<i>Quercus leucotrichophora</i>	Ban	P	17.5	30	>60	>1.5	Dec	24-30	Jul-Aug
23	<i>Sapindus mukorossii</i>	Ritha	P	17.5	30	>60	>1.5	Jan-Feb	18-24	Dec-Jan Jul-Aug
24	<i>Syzygium cuminii</i>	Jamun	P	17.5	30	>60	>1.7	Jun-Jul	18-24	Jul-Aug
25	<i>Terminalia bellerica</i>	Behra	P	17.5	30	>60	>1.5	Feb-Mar	24	Jul-Aug
26	<i>Terminalia arjuna</i>	Arjuna	P	17.5	30	>60	>1.5	Jun-Jul	18-24	Jul-Aug
27	<i>Terminalia chebula</i>	Harar	P	17.5	30	>60	>1.5	Jun-Jul	30-36	Jul-Aug
28	<i>Artocarpus lakoocha</i>	Dheoun	P	17.5	30	>60	>1.5	Jun-Jul	24-30	Jul-Aug
29	<i>Hicoria carya</i>	Pecanut	P	17.5	30	>60	>2.0	Mar-Apr	18-24	Jul-Aug
30	<i>Terminalia tomentosa</i>	Sain	P	17.5	30	>60	>1.5	Feb-Mar	24-30	Jul-Aug
31	<i>Prunus cornuta/ P. Cerassoides/ Ppadus</i>	Paza	P	17.5	30	>60	>1.5	Sep-Oct	18-24	Jul-Aug
32	<i>Olea glandulifera</i>	Thira	P	17.5	30	>60	> 1.2	May -Jun	18	Jul-Aug
33	<i>Cassia seamia</i>	Cassia	P	17.5	30	>60	>1.2	Feb-Mar	18	Jul-Aug
34	<i>Butea monosperma</i>	Dhak	P	12.5	22.5	>30	>1.2	Feb-Mar	18	Jul-Aug
35	<i>Corylus colurna</i>	Thangi/ Hazelnut	B/P	17.5	30	>60	>1.2	Nov-Dec	30-40	Dec-Jan

Source: Compiled by JICA Study Team (2017)

Attachment II.3.7.1.9 Indicative Tending Operations

Secondary Silvicultural Operations¹ (Tending) is defined as operations carried out for the benefit of a forest crop at any stage of its life between the seedling and mature stages; it essentially covers operations on the crop itself and on the competing vegetation, and includes thinning/ improvement felling, cleaning, thinning, climber cutting and weeding. Following tending operations are described hereunder:

- ◆ Thinning/ improvement felling
- ◆ Climber Cutting
- ◆ Cleaning
- ◆ Pruning

1 Thinning

Thinning is defined as a felling made in an immature stand for the purpose of improving the growth and form of the trees that remain, without permanently breaking the canopy. Whereas the main object in view in weeding and cleaning is the removal of undesirable elements from a crop, thinning is chiefly concerned with promoting good growth in the stems that are retained.

One of the main reasons for thinning tree crops is to minimize the risks of loss from pests and diseases. On exposed sites, possible damage from physical agencies has also to be avoided as far as possible. With exposure to strong winds, it is important to develop a good root system, and where there is liability to snow-break, well-balanced crowns are desirable. The windward margin of a plantation requires special consideration to ensure maximum protection for rest of the stand.

As a given site is only capable of yielding a definite maximum increment, it is important that the yield shall be in the most profitable form. What is most profitable will depend on species and markets. An assessment will usually have been made when the object of management were laid down, but in general terms it will involve steps to concentrate the potential increment on the best available stems in numbers determined by the dimensions and rates of growth aimed at. Thus it may be desired to produce saw-logs in as short a time as possible, or to obtain a maximum outturn of smaller poles or pulpwood. Quality of wood may be as important as quantity, and depends on such factors as ring width and knottiness.

Standard Grades of Ordinary Thinning:

(1). Light Thinning (A-grade)

This is limited to the removal of dead, dying, diseased and suppressed trees, i.e. classes V, IV and III. Grade A is of no practical use, but forms a convenient initial stage, especially in comparative research on the effect of thinning on increment.

(2). Moderate Thinning (B-grade)

This consists in the further removal of defective dominated stems and whips. Branchy advance growth which it is impracticable or not desirable to prune may also be taken, i.e. classes V, IV, III,

¹ General Silviculture For India, Champion & Seth

II (b) and I(d) and an occasional I (c). B-grade is also of little use in ordinary practice, having but little influence on the increment of the remaining stems.

(3). Heavy Thinning (C-grade)

This consists in the further removal of the remaining dominated stems and such of the defective dominants as can be removed without making lasting gaps in the canopy, i.e. classes V, IV, III, II and I (b), (c) and (d).

(4). Very heavy thinning (D-grade)

The distinguishing feature of this grade is that it also takes some of the good dominants, subject to the same condition of not making any lasting gap in the canopy. The trees selected for removal are such that the remaining crop consists as far as possible of trees with good boles and crowns, well and evenly distributed over the area, and with space for further development, i.e. classes V, IV, III, II, I (b), (c), (d) and some I (a).

Application of thinning:

Ordinary thinning is best suited to pronounced light-demanders such as teak and chir pine in which the dominants require plenty of room and the trees which drop into the lower canopy layers practically cease growth and die. Sissu must be well thinned from earliest youth, whereas mulberry and many shade-bearers must be kept close to eliminate side branches and give clean timber.

Thinning interval:

The rate of growth of trees varies with age, the typical pattern being an S-curve with a somewhat slow start for a few years then a period of rapid development that subsequently falls off with approaching maturity, and finally a relatively slow rate of growth particularly in height. For simplicity in management, there is a tendency to conform to the cycle most commonly adopted for operations in the natural forest, with a thinning cycle of 10 years for crops of middle age, reduced to 5 years for the youngest stages. Such schedules will vary with species and site quality, and is indicated in the working plan, based on all the experience available.

Improvement felling:

The standard definition of Improvement Felling is “the removal or destruction of the less valuable trees in a crop in the interest of the better growth of the more valuable individuals “. The operation does not ordinarily aim at getting regeneration though it usually includes aiding advance growth and encouraging the filing up of blanks; above all, realisation of revenue should never be considered as one of its objects, any return from the material removed being purely incidental.

Improvement fellings are usually prescribed for inferior forest, especially those which owe their poor condition to over felling, excessive grazing or burning, as offering the best means of bringing them back into regular production. Consequently many working plans in all parts of India have an “Improvement working circle” in which such fellings are the chief prescription –Improvement fellings are also often prescribed for the as-yet unconverted parts of forest under conversion to even-aged form.

2 Climber Cutting:

Climbers are a great menace to young generation and must be closely watched, or in the course of a month or two, they may pull over the saplings, break the leading shoots, and smother the crowns; their removal constitutes a regular part of weeding operations. The heavy-foliaged soft climbers, larger woody species may become equally bad. Cutting back is usually not very efficacious, and it is often more economical in the long run to trace back the climbing stems to the rootstocks and dig them out. Such measures should obviously be taken before any seed has set, and before the season of maximum growth, which usually means during the rainy season when also the ground is soft.

3 Cleaning

Cleaning is defined as a tending operation done in a sapling crop involving the removal or topping of inferior growth (including individuals of the favoured species), climbers etc, when they are interfering with the better grown individuals of the favoured species. It merges with thinning as the saplings grow into poles.

Cleaning natural regeneration:

Natural regeneration of the desired species is almost always accompanied by regeneration, both seedling and coppice, of less desirable trees, shrubs, herbs and climbers. Weeding and cleaning are accordingly very generally necessary from an early stage, and continue with decreasing intensity for a period of years depending on conditions. 'Cleaning' is taken to include the spacing out of dense young regeneration under 10 cm (4") diameter. In mixed coniferous regeneration, the dangerous weeds are chiefly woody shrubs such as Spiraea, Rubus, Indigofera etc, and tall herbaceous growth of Senecio or ferns etc, but sometimes blue pine, silver fir or oak have to be removed in cleanings when the more valuable deodar requires assistance.

The amount of such cleaning that must be done has to be determined separately for each type and set of conditions. It is evident that knowledge of the relative rates of growth of the species that it is desired to retain is essential, or it may be found that the secondary species overtop the chief one at a stage when it is difficult to remedy the position. Not rarely, it is desirable to retain these secondary species as an admixture with the major species, but to keep them to the lower canopy layers.

Cleaning artificial regeneration:

Treatment is exactly same as for natural regeneration.

4 Pruning:

Pruning methods developed to concentrate as much as possible of the potential increment of an area on selected elite stems, necessitate pruning to realize their full benefit. The necessary stimulus being thus provided, it has been shown that pruning can be done at reasonable cost and need not result in unsoundness. Such pruning should of course only be done on the elite stems numbering up to a small multiple of the final yield crop. It must be commenced at an early stage, at the second or third thinning, and completed in about three stages up to the height adopted.

Method of pruning:

Dead, moribund and some green branches are cut off as near the bole as possible. The use of a short light ladder with an ordinary hand-saw is preferable. Pruning can be mechanized through the use of a small circular saw mounted on a handle of suitable length, driven from a small portable motor (like the portable chain-saw), or a tractor engine.

Height of Pruning:

The height up to which pruning should be carried varies with species and conditions, but in young plantations is usually about one half to three fifths of the total height. The operation is repeated at successive thinning till the maximum height which has been decided on as practicable and necessary is reached. This is most usually about 4-5 m to ensure a clean bottom log, but is not rarely taken up to the second log, say 7-8 m. Ordinarily not more than the lower 20-30% of the total length of the green crown should be removed; more than this will cause some loss of increment.

Attachment II.3.7.1.10 TOR for Monitoring Data Accumulation for Nursing /Planting of Tall Plants

1. Introduction

In HPFD, introduction of tall plants is adopted for better survival and growth of planted seedlings, and the Project will utilize tall plants for some treatments and species in accordance with notifications issued by the state government and HPFD. In this regard, the Project is expected to carry out monitoring of the project activities for nursing, planting, protection of tall plants under the project area and compile and analyse the compiled data to identify/ propose the appropriate and realistic work norms for better tall plants management in the state.

2. Objectives

The objectives of the study are to;

- ◆ Identify realistic work norms (for materials and labours) for nursery operations, planting/ tending operations, and
- ◆ Assess the growth performance on the tall plants,

3. Agencies to be engaged and process of selection

The PMU will request the listed institutions for submission of proposals to conduct the study as an outsourced work. The procurement committee or a special committee constituted at the PMU level with representatives from HPFD, PMCs and external experts will evaluate the proposals and commission the task to the eligible institution.

4. Approach and Methodology

4.1 Collection and Analysis of Existing Tall Plants Relevant Information

The outsourced agency shall collect i) existing cost norms, work norms, handbook, or technical information on tall plants (e.g. Plantation Techniques of Important Trees/ Shrubs/ Herbs of Himachal Pradesh- HPFD (2015), Forest Nursery Handbook; C.D. Katoch (1991), Technology of Forest Nurseries; A. N Chaturvedi (1994)) and ii) satellite images showing the vegetation conditions procured by the Project before the 1st batch of plantation and iii) other required information from HPFD officers/ staff.

4.2 Identification and Selection of Monitoring Sites

The outsourced agency shall identify the monitoring sites by analysing the data collected in Section 4.1 and consultation with PMU/ PMC and other key informants who have knowledge of nursing/ planting operation on tall plants. The agency shall select one or two site/s each in different ecosystems (vegetation) in the project area. In total, maximum 16 sites shall be selected from eight major types of vegetation as follows;

- | | |
|-------------------------------------|-----------------------------------|
| 1. Tropical Moist Deciduous Forest | 5. Himalayan Dry Temperate Forest |
| 2. Tropical Dry Deciduous Forest | 6. Sub-alpine Forest |
| 3. Sub-Tropical Pine Forest | 7. Moist Alpine Forest |
| 4. Himalayan Moist Temperate Forest | 8. Dry Alpine Forest |

4.3 Conduct of the Monitoring and Data Accumulation

The outsourced agency shall conduct monitoring of nursing/ planting operations at the selected sites and compile data which to be submitted to PMU semi-annually. The agency shall be responsible for, but not be limited to, the following items for the monitoring and data accumulation. The monitoring items shall be finalised after consultation with PMU/ PMC after the commencement of the project.

[At the Stage of Seedling Production]

Name of species, types of seedlings, size of seedlings (Hight and Collar Girth), nursing period, planting date, soil conditions, weather conditions (e.g. precipitation, air humidity, temperature number of rainy days), etc.

[At the Stage of Planting and Tending]

Name of species, planting date, species-wise growth performances (including survival rates), tending work (period, type of work), soil conditions, weather conditions, etc.

5. Duration

The overall study shall be completed within 8 years, considering tall plants require longer nursing period compared with normal plants (some species require nearly 5.5 years) and planting period also needs to be monitored during the implementation course of the Project.

6. Outputs

- Report on the selected monitoring sites to be set-up
- Semi-annual monitoring reports on accumulated monitoring data, and analysis on the results
- Report on recommended work norms for nursing/planting operation of tall plants to be adopted in HP state

7. Required Human Resource Inputs

Indicative human resource inputs required are indicated in **Table 1** below.

Table 1 Indicative Human Resource Inputs for the Proposed Study

No.	Activity	Input
1	Collection and Analysis of Tall Plants Relevant Information in the Project	Input: 3 experts/ Duration: 3 months
2	Identification and Selection of Monitoring Sites	Input: 3 experts/ Duration: 6 months
3	Conduct of the Monitoring and Data Accumulation	Input: 3 experts and 6 assistants Duration: 7 years
4	Report Writing and Presentation/Consultation	Input: 2 experts/ Duration: 1 months/ 6 months

Source: JICA Study Team (2017)

END

Attachment II.3.7.1.11 TOR for Monitoring Data Accumulation for Effective Pasture Management

1. Introduction

The dry alpine pasture has a total of 707,708 ha (470,564 ha in 10 territorial divisions and 237,143ha in five wildlife divisions) in the proposed project division areas. One of the project activities will focus on the improvement of dry alpine pastures. And the models developed by the Indian Grassland and Fodder Research Institute are to be adopted for better biomass productivity and re-sowing of pastures/grasslands. In this regard, monitoring data of these interventions such as nursing/ planting and tending for pasture management is required to assess the project approach on pasture improvement and identify/ propose the more appropriate and realistic work norms for further effective pasture management in the state.

2. Objectives

The objectives of the study are to;

- ◆ Identify and propose realistic work norms (for materials and labours) for nursery operations, planting/ tending operations for pasture management, and
- ◆ Assess the growth performance/ biomass records after planting/sowing

3. Agencies to be engaged and Process of Selection

The PMU will request the listed institutions for submission of proposals to conduct the study as an outsourced work. The procurement committee or a special committee constituted at the PMU level with representatives from HPFD, PMC and external experts will evaluate the proposals and commission the task to the eligible institution.

4. Approach and Methodology

4.1 Collection and Analysis of Information of Existing Pasture

The outsourced agency shall collect i) information on the selected project intervention area of pasture improvement in dry alpine pasture (e.g. area (ha), type of species, GPS data, etc.), ii) existing cost/work norms within HPFD and other relevant organisations, iii) satellite images showing the dry alpine pasture conditions procured by the Project at the initial stage of the Project, and iv) other required information from Indian Grassland and Fodder Research Institute, HPFD and other relevant organisations.

4.2 Identification and Selection of Monitoring Sites

The outsourced agency shall identify the monitoring sites by analysing the data collected in Section 4.1 and consultation with PMU/ PMC and other key informants who have knowledge of nursing/ planting operation on pasture management. The agency shall select three or four sites located in dry alpine pasture under the project area.

The dry alpine pasture is dominated in three divisions (Kinnaur: 205,065ha, Lahul: 162,185ha, Spiti wildlife: 115,741ha), which covers about 68% of the area. Six other divisions (GHNP, Saharan wildlife, Pangi, Rohru, Chamba wildlife, and Kullu wildlife) have the dry alpine pasture exceeding 20,000ha. Therefore, the monitoring sites shall be selected from above nine divisions which account for about 93% of the dry alpine pasture.

4.3 Conduct of the Monitoring and Data Accumulation

The outsourced agency shall conduct monitoring of nursing/ planting operations at the selected sites and compile data which to be submitted to PMU semi-annually. The agency shall be responsible for, but not be limited to, the following items for the monitoring and data accumulation. The monitoring items shall be finalised after consultation with PMU/ PMC after the commencement of the Project.

[At the Stage of Seedling Production]

Name of species, types of seedlings, size of seedlings (Hight and Collar Girth), nursing period, planting date, soil conditions, weather conditions (e.g. precipitation, air humidity, temperature number of rainy days), etc.

[At the Stage of Planting / Tending]

Name of species, planting date, growth performance, biomass record, tending work (period, type of work), soil conditions, weather conditions, etc.

5. Duration

The overall study shall be completed within 8 years, considering the monitoring is required both seedling and planting period during the course of the project implementation.

6. Outputs

- a) Report on the selected monitoring sites to be set-up
- b) Semi-annual monitoring reports on accumulated monitoring data, and analysis on the results
- c) Report on recommended work norms for nursing/planting operation of pasture management to be adopted in HP state

7. Required Human Resource Inputs

Indicative human resource inputs required are indicated in **Table 1** below.

Table 1 Indicative Human Resource Inputs for the Proposed Study

No.	Activity	Input
1	Collection and Analysis of Information of Pasture Management under the Project	Input: 3 experts Duration: 3 months
2	Identification and Selection of Monitoring Sites	Input: 3 experts Duration: 5 months
3	Conduct of the Monitoring and Data Accumulation	Input: 2 experts and 2 assistants Duration: 7 years
4	Report Writing and Presentation/Consultation	Input: 2 experts Duration: 1 months/ 6 months

Source: JICA Study Team (2017)

END

Attachment II.3.7.1.12 TOR for Study of Effective SWC and Land Slide Control Measures

1. Introduction

While large-scale land slide control will not be covered as an intervention by the Project, occurrence of land-slides/ slips especially along road side is prevalent in HP. In order to contribute to tackle such issues, a study to envisage effective SWC and land slide/slip control measures will be implemented in the Project.

2. Objectives

The objectives of the study are to propose recommended procedures to examine effective SWC and land slide/slip control measures applicable in HP state.

3. Agencies to be engaged and Process of Selection

The PMU will request the listed institutions having expertise in land slide/slip control for submission of proposals to conduct the study as an outsourced work. The procurement committee or a special committee constituted at the PMU level with representatives from HPFD, PMC and external experts will evaluate the proposals and commission the task to the eligible institution.

4. Approach and Methodology

4.1 Collection and Analysis of Information/ Data on Land Slide/Slip and its Measures

The outsourced agency shall collect i) existing secondary information/ data such as technical handbook/ manual on land slide/ slip measures, geological features, frequency/ location of earthquake, climate conditions, etc. ii) satellite images procured by the Project, and other required information from HPFD officers/ staff. Also, field surveys to the specific sites requested by HPFD shall be conducted to confirm current status of land slide/slip and measures to be taken.

4.2 Preparation of Draft Technical Guidelines

The outsourced agency shall prepare draft of technical guidelines by analysing the data collected in Section 4.1. Firstly, the overall structure of each guideline needs to be prepared and made consensus with PMU/ PMC, then the draft guidelines shall be submitted for their comments. The agency shall revise the draft guidelines based on the comments before conducting the field trial/ investigation as mentioned in Section 4.3. Types of technical guidelines are indicated as follows;

- i. Technical guideline for overall surveying, planning and designing,
- ii. Technical guidelines for hazardous area identification/ hazard map preparation,
- iii. Technical guideline for field survey at the landslide/slip areas, and
- iv. Technical guideline for planning and designing of SWC and landslide/slip control measures

4.3 Conduct of the Field Trial/ Investigation

Following the drafted technical guidelines, field trial/ investigation activities shall be carried out with selected two or three divisions. The activities shall be mainly conducted by officers/staff of selected divisions with instruction/supervision of the outsourced agency. Through this trial, outputs such as hazard map, results of field survey and planning and designing of SWC and landslide/slip control measures are expected.

4.4 Exposure Visit to Uttarakhand

For training and exposure to landslide/land slip related technologies/ implementation in other states, the outsourced agency is requested to arrange an exposure trip to Uttarakhand and mainly visiting the JICA technical cooperation project and loan project which are tackling on capacity development and implementation of landslide/land slip prevention technologies.

The exposure visit is assumed in following number of participants and duration:

Maximum Participants: 10 project related HPFD officers

Duration: 5 days

4.5 Finalisation of the Technical Guidelines

The outsourced agency shall organise consultation meetings with officers/staff of selected divisions for further improvement of the guidelines. The results of the field trial/ investigation activities as well as updated guidelines shall be submitted PMU/ PMC for their comments and finalisation.

5. Duration

The overall study shall be completed within two years.

6. Outputs

- a) Technical guideline for overall surveying, planning and designing
- b) Technical guidelines for hazardous area identification/ hazard map preparation
- c) Technical guideline for field survey at the landslide/slip areas
- d) Technical guideline for planning and designing of SWC and landslide/slip control measures

7. Required Human Resource Inputs

Indicative human resource inputs required are indicated in **Table 1** below.

Table 1 Indicative Human Resource Inputs for the Proposed Study

No.	Activity	Input
1	Collection and Analysis of Information/ Data on Land Slide/Slip and its Measures	Input: 3 experts Duration: 3 months
2	Preparation of Draft Technical Guidelines	Input: 3 experts Duration: 6 months
3	Conduct of the Field Trial/ Investigation	Input: 3 experts and 4 assistants Duration: 10 months
4	Finalisation of the Technical Guidelines	Input: 3 experts Duration: 5 months

Source: JICA Study Team (2017)

END

Attachment II.3.7.2.1 Indicative TOR for Pilot Projects on Biodiversity Corridor

1. Overview

There are 31 protected areas within the state and the total area is about 15% of state's geographical areas. Under the targeted project areas, four protected areas and two wildlife ranges are located. Numbers and areas of protected areas are in mass scale, but some protected areas are isolated. Protected areas such as national parks and wildlife sanctuaries play a critical role in protection and recovery of some endangered species, while human-wildlife conflicts need to be addressed as one of the key issues outside protected areas. In order to tackle these different issues without interfering the efforts of each other, a carefully-designed network of protected areas needs to be examined, which involves establishment of biodiversity corridors to bridge isolated protected areas and connect them effectively. Conservation reserves and community reserves are one of potential designations to constitute biodiversity corridors. Management of biological corridors would require understanding and cooperation of local communities, and human-wildlife conflict would need to be mitigated while securing local people's sustainable livelihood.

Though the proposed Project is not planned to establish biodiversity corridors in the given time frame and the current project framework, components and activities of the proposed Project shall contribute to support enhancing biodiversity corridors.

2. Objectives

- To identify potential areas for biodiversity corridor designation
- To assess the impact of biodiversity corridor designation of the potential areas on the livelihood of local communities, biodiversity conservation and human-wildlife conflict mitigation
- To design and suggest some effective networks of protected areas with potential corridor designation

3. Methods

3.1 Baseline Survey

The contracted agency shall coordinate and collaborate with HPSBB, territorial divisions and wildlife divisions of HPFD to prepare biodiversity inventory in the project area of HPFEM&LIP. People's Biodiversity Register (PBR) data of HPSBB would be able to provide vital data for inventory, however some data of PBR were confidential and careful discussion with HPSBB would be required to access and manage these data. Some areas may not have developed PBR by the time of the survey, and the contracted agency shall select some sampling sites for field surveys to supplement the inventory.

3.2 Identification of the Sites

The contracted agency shall analyze the data with GIS to identify 10 potential areas with focus on the area around four protected areas and two wildlife ranges for corridor designation. The contracted agency shall discuss with PMU to carry out initial identification of the area. Once the areas are identified, a field team of the agency shall visit the identified area and discuss with the BMC to see if they would agree to take part in the pilot project. The participating community shall be explained that the community will be interviewed for various data collection such as human-wildlife conflict and presence of certain species of fauna/flora.

3.3 Impact Assessment

The contracted agency shall assess the impact of corridor designation on livelihood of local communities by analyzing the current status of natural resource utilization by the communities and potential regulation imposed by designation conservation reserves, community reserves, or other designation which can serve as part of biodiversity corridors. The project shall also conduct impact assessment of corridor designation on biodiversity conservation and human-wildlife conflict mitigation in the area to evaluate the merit/demerit of the designation. The assessment shall cover the whole year to monitor the seasonal impacts.

3.4 Designing the Protected Area Network with Potential Biodiversity Corridors

The contracted agency shall design the protected area network with potential biodiversity corridors, describing the merit/demerit of the designed network. Several patterns of the network should be suggested for further examination with HPSBB, HPFD, and other concerned agencies.

4. Outputs

The contracted agency shall produce the following outputs.

1. Quarterly reports
2. Report on 10 potential sites for corridor designation (to explain why they are selected as potential sites)
3. Impact Assessment Report (to evaluate merit/demerit of the designation)
 - Impact assessment on livelihoods of local communities
 - Impact assessment on biodiversity conservation
 - Impact assessment on human-wildlife conflict mitigation
4. Report on Suggested Protected Area Network with Potential Biodiversity Corridors
 - Suggestion of several protected area network with potential biodiversity corridors
 - Each suggested network is explained with respective merit/demerit, anticipated management issues, and suggestion of countermeasures to these issues

5. Required Inputs

The pilot project would take 28 months in total inclusive of preparation, baseline survey, site identification, field survey and report preparation. Indicative inputs required are indicated in **Table 1** below.

Table 1 Indicative Inputs for the Proposed Pilot Project

No.	Activity	Input
1	Baseline Survey	Input: 4 experts Duration: 5 months
2	Identification of the Sites	Input: 4 experts Duration: 6 months
3	Impact Assessment	Input: 4 experts and 4 assistants Duration: 12 months
4	Designing the Protected Area Network with Potential Biodiversity Corridors	Input: 4 experts Duration: 2 months
5	Report Writing and Presentation/Consultation	Input: 4 experts Duration: 3 months

Source: JICA Study Team (2017)

END

Attachment II.3.7.2.2 Indicative TOR for Basic Study for Designing Biodiversity Assessment

1. Overview

The state has rich flora and fauna, and the entire state falls into the Himalayan Hotspot. There are 28 Key Biodiversity Areas (KBAs) and other sites/areas of high biodiversity values within the state. Data and information on flora/fauna/biodiversity of the state have been accumulated, however scientific data are still insufficient for effective planning and management and the updated status of biodiversity is not fully clear. Chronological data, such as species gradual disappearance and ecological degradation, are also limited, which makes it difficult to understand the dynamics and its ecological meaning and to monitor the natural environment on a long-term basis. Comprehensive biodiversity assessment and baseline surveys are therefore required to establish extensive database and develop strategies to address issues for improved scientific conservation and management of biodiversity in the state.

2. Objectives

- To develop methodology and select areas for assessment on a long-term basis, for improved scientific conservation and management of biodiversity

3. Methods

3.1 Baseline Survey (review of biodiversity assessments in other areas)

The contracted agency shall conduct literature/web survey on long-term assessment for biodiversity, not only in India but around the globe, to continuously monitor biodiversity in the area with a minimum effort. The survey shall review them by analyzing;

- Basic framework of the assessment, such as objectives, scales, selection methodology for assessment areas, methodologies of data collection in the field, data collectors in the field, range of target species, assessment frequency, methodologies of centralizing data for analysis, data analyzers, level of information disclosure and its methodology, etc.
- Cost of the assessment, such as data collection, data analysis, information disclosure, human resource development, facility development, public relations, etc.
- Output of the assessment data, such as application in nature conservation planning, provision of baseline data to EIA for development projects, utilization in research activities, etc.

People's Biodiversity Register (PBR) is one of the existing activities of biodiversity assessments in India, which should be analyzed in the same way for comparison. Another possible example is "Monitoring Site 1000" by Biodiversity Center of Japan. Some more examples shall be explored around the world and analyzed for further study. This baseline survey is expected for a duration of around three months.

3.2 Development and Designing of Biodiversity Assessment for the State

The contracted agency shall review and examine the examples, and develop basic concept of long-term biodiversity assessment, which is expected to fit to the needs and situation and to be most effective in the state. A system to involve local communities, how to centralize and analyze the data, and utility as biodiversity data would be a few of the key points to design the assessment. This development is expected for a duration of around three months.

3.3 Basic Study for Designing the Assessment

A basic study shall be conducted to test the assessment methodologies in the field. Two sites per ecosystem shall be identified from the following nine major ecosystem (vegetation) types in HP state for the trial assessment.

- a) Tropical Moist Deciduous Forest
- b) Tropical Dry Deciduous Forest
- c) Sub-Tropical Pine Forest
- d) Himalayan Moist Temperate Forest
- e) Himalayan Dry Temperate Forest
- f) Sub-alpine Forest
- g) Moist Alpine Forest
- h) Dry Alpine Forest
- i) Dry Aline Pasture

Tentative methodologies are followed to examine its practicability, and biodiversity data shall be collected, centralized and analyzed by the agency, the whole process of which shall be carefully monitored for future improvement. The process and outcome of the trial assessment shall be analyzed and revised, through which the design of the assessment shall be finalized for suggestion. The trial assessment and its revision would take one and a half year (18 months), since the assessment in the field should cover the whole season.

4. Outputs

The contracted agency shall produce the following outputs.

1. Quarterly reports
2. Report on the Review of Biodiversity Assessment around the Globe
3. Draft Biodiversity Assessment Plan
 - Suggested methodologies for data collection in the field
 - Suggestion of data centralization and its analysis, including its disclosure
 - Strategy for effective and efficient implementation and anticipated management issues

5. Required Inputs

The pilot project would take 27 months inclusive of preparation, baseline survey, site identification, field survey and report preparation. Indicative inputs required are described in **Table 1** below.

Table 1 Indicative Inputs for the Proposed Pilot Project

No.	Activity	Input
1	Baseline Survey	Input: 4 experts Duration: 3 months
2	Development and Designing of Biodiversity Assessment for HP state	Input: 4 experts Duration: 3 months
3	Basic Study for Designing the Assessment	Input: 4 experts, and 4 assistants Duration: 18 months
4	Report Writing and Presentation/Consultation	Input: 4 experts Duration: 3 months

Source: JICA Study Team (2017)

END

Attachment II.3.7.2.3 Indicative Activities for Eco Tourism

1. Overview

Himachal Pradesh is known for its natural beauty and tourism is a prominent sector in the state's economy. Especially, home stays, tents, and other tourism attractions taking advantage of the local socio-cultural heritages have been developed with assistances of various government initiatives. HPFD is also a part of the concerted efforts of promoting sustainable tourism and established Eco Tourism Society of Himachal Pradesh. The preliminary SWOT analysis of eco-tourism sector in the state is given below.

Table 1.1 SWOT – Eco-tourism in Himachal Pradesh

Strengths	Weaknesses	Opportunities	Threats
Access to rural areas with rich and untouched biodiversity 26 Wildlife Sanctuaries 5 National Parks	Detrimental to natural habitats with possible impact on flora and fauna, local vegetation, and plantations	Increased trend amongst domestic travellers for nature treks, camps, and eco-experience, bird watching, habitat observers, wildlife tours	Existing established eco-tourism
Himachal Pradesh's natural endowment – flora and fauna, accessible treks and hikes, and possibility for recreational activities	Air and noise pollution, danger to water bodies, risk of land slides and soil erosion, waste management	Social mobilisation through CBOs, Forest Committees etc. at GP levels	Strong influence of local deities in opening up local communities (Kullu, Kinnaur, Lahaul & Spiti) – Cultural shock and vulnerability
Policy support under HPFD Eco Tourism Policy for training, infrastructural development, marketing support through HP ECOSOS	Special skill training for community to run nature specific tourist programme	Local community participation in decision making and planning process	Unplanned construction an eyesore to local heritage and traditional architecture
Increased Foreign Exchange Generation	Language hindrances and hygiene training to cater foreign travellers	Unemployed trained youth as tour guides, trek guides	Mass tourism vs. Quality Tourist
Funds for Natural Resource Conservation, Protect Areas	Cultural threat from opening to increased tourist footfall	World heritage site in tribal areas such as Buddhist Monastery of Tabo in Spiti	
Increased Awareness on Environmental Issues	Seasonal and Cyclic trend	Ayurveda, Yoga, and Meditation centres such as Tibetan medicines	
	Status of basic amenities such as health care, money exchange, banking, etc. in tribal areas	Educational institutes – schools and colleges' growing interest in eco-clubs, green tasks etc.	

Source: JICA Study Team (2017)

2. Survey and Planning

Prior to the implementation of activities, the following works shall be undertaken.

- ◆ *Site Selection Survey / Consultations / Feasibility Study* – Under HPFD Eco-tourism policy, provisions are made for identification and development of new sites/circuits. Under the guidance of HP ECOSOC, liaison with existing scheme and the State Tourism

Department can be sought for initial scouring for sites. GP Mobilisers and Ward facilitators would play a key role in ascertaining the intent of community and nature of intervention

- ◆ *GP Level Implementation Plan* – Homestay and Eco-tourism schemes can be introduced in amalgamation at GP level. In tandem with other livelihood options suggested through the project, Homestay/Eco-tourism is proposed to be a *complementary activity* instead of a *mainstream focus* (owing to its seasonal nature), as it stands to benefit and offer synergies to former. Here, willing GPs will be required to mobilise the existing SHGs/CIGs, or FUGs to prepare a micro-plan in support from mobilisers/facilitators and VFDS/ sub-committees of BMC, and officials from HPFD, and Department of Tourism. Details of activities to be undertaken by the participating community are elaborated in next section.
- ◆ *Infrastructure Assessment and Development* – Economic (accommodation, roads and paths, communication) and Social (Health and Medicine, Sanitation) Infrastructure development are the heart of successful implementation of homestay/Eco-tourism based interventions. With reference to GPs in Kinnaur, Lahaul & Spiti, the relevance of these developments grows many folds to ensure a comfortable stay for the tourists and ease of service delivery by the community. HPFD stands to play a pivotal role in furthering the pre-requisite developments in tandem with its inter-departmental understanding with I&PH, DoRD, and Tourism Department.

3. Indicative Activities

Based on the assessment of the infrastructure, market orientation, and scale of investment, the activities can be designed for individual based, group based, or cluster based. An outline of each package is given in the table below. PMU shall make necessary assessment during its preparatory phase and develop the work plan.

Table 3.1 Indicative Outlines of the Project Activities under Eco Tourism

Category	Outline
Homestay (Individual)	<p>Not a preferred mode of intervention unless group level activity is not practical</p> <p>Selective HH (Women) to be supported to avail benefits under HP Homestay Scheme, 2008</p> <p>Financial Assistance for <i>One-room set up</i> on approval of a business-plan for homestay unit with special consideration of sustainability features such as energy and water conservation, waste collection/disposal/recycling, green construction, traditional architecture, experiential theme such as wooden art, organic farming, etc.</p> <p>Assistance for only One-room set up covering cost for aesthetic amenities and facilities</p> <p>Business-plan to be approved by VFDS/sub-committees of BMC in consultation with HPFD and Officials from Department of Tourism.</p>

Category	Outline
Homestay (Group)	<p>For villages en-route existing nature treks or where no nature based interventions are found to be suitable, there only homestay support can be extended as a group.</p> <p>SHG-BPL model (Women only) can be adopted where in the mobilised groups can create a rotation roaster to host guests (one at a time) and arrange for basic spending through their intra-group savings.</p> <p>No new construction to be supported under the project. Assistance to set-up one room per HH with basic amenities of bed linen, buckets, etc.</p> <p>HP Homestay Scheme has no provision to offer group level assistance other than individual registration based incentives and exemptions.</p>
Eco-Tourism (Group)	<p>Necessarily a group activity with inputs from village community to aid and assist in planning, implementation, and sustainable operations.</p> <p>Amalgamation of two schemes i.e. homestays and eco-tourism wherein benefits under former can be availed to meet the accommodation requirements for nature walks, treks, experiences.</p> <p>Group participation on Two-Models:</p> <p>Model 1: One room in each HH in addition to other support services such as guides, porters, cooks etc. No new construction to be supported under the project.</p> <p>Model 2: ECO-CAMPS – Project to fund the setup and group to take responsibilities of operation, maintenance, and other support services. Based on the topography and the group intent additional recreational activities can be introduced such as</p> <ul style="list-style-type: none"> Rock/Mountain Climbing Craft Making Organic Farming Fishing and Angling <p>For above mentioned activities, costs to be born by the project for initial infrastructural setup that would entail tentage, mountaineering equipment, sleeping bags, bedding, camping material etc.</p> <p>Nature of activities not to be enforced on the community and to be decided through a participative process.</p> <p>Both the schemes do not offer any financial incentives; therefore selected groups can be assisted for initial set up and support from HP ECOSOC.</p> <p>HPFD existing facilities such as Forest Rest Houses and Inspection Huts at vantage huts and closer to wilderness can also be engaged in cases where additional accommodation is desired.</p>

Source: JICA Study Team (2017)

Attachment II.3.7.3.1 Indicative TOR for Pilot Projects on Hydroponic Fodder

1. Overview

In the project areas of HPFEM&LIP, livestock rearing has been a common livelihood activity. Apart from the nomadic and semi-nomadic communities, on an average 1-2 cattle/ cows are kept at homestead for domestic consumption as well as for sales of surplus. On the other hand, many of the households are experiencing shortage of green fodder and degradation of grazing areas and thus they are bound to purchase the fodder to supplement the requirement. In some areas, non lactating animals can be set free. Shortage of fodder grasses also means added burden on women in many villages in search of fodder as they are the primary care takers of livestock at household level. On the other hand, fodder harvesting in the grass land where the vegetation is not given sufficient time for rejuvenation would also mean the exploitation of the resources and accelerates the cycle of degradation. Although it is becoming common for households to purchase the dry fodder from outside of the areas, that has financial implication on the household economy. Thus HPFEM&LIP attempts to explore alternatives sources of fodder.

2. Objectives

- To assess the feasibility of hydroponic fodder production in the project areas
- To identify necessary technical improvements to be made to suit different geo-ecological zones of the project areas
- To assess the economic viability of hydroponic fodder
- To assess the changes in the fodder consumption, animal health and production of milk
- To design an extension programmes for hydroponic fodder production

3. Methods

3.1 Identification of the Sites

The contracted agency shall identify 10 pilot wards where the project interventions are implemented. The contracted agency shall discuss with PMU to carry out initial identification of the area. Once the areas are identified, a field team of the resource organization shall visit the identified area along with FCCU and FTU and discuss with the FWC and sub-committee members to see if they would agree to take part in the pilot project. The participating community shall be explained that the community will be interviewed for various data collection while they will be provided with the facilities for free. They should also be informed that the units shall be handed over to the community as a common asset once the pilot project is completed.

3.2. Pilot Project

As for the pilot project, the project shall bear the cost of installing the hydroponic fodder production unit in the pilot site. Necessary training and technical guidance shall be carried out by the resource organization for the community. The process of pilot projects shall be documented

so that the qualitative aspects shall also be captured. The changes in the fodder availability, expenditure, health of livestock, productivity shall be monitored on a regular basis by the resource organization.

4. Outputs

The resource organization shall produce the following outputs.

1. Quarterly reports
2. Feasibility Assessment Report
 - Technical feasibility assessment
 - Economic assessment
 - Animal health and Productivity report
 - Extension strategy and mechanism in case the technical feasibility is found out to be positive.

5. Duration of the Pilot Project

The pilot project is 2 years inclusive of preparation, site identification, field trial and report preparation.

END

Attachment II.3.7.3.2 TOR for Assessment of Potentiality and Production of NTFPs and Development of Plan for Conservation, Resource Development and Sustainable Management of NTFPs Indicative TOR for Pilot Projects on Hydroponic Fodder

1. Introduction

HP Forest Ecosystem Management and Livelihood Improvement Project has set up a State level Him Jadi-Buti Cell in PMU to coordinate all activities relating to conservation, promotion, sustainable management of NTFPs including Medicinal Plants. 11 nos. of Cluster level Him Jadi-Buti Societies/ Producer Groups have been set up to help right holders and growers of NTFPs and medicinal plants in sustainable management of NTFP and market access. The Project interventions on NTFP improvement include plantation in forest areas, plantation and cultivation in non-forest areas, conservation and sustainable harvesting of NTFPs, research & development, enterprise development and market access. The Project will undertake assessment of availability of different NTFPs and Medicinal Plants in 11 clusters with the help of external resource institutions, universities etc.

2. Objectives

The basic objectives of this assessment are to;

- ◆ Identify the potential areas within the cluster for production of NTFPs,
- ◆ Estimate the current level of production of different NTFPs,
- ◆ Assess the status regeneration of different NTFPs,
- ◆ Identify the issues in conservation, regeneration, harvesting and management of NTFPs in the cluster, and
- ◆ Prepare a plan for conservation, resource development and sustainable management of NTFPs in the cluster.

3. Agencies to be engaged and Process of Selection

This activity will be outsourced to the Research Institutions such as HFRI, IHBT, YS Parmar University of Horticulture and Forestry, and other Universities. The PMU will request for submission of proposals from these institutions and a committee will be constituted at the PMU level with representatives from Forest Department (Research Wing etc.), Project Management Consultants and External Experts to review the proposals and commission the task to the eligible institutions. Multiple agencies may be engaged to carry out the task during the second year of the project (During the preparatory phase of the Project).

4. Target Areas and Clusters

The assessment will be carried out in 11 NTFP clusters located in 6 districts i.e. Bilaspur, Lahaul & Spiti, Kinnaur, Kullu, Mandi and Shimla.

5. Approach and Methodology

Empirical investigation will be a basic approach for this assessment. A combination of tools such as mapping, inventorying in sample plots, transects, focus group discussions, consultations with the communities and other stakeholders will be adopted by the outsourced agency for carrying out the assessment. Sampling will be done based on the forest area and occurrence of different species, and in consultation with the local Forest Officers. Efforts will be made for mapping of NTFPs potential areas using GIS and Remote sensing technology.

The plan for Conservation, Resource Development and Sustainable Management of NTFPs and Medicinal Plants will be prepared in consultation with different stakeholders (FD, JFMCs, Right holders and producers, Producers organisation/ societies, local pharmacies/ processing industries etc.). For each cluster, 4-5 NTFPs/ medicinal plants will be prioritized for resource development, value addition and marketing.

6. Duration

The assessment in each cluster will be completed within one month.

7. Human resources required for the task

In each cluster, one Researcher/Scientist, one Field Botanist and 3 Community Facilitators will be engaged to carry out the assessment and consultations with the communities and other stakeholders (Forest Department, Traders, Local Healers, Gram Panchayats etc.).

8. Outputs

- a) A report on current and potential production of different NTFPs and Medicinal Plants and threats in conservation and sustainable management of different NTFPs and Medicinal Plants
- b) A cluster level plan for conservation, resource development and management of NTFPs and Medicinal Plants, which will include strategies, methods and interventions for *in situ* conservation, plantation/ enrichment in the forest areas and JFM area, cultivation of medicinal plants on the non-forest land, sustainable harvesting of different NTFPs and strategies for post-harvest management.

END

Attachment II.3.7.3.3 TOR for Development of Agro-Techniques of Selected NTFPs and Medicinal Plants

1. Introduction

HP Forest Ecosystem Management and Livelihood Improvement Project has set up a State level Him Jadi-Buti Cell in PMU to coordinate all activities relating to conservation, promotion, sustainable management of NTFPs including Medicinal Plants. 16 nos. of Cluster level Him Jadi-Buti Societies/ Producer Groups have been set up to help right holders and growers of NTFPs and medicinal plants in sustainable management of NTFP and market access. The Project interventions on NTFP improvement include plantation in forest areas, plantation and cultivation in non-forest areas, research & development, enterprise development and market access.

Around 80 per cent of NTFPs and Medicinal Plants traded in the market are sourced from forest and the rest is procured from cultivated sources. There are several reasons contributing to poor progress in cultivation of NTFPs and Medicinal Plants and one of the reasons is lack of simplified agro-techniques for cultivation of several NTFPs including Medicinal Plants. For number of high altitude medicinal plants the agro-techniques are yet to be developed. The Project will engage Scientific Research Institutes to develop agro-techniques of about 10 NTFPs/ Medicinal Plants. The agro-techniques will include package of practices for selection of appropriate land for cultivation, nursery establishment, propagation methods and raising of plants, soil, water and nutrient management, weed control, appropriate number of plants to be raised per unit area, harvesting time, harvesting methods, post-harvest management, primary value addition in order to keep the active chemical ingredients, cost of cultivation etc.

2. NTFPs to be selected for Development of Agro-techniques

Agro-techniques in the context of Himachal Pradesh need to be developed for a) Nagchhatri (*Trillium govaniatum*), b) Salampanja (*Dactylorhiza hatageria*), c) Salam Misri (*Polygonatum spp.*), d) Talispatra (*Abies spectabilis*), e) Tilpuspi (*Digitalis lanata*), f) Ratanjot (*Arnebia spp.*), g) Dhoop (*Jurinea macrocephala*) and h) Pasanbhed (*Bergenia ligulata*) etc. Some possibilities may be explored for cultivation of Guchhi (*Morchella esculenta*), Jangli Lahsun, Jangli Piaz (*Urgenia indica*). The list will be finalized in consultation with different research institutions.

3. Agencies to be engaged and Process of Selection

The study will be outsourced to the Research Institutions such as HFRI, IHBT, YS Parmar University of Horticulture and Forestry, and CSKHP Agriculture University. The PMU will request for submission of proposals from these institutions to carry out the assessment. The procurement committee or a special committee constituted at the PMU level with representatives from Forest Department (Research Wing etc.), Project Management Consultants and External Experts will evaluate the proposals and commission the task to the eligible institutions.

4. Approach and Methodology

The basic approach would be to carry out experimental cultivation/ field trials and develop the package of practices for cultivation of specific medicinal plants. The Scientific Research Institutions have to identify suitable sites for experimental cultivation of different NTFPs. Experiments will be carried out for nursery and propagation techniques, undertaking cultivation using multiple propagation materials, monitoring the growth behaviors of the plants, soil, water and nutrient management, cost involved in cultivation and maintenance etc. Data from the cultivation will be collected, recorded and analyzed periodically.

5. Duration

The agro-techniques for different NTFPs and Medicinal Plants will be developed within a period of 4 years.

6. Outputs

Agro-techniques for cultivation of 10 nos. of NTFPs and Medicinal Plants

END

Attachment II.3.7.3.4 TOR for Impact Assessment of 4-year extraction cycle of NTFPs

1. Introduction

HP Forest Ecosystem Management and Livelihood Improvement Project has set up a State level Him Jadi-Buti Cell in PMU to coordinate all activities relating to conservation, promotion, sustainable management of NTFPs including Medicinal Plants. 11 nos. of Cluster level Him Jadi-Buti Societies/ Producer Groups have been set up/ formed to help right holders and growers of NTFPs and medicinal plants in sustainable management of NTFP and market access. The Project interventions on NTFP improvement include plantation in forest areas, plantation and cultivation in non-forest areas, research and development, enterprise development and market access.

NTFPs are collected from the forest areas as per the prescription of working plan and the Forest Department adopts a 4-year extraction cycle for collection of most of the NTFPs and Medicinal Plants. One Range area is open for collection of specific MFPs for one year and the same Range will be again opened for harvesting of NTFPs and Medicinal Plants after 4 years. Despite restrictions on wild collection, there has been a significant decline in production of NTFPs from the forest. The Project with the help of Scientific Research Institutions will undertake a study on impact of 4-year extraction cycle on the regeneration of different NTFPs and Medicinal Plants. The scope of work of the study will also include the extent of implementation of 4-year extraction cycle.

2. Objectives

The objectives of the study are to;

- ◆ Assess the implementation of 4-year extraction cycle and issues thereof,
- ◆ Assess the impact on the regeneration and production of NTFPs in selected ranges,
- ◆ Suggest necessary strategies and interventions for conservation and sustainable management of NTFPs.

3. Agencies to be engaged and Process of Selection

The study will be outsourced to the Research Institutions such as HFRI, IHBT, YS Parmar University of Horticulture and Forestry, and other Universities. The PMU will request for submission of proposals from these institutions to carry out the assessment. The procurement committee or a special committee constituted at the PMU level with representatives from Forest Department (Research Wing etc.), Project Management Consultants and External Experts will evaluate the proposals and commission the task to the eligible institution.

4. Target Areas and Clusters

The study will be carried out in 4 ranges i.e. one Range from each bio-geographic regions.

5. Approach and Methodology

The outsourced agencies have to adopt multiple tools and techniques for conducting the study. Both rapid and intensive assessment will be conducted through mapping, transects, regeneration assessment in sample plots etc. Efforts will also be made to have focus group discussions with the communities, local forest officials on the implementation of 4-year extraction cycle. Consultations will be organised at the Range level with the Forest Officers, Community Leaders, Traders, Processing Industries, Gram Panchayats, Research Institutions and other agencies involved in procurement and trade of NTFPs and Medicinal Plants. Possibility of application of GIS and Remote Sensing in impact assessment will be explored.

6. Duration

The study will be completed within 4 months.

7. Human resources required for the study

Two Senior Scientists, two Field Botanists and 4 Community Facilitators will be engaged for the study.

8. Outputs

- a) A study report on efficiency, effectiveness and impact of 4-year extraction cycle on the conservation and sustainable management of NTFPs including Medicinal Plants.
- b) Recommendations for species wise extraction cycles to be adopted.

END

Attachment II.3.7.3.5 TOR for Follow-up Assessment of Availability of NTFPs in the Target Clusters

1. Introduction

HP Forest Ecosystem Management and Livelihood Improvement Project has set up a State level Him Jadi-Buti Cell in PMU to coordinate all activities relating to conservation, promotion, sustainable management of NTFPs including Medicinal Plants. 11 nos. of Cluster level Him Jadi-Buti Societies/ Producer Groups have been set up/ formed to help right holders and growers of NTFPs and medicinal plants in sustainable management of NTFP and market access. The Project interventions on NTFP improvement include plantation in forest areas, plantation and cultivation in non-forest areas, research & development, enterprise development and market access.

The Project with the help of scientific research institutions has undertaken NTFP assessments in 11 clusters during the preparatory phase of the Project and now it intends to undertake the follow up assessment of availability of different NTFPs and Medicinal Plants in 50% of these clusters with the help of outsourced resource institutions. These Clusters (6 nos.) will be identified based on a) the scale of project interventions in the cluster, b) volume of procurement and trade of NTFPs and Medicinal Plants, and c) active engagement of the Cluster Jadi-Buti Society with JFMCs, SHGs, CIGs etc.

2. Objectives

The basic objectives of this assessment are to;

- ◆ Assess the impact of project interventions on the regeneration, production and sustainable management of NTFPs in the forests areas of the cluster with reference to the baseline assessment carried out during the beginning of the project,
- ◆ Assess the status regeneration of different NTFPs and MAP species,
- ◆ Estimate the current level of production of different NTFPs and the potentiality in near future,
- ◆ Identify the issues in conservation, regeneration, harvesting and management of NTFPs in the cluster, and
- ◆ Review the implementation of conservation and sustainable management plan and suggest required changes in the plan.

3. Agencies to be engaged and Process of Selection

This activity will be outsourced to the Research Institutions such as HFRI, IHBT, YS Parmar University of Horticulture and Forestry, and other Universities. The PMU will request for submission of proposals from these institutions to carry out the assessment. The procurement committee or a special committee constituted at the PMU level with representatives from Forest Department (Research Wing etc.), Project Management Consultants and External Experts will evaluate the proposals and commission the task to the eligible institutions.

4. Target Areas and Clusters

The assessment will be carried out in 6 nos. of NTFP clusters.

5. Approach and Methodology

The basic approach of the assessment is empirical investigation. The outsourced agencies have to adopt a combination of tools such as mapping, inventorying in sample plots, transects, focus group discussions, consultations with the communities and other stakeholders etc. Purposive sampling methods will be adopted for inventorying and impact assessment. Efforts will be made for mapping of NTFPs potential areas using GIS and Remote sensing technology.

6. Duration

The assessment in each cluster will be completed within one month.

7. Human resources required for the task

In each cluster, one Researcher/Scientist, one Field Botanist and 3 Community Facilitators will be engaged to carry out the assessment and consultations with the communities (Right holders) and other stakeholders (Forest Department, Traders, Local Healers, Gram Panchayats etc.).

8. Outputs

- a) A report on regeneration of different NTFPs and MAPs and changes noticed in last 5 years; current and potential production of different NTFPs and Medicinal Plants; and threats in conservation and sustainable management of different NTFPs and Medicinal Plants.
- b) A revised cluster level plan and strategy for conservation, resource development and management of NTFPs and Medicinal Plants.

END

Attachment II.3.7.3.6 TOR for Market Survey

1. Background

HP Forest Ecosystem Management and Livelihood Improvement Project has set up a State level Him Jadi-Buti Cell in PMU to coordinate all activities relating to conservation, promotion, sustainable management of NTFPs including Medicinal Plants. 11 nos. of Cluster level Him Jadi-Buti Societies/ Producer Groups have been set up/ formed to help right holders and growers of NTFPs and medicinal plants in sustainable management of NTFP and market access. The Project interventions on NTFP improvement include plantation in forest areas, plantation and cultivation in non-forest areas, enterprise development and market access. More than 1,000 ha of forest and non-forest areas will be brought under NTFP Improvement - plantation and cultivation, which will contribute significantly to the enhancement of production of NTFPs including high altitude medicinal plants both from the forest as well as from farms. Both PMU/ Jadi-Buti Cell and Cluster Level Societies/ Producer Groups are responsible for providing fair market access to the right holders and growers of NTFPs including medicinal plants. Periodic market survey will keep these societies updated on the dynamics, trends, changes, issues and challenges in the market and accordingly adopt strategies for market access. The project intends to engage external experts – institution/ individual to carry out market survey, which would help the project developing its market access strategies.

2. Objectives

The objectives of the market survey are provided below:

- 1) To understand the value chain of NTFPs including demand and supply, price mechanisms, sourcing, issues and challenges etc.
- 2) To assess the raw materials requirement of selected processing industries including pharmaceuticals, exporters and key traders.
- 3) To understand the quality standards, value addition requirements for supply of different NTFPs including medicinal plants to processing industries, exporters and traders.
- 4) To establish linkages with different processing industries, exporters and traders.
- 5) To help developing market access strategy of the Project/ State Him Jadi-Buti Society.

3. Approach and Methods

The methods of the survey include consultation of primary and secondary sources of data. The Expert will consult with a variety of stakeholders and collect data through interviews using a semi-structured checklist and from physical observation. Especially in the trade of NTFPs including Medicinal Plants there are inadequate recorded data available on the potential, production, value addition and marketing. It is well anticipated that there would be discrepancies in getting recorded information on markets- volumes, prices, qualities etc. Efforts will be made to consult a number of stakeholders to understand the trade practices, challenges, and trends in

production etc. High altitude medicinal plants will be the key products for the market survey. The PMU/ Jadi-Buti Cell will provide the list of NTFPs including medicinal plants to be covered in the market survey.

Sources of Data

- 1) Markets – Amritsar, Delhi, Haridwar/ Ramnagar, Mumbai
- 2) Important Exporters, Traders, Wholesalers/Suppliers
- 3) Processing industries – Dabur, Zandu, Himalaya, Patanjali, Tibetan Astro and Medical Institute, Hamdard, IMPCL, HP Government Ayurvedic Pharmacies
- 4) Market research organisations/ institutes

4. Eligible Institutions/ Experts

Market research institutions with at least 5 years of experience in market survey in NTFPs including medicinal plants at the national level will be eligible for this assignment. Individual Experts with at least 5 years of experience in conducting NTFP market research at the national level will be eligible for this survey.

5. Timeframe and Duration of Market Survey

The market survey will be carried out during peak production season of NTFPs including medicinal plants.

6. Outputs of the Market Survey

A report on the market survey with details of value chain, supply chain, current demands and productions, prices and pricing mechanisms, quality standardization, value addition requirements, strategies for market access

END

Attachment II.3.7.3.7 TOR for Development of Publicity and Communication Materials

1. Background

HP Forest Ecosystem Management and Livelihood Improvement Project has set up a Him Jadi-Buti Cell in PMU to coordinate all activities relating to conservation, promotion, sustainable management of NTFPs including Medicinal Plants. 11 nos. of Cluster level Him Jadi-Buti Societies/ Producer Groups have been set up/ formed to help right holders and growers of NTFPs including medicinal plants in sustainable management of NTFP and market access. The Project interventions on NTFP improvement include widespread campaign on conservation and sustainable management of NTFPs including medicinal plants, plantation in forest areas, plantation and cultivation in non-forest areas, enterprise development and market access. In order to create awareness among the right holders and other stakeholders for conservation, sustainable management, domestication of selected NTFPs including medicinal plants, a massive awareness campaign will be organised in the project area by the PMU in collaboration with the field project implementation units. The Project will also organise orientation and training programmes for the communities including the right holders on sustainable harvesting protocols for collection from the wild, cultivation of selected NTFPs including medicinal plants etc. The Project will prepare communication and campaign materials to be used in the campaign as well as in the orientation and training programmes for the communities. The PMU will engage professional agency to prepare the campaign materials through competitive bidding.

2. Objectives

The objective of this task is to produce a) short animation films/ movies (10 nos. of films each of 3-4 minutes) and b) short video films (10 nos. of films each of 10 minutes duration) on a) conservation and sustainable management of NTFPs including medicinal plants, b) agro-techniques for selected NTFPs including medicinal plants, c) sustainable harvesting protocols for selected NTFPs including medicinal plants, and d) post-harvest management of NTFPs including medicinal plants.

3. Scope of Work

The selected agency/ firm will have inception meetings with the PMU, PMC and Him Jadi-Buti Cell to a) determine the detailed scope of work, b) select NTFPs including medicinal plants for materials development, c) review of existing materials and scripts, d) to finalize the schedule for different activities including shooting in the field, interviews with different resource institutions, communities etc.

Basic materials for script writing will be provided by the PMU and the contracted agency has to prepare a draft script for each film and submit it to the PMU for finalization.

The contracted agency will prepare a rough cut of the films for review and pre-test by the Project and thereafter the agency will submit the draft mixed version for screening and comments by the Project. Then the materials will be finalized.

4. Eligible Agencies/ Firms

The eligible agency/ firm must have at least 10 years of experience in professional films and documentary making. The firm must have done at least 5 nos. of similar projects/ assignments at national/ state level. The firm should be empaneled with the Directorate of Advertising and Visual Publicity (DAVP), the Government of India. The core team – director, script writer, camera person and editor, for the task should be constituted of in-house staff of the firm.

5. Timeframe for Developing the Materials

The task will be completed within a period of 6 months from the date of signing of contract.

6. Outputs of the Task/ Assignment

Subject	Treatment	Length	Main User	Main Target Audience	Preview Media	Language
Agro-techniques for cultivation of NTFPs including medicinal plants (10 NTFPs)	Short films	10 minutes (10 nos. of films each of 10 minutes)	PMU and State Jadi-Buti Cell	Communities in project area including right holders	TV/ PC/ Big screen	Hindi
Conservation and sustainable management of NTFPs including medicinal plants	Short 2D Animation movies	3-4 minutes (5 nos. of movies each of 3-4 minutes)	PMU and State Jadi-Buti Cell	Communities in project area including right holders, and other stakeholders (local traders, Gram Panchayat, project staff)	TV/ PC/ Big screen	Hindi
Agro-techniques for cultivation of NTFPs including medicinal plants	Short 2D Animation movies	3-4 minutes (5 nos. of movies each of 3-4 minutes)	PMU and State Jadi-Buti Cell	Communities in project area including right holders	TV/ PC/ Big screen	Hindi

The outsourced agency/ firm has to be submit 5 sets of DVDs of each film as the final output along with soft and hard copies of the scripts of all the films/ movies.

END

Attachment II.3.7.3.8 Assessment of Non-NTFP Based Livelihood Options

Part I: The Context

Himachal Pradesh despite being highly vulnerable to external shocks and internal constraints resulting from undulating topography and severe climatic conditions has maintained a moderate growth rate of 7.1 percent (Economic Survey, HP 2017) and emerged as a developed state in the country. The economic growth in the State is predominantly governed by agriculture, horticulture and its allied activities.

1. State Economy

Despite a decline in the contribution of agriculture sector (including horticulture and animal husbandry) in GSDP which declined from 21.1 percent in 2000-01 to 9.4 percent in 2015-16, the agriculture sector continues to occupy a significant place in the state economy. Fluctuation in the production of food grains/ fruits directly affects the economy and the share of primary sector which include agriculture, forestry, fishing and mining & quarrying has declined from 25.1 percent in 2000-01 to 14.9 per cent during 2015-16. The Secondary sector, which occupies the second important place in the state economy, has witnessed a significant improvement since 1990-91. Its contribution increased from 26.5 percent in 1990-91 to 41.1 percent in 2015-16, reflecting signs of industrialisation and modernisation in the State. The share of the electricity, gas and water supply sector which is a component of secondary sector has also increased from 4.7 percent during 1990-91 and to 8.0 percent during 2015-16 (Economic Survey, HP 2017). Tertiary sector which is comprised of sectors like trade, transport, communications, banking, real estate & business services, community and personal services has also witnessed a change in its share, which share in GSDP for the year 2015-16 was 44.0 percent (Economic Survey, HP 2017).

2. Status of Education and Unemployment in HP

HP has progressed well in the social development sectors and reached to 82.8 % with male literacy rate 89.55 while that of females is 75.9% (Census of India 2011). In rural areas total literacy rate is 81.9% (male- 81.9% and female-74.6%). In the rural areas of project districts literacy level among females is significantly lower than males. Table 2.1 shows total literacy as well as rural literacy level in the district to be covered under this study.

Table 2.1 Literacy level in the Prioritised Project Districts

Unit: %

#	District	Total			Rural		
		Total	Male	Female	Total	Male	Female
1	Bilaspur	84.6	91.2	78.0	84.1	90.1	77.2
2	Kinnaur	80.0	87.3	71.0	80.0	87.3	71.0
3	Kullu	79.4	87.4	70.9	78.5	87.0	69.5
4	Lahaul & Spiti	76.8	85.7	66.8	76.8	85.7	66.8
5	Mandi	81.5	89.6	73.7	80.8	89.2	72.6
6	Shimla	83.6	89.6	77.1	80.5	87.5	72.7

Source Economics and Statistics Department HP, 2015-16

3. Number of Job Seekers Status of Employment in HP

According to data provided by Employment Department, HP (Statistical abstract 2015-16) the number of educated job seekers (post graduates and graduates) has shown an increasing trend during the past one decade while the same for undergraduate and below was either decreasing or constant trend. Table 3.1 shows the status of job-seekers up to 2015-16 in HP.

Table 3.1 Number of Job Seekers till 2015-16

S.No	Category	Job seekers
1	Post Graduate	69,355
2	Graduates	116,233
3	Matriculates and above	591,197
4	Other literates	50,492
5	Illiterates	771
	Total	828,048

Source: Economics and Statistics, Department HP, 2015-16

Analysis of the job seekers data for year 2015-16 available with the Department of Economics, HP indicated that the demand of jobs was the highest in Mandi and Shimla districts whereas in Lahaul & Spiti and Kinnaur was the least. Table 3.2 provides the status of job seekers in the proposed project districts.

Table 3.2 Status of Job Seekers in the Proposed Project Districts

No	District	No. of job seekers	% of Total job seekers
1	Bilaspur	14,138.00	1.70%
2	Kinnaur	2,190.00	0.26%
3	Kullu	8,435.00	1.02%
4	Lahaul Spiti	907.00	0.11%
5	Mandi	33,971.00	4.10%
6	Shimla	20,561.00	2.48%
Total of Proposed Districts		93,205.00	11.26%
Total of Himachal Pradesh		8,28,048.00	

Source: Economics and Statistics, Department HP, 2015-16

4 Socio-economic Conditions in the Project Districts

1) Bilaspur

Bilaspur is in the west of Himachal Pradesh bordering with Punjab. Its geographical area covers 1,167 km² which provide a home to 382,056 persons. Out of which, male population is 192,764 and that of female is reported to be 189,192 (Census 2011). Since it is located in the Satluj catchment, the population density is high showing 327 persons/ km².

Agriculture and service sector are the main hold in the district's economy. Wheat, maize, rice, sugarcane, mustard, gram and ginger are grown in Bilaspur with the overall cropped area of 56,901 ha which accounts for nearly 50% of the total of agriculture land. Among the horticulture, Mango stands out amongst other fruits, which is planted on the areas of 5,150 ha accounting for 79.9% of the total area coming under fruits production in the district. In Bilaspur, the number of buffalo, poultry, and goats are high and reported to be 100,586 heads, 96,017birds, and 59,244

animals respectively. The substantial area of land comes under permanent pasture and other grazing area taking nearly 40% or 39,583 ha of the total agriculture land¹.

Although having better connection to the market areas and flat terrain, small and medium industries are yet to come up². In Bilaspur, woolen, silk & artificial thread based industries, ready-made garments & embroidery, wood & wooden based furniture, metal and leather based industries are currently found. As for the service sector, entertainment, cable/ DTH services, printing, and many others are included. The report of MSMEDI in Solan³ suggested that more investments are needed in the handcraft sectors and for the repair services for electronic appliances, agriculture implements, vehicles and etc. As of now, the district does not have any clusters based on the above mentioned goods and services. The issues are 1) lack of skilled and unskilled labour, 2) lack of awareness among the financial institutions on small and micro enterprises.

2) Chamba⁴

In the far north western side of Himachal Pradesh, Chamba district is situated. Steep terrain gives the character to the district with an average elevation of 1,006m. During the winter, higher elevation areas in the district are covered with snow. The total population of the district is 20,312 of which 52% are male and 48% are female. The district is also known for the home of Gujjars and Gaddi who are the pastoralists. The former is mostly nomadic and the latter is recognized as semi-nomadic. The total geographical area is 6,528 km². Out of the total agriculture land (692,419 ha), 67,775 ha is the total cropped area whereas the permanent pasture accounts for 348,869ha which is nearly 50% of the total land under agriculture land use. The population of sheep, goats, poultry and cows are high. DSMEDI in Solan identifies repair services of various equipments and appliances including computers and mobiles, along with the woolen, silk & artificial thread based industries, garment/ embroidery and food and food products can be invested in the district.

3) Kinnaur:

Majority of the population of Kinnaur's is a tribal district and its economy is based primarily on agriculture and allied activities. It has ideal natural conditions to grow multiple crops. It has approximately 1.50 percent of its total geographical area under cultivation. As per the available data from planning department, HP, Kinnaur contributes in GDP of primary sector about 30%. (http://himachal.ninc.in/economics/reports/sin_glance.pdf) The main agriculture crops include Maize, Paddy, Wheat, Barley, Peas, Rajmah and Potato. Rajmah is cultivated in approximately 1,000 ha area which is approximately 10.1 percent total agriculture area. Apples, chilgoza, almonds, opla, apricot, grapes and other dry fruits grown here are famous for their quality. Apple

¹ Statistical Abstract, Himachal Pradesh 2015-2016.

² The data in this paragraph derives from "Brief Industrial Profile of Bilaspur District, 2016-17. MSMEDI, Solan".

³ *ibid*

⁴ This section is based on "Brief Industrial Profile of Chamba District, 2016-17. MSMEDI, Solan".

cultivation is undertaken approximately 10,000 ha (Kinnaur district statistical handbook 2010-11).

4) Kullu:

As per Census 2011, Kullu has a population of around 437,000 persons. The primary sector contributes to around 45% towards district GDP. The agriculture crops grown in the district are maize, wheat, paddy, and lentils. Kullu is one of the leading fruit producer districts of HP. Total cultivated area in Kullu is around 64,256 ha and, out of which, 37.6% is used for wheat cultivation. Maize is another important crop of the district which covered 26% of cultivated area. Apple is grown in approximately 23,870 ha of land and annually produces 160,000 Mt. Kullu district has a large number of Hotels and Guest houses, which nearly employ 2,066 people. Existing enterprises are woolen, silk & artificial thread based clothes, wood/wooden based furniture, agro-based units, readymade garments & embroidery, repairing and servicing, metal based steel fabrications, paper & paper products, and cotton textile. Food processing, textile, electrical and electronic good servicing, and wooden products are some of the activities having potential to be promoted in the district.

5) Lahaul & Spiti:

Lahaul & Spiti is generally called as cold desert area which remains snowbound for almost six months during the year and totally cut from the rest of state. The economy of the district is agriculture based. Agriculture and allied sectors contribute about 21% of the district economy. About 80% of the population is engaged in agriculture and allied activities. Secondary sector constitutes to over 46% of the district economy. Most of the industrial units are handloom based such as shawls, caps, patti and woolen garments woven on handlooms.

6) Mandi:

As per the Census 2011, Mandi district has a population of around 999,000 persons. Agriculture and animal husbandry are the main stay of the district's economy. The total cultivated area of the district was 157,684 ha. Its climatic condition is favorable for high value medicinal and aromatic plants, orchid, flowers like roses and chrysanthemum. Its climate is also favorable for Sericulture. The main agriculture crops grown in the district are wheat, maize, barley, paddy, lentils, potato, onion, ginger and chilly. Fruits like apple, nuts, dry fruits, citrus and sub-tropical fruits like mango and litchi are also grown. Primary sector contributes 25% in the district economy, while secondary and tertiary sectors contribute 30% and 45% respectively.

7) Shimla:

According to the 2011 census Shimla district has a population of 813,384 persons with males 424,486 and females 388,898. The rural population is 611,884 and urban population is 201,500. The district has a population density of 159 inhabitants per square kilometer. The economy of the district is highly dependent upon tourism sector and the small scale industries like jute processing,

food processing and wood industry. Primary sector contributes 36%, secondary sector contributed to over 23% and tertiary sector contributes approximately 41% of the district's economy. Main agriculture crops are maize, wheat, barley, paddy, lentils, potato, and chilly. Fruits such as apples, stone fruits, dry fruits, citrus and sub-tropical fruits are grown in plenty and the total cultivation area in Shimla is around 89,454 ha.

5. Livelihood Options Identified by the Government Department/ Agencies

The focus of forestry and watershed development programs, which were implemented in lower and middle altitudes, were intended to improve landscape practices like agriculture, horticulture, animal husbandry (primary sector) and in certain clusters on skill-based activities whereas the situation in high altitude regions are significantly different from the lower and mid altitude regions. As for the high altitude areas, enterprises based on traditional skills, services, primary level processing of agriculture and horticulture products, dairying and animal husbandry based activities like milk collection, wool and meat production have been recommended by different industrial and rural enterprise promotion departments. Khadi and Handloom & Handicraft development agencies have emphasised over strengthening village based industries, weaving and artisan clusters in such areas. Table 5.1 provides a summary of livelihood activities proposed by different government agencies.

Table 5.1 Livelihood activities proposed by government agencies

	Board category	Sub-category	Specific activities
1	Primary sector	Farm and off farm based	Fruit and vegetable production, Vermin-composting Dairying, wool and meat production
2	Secondary	Agro-Based industries Traditional Skill based Engineering fabrication Repair	Fruit and vegetable processing , Shawl weaving Handicrafts, Knitting, Stitching, Iron works, Repair and service of agriculture tools, automobiles
3	Tertiary	Services hospitality Financial services	Hotel & restaurants Home stays, Eco-tourist Guide

Source: Industrial Policy, 2017. GoHP

Industrial Policy 2017 of Himachal Pradesh (<http://emerginghimachal.hp.gov.in/>) also place an emphasis on promotion of industrial units which have high economic potential and deemed to be clean and non-polluting and identified fruit processing, sericulture, NTFP based industries, wool and wool products as thrust areas. State government has resolved to provide incentives for establishment of industrial enterprises in B and C categories of areas.

The state government has identified enterprises like horticulture produce based enterprise, fruits/vegetable/herbs/honey/spices based wineries, production of ciders/ate/liquors, sericulture/handlooms/khadi industries related manufacturing industrial activities, medicinal herbs and aromatic herbs processing, horticulture, maize based industries, herbal based and agro based industries, wool and wool products, woven fabrics, eco-tourism-hotels, handicrafts, NTFP based industries (Directorate of Industries, 2017).

Micro, Small, Medium Enterprise Development Institute, Solan, a government of India organisation, has identified sectors which have good presence and provide employment opportunity to local community. It too has selected farm based, off-farm and service sector enterprises as viable enterprises. It also identified few clusters in each district for example iron fabrication in Rampur, Shimla, shawl weaving in Kullu, wooden furniture in Mandi district. A district-wise list of activities and person engaged in such activities is provided below.

Table 5.2 District wise Existing Enterprises and Number of Persons Engaged

	Enterprises	Districts									
		Bilaspur		Kullu		Kinnaur		Mandi		Lahaul and Spiti	
		No. of units	Person engaged	No. of units	Person engaged	No. of units	Person engaged	No. of units	Person engaged	No. of units	Person engaged
1	Agro-based enterprises	166	1,600	301	883	73	147	1,009	4,036	42	85
2	Woolen, Silk and polyester yarn based clothes	143	143	727	6,579	169	264	437	1,908	230	375
3	Readymade garments and embroidery	33	158	102	735	1	3	37	148	1	5
4	Wood/Wooden Furniture	267	671	257	807	46	79	399	1,596	5	12
5	Leather based	98	152	23	58	-	-	11	44	-	-
6	Metal/steel fabrication	108	265	135	639	20	64		368	15	30
7	Repair and service Units	191	420	161	648	12	42		552	14	50

Source: MSME DI

A district-wise general list of livelihood activities which have been identified by Micro and Small Enterprise Development Institution (MSME-DI) are provided in the Table 5.3.

Table 5.3 General List of Livelihood Activities in Project District

No	Potential Activities	Districts					
		Bilaspur	Kullu	Kinnaur	Mandi	Lahaul & Spiti	Shimla
1	Handloom (traditional shawls, patti, caps)	X	√	√	√	√	√
2	Weaving & knitting woolen garment	√	√	√	√	X	√
3	Readymade garments, school uniform, embroidery	√	√	X	√	X	√
4	Milk production, milk product diversification	√	√	√	√	X	√
5	Off-seasonal Mushroom cultivation	X	√	√	√	X	√
6	Vegetable and fruit processing	X	√	X	√	X	√
7	Beekeeping and honey processing	√	√	√	√	X	√
8	Wool and meat production	√	√	√	√	√	√
9	Poultry	√	√	√	√	X	√
10	Vermi composting & bio-composting	√	√	X	√	X	√
11	Wooden furniture	√	√	√	√	X	√
12	Steel fabrication	√	√	√	√	X	√
13	Iron-grill and shutter making	√	√	X	√	X	√
14	Electrical and electronic appliances repair	√	√	√	√	X	√
15	Agriculture implement repair	√	√	√	√	√	√
16	Eco-tourism & hospitality	√	√	√	X	√	√
17	Computer typing, card designing, screen printing	√	√	√	√	X	√
18	Bio-briquetting from pine needle & agriculture waste	√	X	X	√	X	√

Source: Compiled by JICA Study Team 2017 based on the information of MSME-DI

Part II: Indicative Livelihood Activities for HPFEM&LIP

1. Criteria for Identification of the Livelihood Options for HPFEM&LIP

To select district-wise livelihood activities, criteria like availability of raw material, traditional skills, manpower, on-going cluster development program, climatic condition of the production place (number of snowbound days, number of days roads are open for vehicular movement and trade), markets (size of local and outside), presence of business development service providers were taken into consideration. Table 1.1 provides a list of the criteria identified for selection of livelihood activities.

Table 1.1 Criteria for selection of livelihood activities

S.No	Criteria	Remarks
1	Availability of raw-material	Very important for enterprises based on farm production and for livestock based activities which requires fodder
2	Availability of traditional skills among entrepreneurs	Important for activities like traditional shawl weaving
3	Availability of man-power	Skilled and un-skilled man-power, availability of time
4	Suitability to climatic condition	Favorable temperature, humidity for the particular enterprise to be promoted.
5	Identified for cluster development program/possibilities of cluster	Government has identified various clusters and allocated budget.
6	Presence of market	Finished product could be sold within working cycle.
7	Regional belief about particular activity/product	Certain activity may not be fit into religious belief like slaughtering of cattle, and piggery.
8	Suitable for the women	Enterprise should be easily operated by women.
9	Environmentally sound	There should not be negative impact on forest water, prohibited by forest and government.

Source: JICA Study Team, 2017

In the high-altitude regions favorable condition for outdoor work is only in summer season (May-October). During this limited period, villagers have to harvest crops, plough their agriculture fields and sow new crops and at the same time various government department carries out infrastructure development activities. To supplement the household income, many households would have some male members either engaged in wage work or working outside of the village for employment.

Women in the project districts have to devote almost 12-16 hours daily in domestic activities like cooking meals, cleaning home, fetching water, arranging fodder, fuel wood, attending cattle and doing agriculture works. Despite doing extremely hard labor on daily basis, women's economic conditions are weak in the project villages. Engagement of women in enterprises other than farm-based is very low due to lack of time, harsh climatic condition, non-availability of raw material, hurdles in transportation of finished goods to markets, low influx of tourist and low local consumption.

However, on the basis of lessons learnt in the past forestry development and livelihood programs and focus group discussion with women, a tentative list of preferred enterprises has been developed. Some of the activities are based on the traditional skills like shawl weaving, and hand knitting could be done both in summer as well as winter, while activities like dairying, poultry,

mushroom cultivation, wild honey collection, vegetable cultivation, vermicomposting could be undertaken during summer time. Table 1.2 provides the list of suggested livelihood activities for women that can be taken up in different seasons (summer and winter) especially in the higher altitude.

Table 1.2 Livelihood Activities Suitable for Women in Different Season

#	Potential Activities	Suitability for summer	Suitability in winter
1	Handloom (traditional shawls, patti, caps)	√	√
2	Weaving & knitting woolen garment	√	√
3	Dairying/ Milk production	√	X
4	Backyard Poultry	√	√
5	Mushroom cultivation	√	X
6	Vegetable and fruit processing	√	X
7	Wild honey processing	√	X
8	Vermicomposting & bio-composting	√	X
9	Eco-tourism & hospitality	√	X
10	Soft toys making (memento for tourists)	√	√

Source: JICA Study Team, 2017

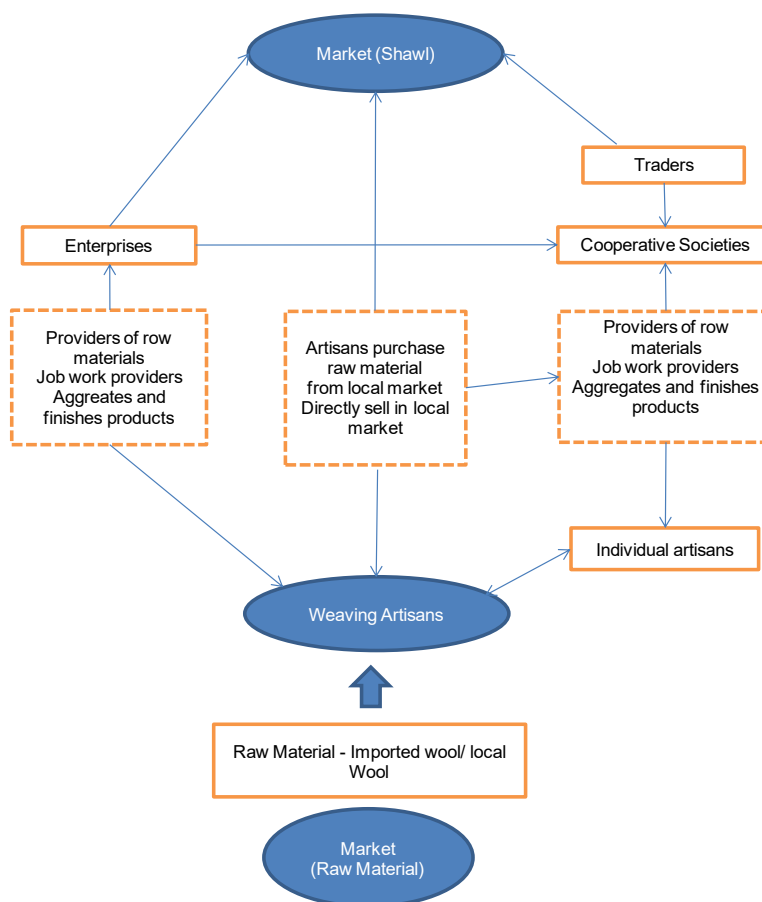
2. Handloom, Handicraft based Enterprises

In Himachal Pradesh, there are 13,458 weavers and weaving workers and 5,578 handlooms.

Agencies supporting handloom, handicraft sector in the state are Khadi Village Industries Board, HP State Handloom and Handicraft Development Corporation. Handloom and Handicraft based enterprises covers traditional shawl weaving, woolen garment knitting, wooden and metal artifacts.

2.1 Value Chain of Traditional Shawls

Himachali Shawls (Kullu and Kinnaur) are famous for its ethnic pattern, design and craftsmanship. Weaving of shawls is tedious process and artisan has to source quality raw material from different sources, draw pattern and



Source: JICA Study Team (2017)

Figure 2.1 Production and Sale Process of Traditional Shawl

spends several days weaving on handlooms (communally called as Khadi). In a competitive market environment, its trading has become very complex process.

Two types of producers can be seen: One is the 1) amateur and 2) professional weavers. An amateur artisan uses his own design and pattern for weaving shawls and contact buyer or her/himself sell in the market. Professional weavers work on the basis of order received by their affiliated institutions/societies wherein design and pattern is provided by the marketing agency. In case of amateur weaver, he/she has to procure raw material (yarn, fiber thread etc.) directly from the market, while professional weavers get everything from their affiliated agency. Amateur weavers' objective for doing weaving is to utilise spare time left after doing other activities and produce material for local consumption and earn additional income. In this case, the artisan doesn't give more emphasis on finishing and presentation aspects of the product and therefore they find it very difficult to find a buyer from outside the regions. Professional weavers get all type of support either from their federation or marketing agency. Figure 2.1 illustrates process of interaction between the market, artisans and institutions of traditional shawl.

1) Identifying Improvement in Value Chain of Shawl: SWOT

SWOT analysis helps in understanding controllable factors (internal strengths and weaknesses of the sub-sector) and non-controllable factors (opportunities and threats to the subsector) that the interventions should address for the entire value chain.

Table2.1 SWOT Analysis of Shawl Weaving (Handloom)

Element	Results of Analysis
Strengths	Shawl and woolen items have readily available markets in Northern plains and cold countries. Patented traditional and ethnic design and pattern Availability of skills, master weavers Climate of state is suitable for production. Wide network of sale outlets all over the state and important cities in country Availability business service providers like banks, designing institutes, machinery suppliers, government support and policy environment
Weakness	Market is skewed in favor of middlemen, bulk buyers, exporters Non-availability of high quality raw material, depend upon imported wool High transport costs of raw material and finished good No processing facilities available in new clusters Outdated production technologies Lack of market information system and customer preference Weak artisan institutions(dependent upon external funding) Lack of consumer awareness about hand made products among consumers
Opportunities	High demand for quality shawls in Northern India and cold countries Tourist's inflow from all over the world Handloom products environmentally friendly Organic artifacts have huge export potential. Scope for new design, pattern and product diversification Scope for online marketing to reduce marketing overhead charges Bring youths in the trade Global certification to control infringement of design and pattern
Threats	Competition from products of power looms based in Punjab and Haryana Competition from spurious shawls being sold in name of traditional shawls Fluctuation in raw supply from outside country Low-margin dissuades youths from trade

Source: JICA Study Team (2017)

To improve value chain of shawl weaving enterprise, there is a need to further improve marketing of products by shortening the value chain by way of forming cooperatives and collectively purchase raw material to reduce cost of production. Institutional arrangement could be done by promoting agencies through enhancing incentive mechanism like group pension, insurance, buy-back guarantee scheme, etc. Issue of infringement of design should be tackled by introducing bar-coding or GR marking of the products. Each and every artisan should be registered and proper identity cards could be given and retail outlets must keep records of artisans so that buyers can directly talk to artisans (societies) in case there is doubt about the product. A customer feedback system could be introduced at retail outlets to know their preference on various aspects, for example many young customers require light-weight shawls while artisans produces heavy shawls. Feedback will improve in design and quality adjustment in response to the customers' preferences, which in other words mean the market demand.

2) Establishment of Shawl Weaving Enterprise and Financing

Shawl weaving enterprise setting requires to follow some steps, which are as below;

- i) Identification of cluster- Ideally a micro cluster has 30-50 artisans.
- ii) Diagnostic study: To understand situation of the artisans, design and production system.
- iii) Institutional arrangement: Formation of artisan cooperative and linkages with existing federation.
- iv) Capacity building: Technical training on production, designing, finishing, and packaging
- v) Market exposure: Artisans are required to know market of their products

Once institutional arrangement and technical trainings are completed, financial proposals can be prepared so that the banks or any other financial institutions can be approached. For setting of handloom enterprise in cooperative model with 20 artisans, a financial investment of approximately INR 425,000 is required as fixed cost. Working capital of INR 90,000 (per quarter) is required. If all the artisan work for 250 days in a year and produce 700 shawls on value INR 800 per unit and other 500 pieces of other accessories of INR 200 per unit, it is expected that the cooperative would earn INR 180,000 in a year after paying loan installment and interest on capital investment. The indicative cost estimate of the shawl and woolen accessories enterprise (cooperative model) is given in the table below.

Table 2.2 Indicative Financial Analysis of Woolen Shawl and Accessories Enterprise for one Household

#	Particulars	Qty	Rate/Unit	Total Cost (INR)
A	Plant and Machinery (Fixed cost)			
1	Handloom for shawl making units (khadi)	1	11,000	11,000
2	Charkha	1	1,500	1,500
2	Tana Machine	1	25,000	25,000
3	Small Khadi	1	2,500	2,500
4	Accessories sets	1	1,000	1,000
	Total fixed cost			41,000
B	Operational cost			

#	Particulars	Qty	Rate/Unit	Total Cost (INR)
	Raw material (One shawl INR 520, 2 shawls per week)	100	520	52,000
	Other expenses (market and transport 5% of cost of the shawl)	100	50	5,000
	Interest on working capital and fixed capita (6% subsidized rate, total loan INR 50,000 payable in 36 instalments)			2,200
	Total operational cost (B)			59,200
C	Production/sales			
	Shawls (cost price+ 30% margin)	100	1,300	130,000
	Total sales ©			130,000
	Income before payment of loan instalment and interest of working capital (C-B)			70,800
	Loan instalment of fixed investment (INR 4,000 @ 6% p.a for 36 months)			3,500
D	Net income after payment of loan instalment			67,300

Source: JICA Study Team (2017)

An entrepreneur is assumed to be able to earn approximately INR 67,000 per annum from shawl weaving enterprises. Operational cost can be reduced by 10-15%, if entrepreneur work in a cooperative model.

2.3 Potential for Cluster Development

1) Approach

To develop a cluster, the model promoted under the Scheme for Fund for Regeneration of Traditional Industries (SFURTI) of KVIC or cluster development approach of Development Commissioner Handloom can be adopted. These models suggest three types of interventions namely 'soft interventions', 'hard interventions' and 'thematic interventions'.

1) Soft interventions include:

- i) General awareness, counseling, motivation and trust building,
- ii) Skill development and capacity building,
- iii) Institution development,
- iv) Exposure visits,
- v) Market promotion initiatives,
- vi) Design and product development,
- vii) Participation in seminars, workshops and training programmes on technology up-gradation, etc.

2) Hard Interventions includes infrastructure for production, storage, marketing, and training like:

- i) Common facility centers (CFCs),
- ii) Raw material banks (RMBs)/ Yarn bank,
- iii) Up-gradation of production infrastructure,
- iv) Tools and technological up-gradation such as charkha up-gradation, tool-kit distribution, etc.

- v) Warehousing facility,
- vi) Training center,
- vii) Value addition and processing center.

3) Thematic interventions are mostly focused on market intervention, research and institutional linkages:

- i) Brand building and promotion campaign,
- ii) New media marketing,
- iii) e-Commerce initiatives,
- iv) Innovation,
- v) Research & development initiatives,
- vi) Developing institutional linkages with the existing & proposed clusters.

2) Funds

Handloom cluster development is relatively long process. It takes around four years to set a cluster under a normal circumstance. Since community members involved in weaving activities are poor & marginal and reside in scattered manner, cost of bringing the weavers under one umbrella and enhance their capacity requires time and funds.

The central and state government has set a four year tenure for establishment of a handloom cluster. A budget of INR 11.315 million is required for cluster development program in which central government can contribute INR 6.05 million would be mobilized from state government schemes and INR 180,000 from JICA project. The detailed break-up of development cost is provided Table 2.3.

Table 2.3 Indicative Budget Break Ups for Handloom Cluster Development Scheme (200 – 500 weavers)

S.No	Sub-components handloom cluster development	Budget	Funding sources (Amount in INR.)			
			GoI	GoHP	JICA	Weaver
1	Baseline survey- diagnostic study, formation of SHG, CIG, consortium ad awareness programs	200,000	200,000	0	0	0
2	Technology up-gradation for on-loom activities (* Please see Table 2.3.(a) for break ups)	4,800,000	4,320,000	240,000	240,000	0
3	Product development/diversification	200,000	200,000	0	0	0
4	Engagement of designer-cum-marketing executive	30,000	30,000	0	0	0
5	Purchase of Computer Aided Textile Design System (CATD) including purchase of card punching machine	500,000	250,000	150,000	100,000	0
6	Corpus fund for setting up Yarn Depot	300,000	300,000	0	0	0
7	Market Development-holding exhibitions, buyer-seller-meets, publicity	200,000	40,000	40,000	120,000	0
8	Skill up-gradation (3000 per weaver)	1,500,000	225,000	225,000	1,050,000	0
9	Setting up common facility center/dye center	500,000	400,000	0	100,000	0
10	Credit support	200,000	40,000	0	160,000	0
11	Construction of work shed (20 Sq. mt)	35,000	26,250	0	5,250	3,500
12	Documentation of cluster activities	50,000	25,000	0	25,000	0

S.No	Sub-components handloom cluster development	Budget	Funding sources (Amount in INR.)			
			GoI	GoHP	JICA	Weaver
13	Human resource expenses for 4 years@ INR100,000/pm	4,800,000	960,000	0	3,840,000	0
14	Coordination cost(transport, communication)	400,000	0	0	400,000	0
	Total	13,315,000	6,056,250	655,000	1,800,250	3,500

Source: JICA Study Team (2017)

*Table 2.3. (a) shows a list of items required for technology up-gradation in handloom sub-sector.

Table 2.3 (a) List of Items Required for Technology Up-gradation in Handloom sub-sector

S.No	Items	Price(INR)
1	Pneumatic jacquard system for a set of 4 handloom	40,000
2	Motorized jacquard on the existing handloom	12,000
3	Take-up and let off motions on the existing handloom	4,000
4	Multiple box motion	3,000
5	Multiple buti weaving sley	7,000
6	Twin cloth weaving mechanism	4,000
7	Jacquard	12,000
8	Dobby	5,000
9	Healds, reeds, bobbins, shuttles, harness	4,000
10	Wrap beam and fabric beam	5,000
11	Purchase of new handloom	20,000
12	Normal warping machine	20,000
13	Motorized warping machine	35,000

Source: Report of Development commissioner, Handloom

3) Institutional Arrangement required for Development of Shawl Weaving Clusters

Weavers are generally poorly organized and majority of them have tendency to work independently which increases cost of production, technology access/up-gradation and marketing. Financial institutions also see high risk in lending an individual and hence charge higher rate of interest on loan. These factors ultimately reduce their profit margin in a long run and they become vulnerable to exploitation by the middlemen. Hence, to develop a viable traditional skill based enterprise, in which individual unit produces, requires regular financial and handholding support from external development agencies/government agencies, and it would help to organise them into groups in the form of common interest group, self- help group or cooperatives.

For JICA project, weavers could be organised into cooperatives (because in later stage it could function as an independent body and could be linked with the existing weaver's apex body). Cooperatives will directly deal with its members in skill development, technology up-gradation, raw material procurement, finishing of products and marketing. Cooperative functionaries will take lead in dealing with business providers which will save valuable time for the primary producers. Direct marketing by cooperative (either own outlets or through apex body outlets) will also help in reducing length of the value chain by eliminating middlemen and commission

agents. Sales realisation would be smooth and there would not be holding up of working capital for the primary producer. Cooperative will also establish feedback mechanism to know customer preference (which is difficult in case of individual production unit).

4) Supporting Institutions

The agencies and types of assistances given for handloom and khadi sub sector cluster development are summarized in the table below.

Table 2.4 Agencies Provide Support for Handloom and Khadi Sub-sector

#	Name of Agency	Affiliation	Nature of support	
			Non-financial	Financial
1	Khadi Village Industries Commission	Central Govt.	Yes	Yes
2	Development commissioner Handloom	Central Govt.	Yes	Yes
3	National Handloom Development Corporation	Central Govt.	Yes	Yes
4	National Institute of Design	Autonomous	Yes	No
5	Khadi Village Industries Board	State Govt.	Yes	Yes
6	HP Handloom & Handicraft Development corporation	State Govt.	Yes	Yes
7	HP Kaushal Vikas Nigam Ltd	State Govt.	Yes	No
8	NABARD	Central Govt.	Yes	Yes

Source: JICA Study Team, 2017

3. Knitting of Woolen Garments Enterprise

Being a hilly state, climate remains cold throughout the year in Himachal Pradesh. People wear winter clothes (woolen garments, jackets, Sleeveless jackets) throughout the year. There is consistent demand for woolen caps and socks for all age groups of people. Earlier woolen garments were hand woven but now trend is changing and people prefer machine knitted garments also. Individual and group enterprises could be promoted in the villages.

Woolen knitting is one of the options that can be adopted by the women. This activity can be started by them in their leisure time and there is a large scope for selling products in nearby local market. The cluster approach would help them to organise its trade in a better way. For woolen garment enterprise fixed cost requirement for a 10 member SHG is INR. 62,500/- and recurring cost is first year of operation would be INR. 262,000/-. The group will knit five items namely socks, caps, mufflers, kid's suits, and sweater and sell in the local and weekly markets and other regional markets. After one year of successful operation, each group member can earn approximately INR 4,000 per month. Table 3.1 provides detailed financial analysis of woolen garment production unit in SHG mode.

Table 3.1 Indicative Financial Analysis of Woollen Garment for 10 Members SHG

Sl.No	Particulars	Unit	Qty	Rate	Amount(INR)
A	Fixed cost				
1	Hand knitting machine	Nos	10	5500	55,000
2	Woollen binder	Nos	10	750	7,500
	Total fixed cost				62,500
B	Recurring cost per annum				
1	Wool (60 kg/ member)	Kg	600	250	150,000
2	Accessories (button, zip, well-groves, elastic) @ 10% of the value garment	INR			75,000
3	Market expenses (5% of sale value)	INR			37,500
4	Interest on working capital	INR			18,000
5	Annual Loan instalment (36 instalments)	INR			6,250
	Total recurring cost				262,500
C	Sales				
1	Socks	No	1,000	50	50,000
2	Kids garment	No	1,000	200	200,000
3	Mufflers	No	1,000	100	100,000
4	Caps	No	1,000	100	100,000
5	Sweater	No	1,000	300	300,000
	Total sales				750,000
D	Gross income	INR			487,500
E	Annual Interest on fixed cost @8% per annum	INR			5,000
F	Principal in fixed cost	INR			20,833
G	Net income after paying interest on fixed cost (in 36 instalments @8%/year)	INR			461,667
H	Income per member	INR			46,167
I	Income per month/member	INR			3,847

Source: JICA Study Team, 2017

4. Food Processing sector: Fruits & Vegetables Processing

HP has made significant progress in the development of Horticulture sub-sector. The topographical variations and altitudinal differences coupled with fertile, deep and well drained soils favour the cultivation of temperate to sub-tropical fruits. During the year 2016-17 up to December 2016, approximately 510,000 tonnes of fruits were produced in the state and it is envisaged to bring 3,000 hectares of additional area under fruit plantation against which 2,817 hectares of area has already been brought under plantation and 753,000 fruit plants of different species were distributed by December 2016.

HP has emerged as major producing state of apple, plum, peach, pear in the country. It has been observed that cereal based cultivation system is gradually changing into cash crop cultivation system. Table 4.1 provides production figures of fruits during 2015-16 in HP.

Table 4.1 Production of Fruits in 2015-15 in HP

S.no	Fruit variety	Area under cultivation(Ha)	Production in MT
1	Apple	110,679	777,126
2	Plum	8,601	20,523
3	Peach	5,076	8,045
4	Apricot	3,661	5,172
5	Pear	6,977	32039
6	Cherry	449	617
7	Pomegranate	2,482	1,986
8	Orange	8,724	13,028
9	Malta	1,694	2,219
10	Kagzi Lime	11,185	7,410
11	Galgal	2,407	3,828
12	Mango	41,523	37,628
13	Litchi	5,409	6,071
14	Guava	2,266	2,610
15	Aonla	2,524	2,155

Source: <http://hpagrisnet.gov.in/hpagris/Horticulture/Default.aspx?SiteID=5&PageID=1034> accessed on 21 Sep 2017

Growing of off-season vegetables has also picked up in the state. During the year 2015-16, 1.61 million of vegetables were produced as against 1.58 million tonnes in 2014-15 recorded a growth rate of 2.1 percent. It is anticipated that the production of off season vegetables will be of the order of 1.50 million tonnes in 2016-17. Increase in production fruits and vegetables have enhanced the potential of fruits and vegetable processing in state.

Market arrival data reveals that there is gap of 15-25% in the production and arrival of produce; it may be attributed to local consumption or post-harvest wastage. However due to lack of storage facilities and remoteness of the production sites, farmers have to sell their produces at the lower margin. Higher transportation charges too demotivate farmers to send their produce to interstate markets.

To overcome wastage of produces, value addition at production site could be viable option for producers. Union and state governments are intensifying their efforts to double the production of horticulture crops through technological interventions in next few years and have launched many programs for the benefits of farmers, which can be seen as an opportunity.

4.1 Advantage of Fruits and Vegetables based Enterprises

There are a number of advantages of processing for different stakeholders. Primary producer could reduce wastage of his/her product and add value through processing. It also enhances shelf life of the produce and hence better bargaining capacity. Producer also gets safety net in case of

bumper production and falling of prices in primary market. For the retailers, processed product is a fast moving goods which has higher margin than raw products. Consumers have more choices in the product line and could also find the off season produces at various timing of the year. In the Table 4.2, a summary of advantages of processing has been provided.

Table 4.2 Advantages of Processing

Reasons for processing	Technology adopted	Beneficiaries
To increase self-life of the food products	Pasteurization of milk or juice, pickling or salting	Consumers, distributors, retailers
To eradicate, pathogens and prepare the food for consumption (food safety)	Washing, cleaning, pasteurizing, salting, freezing and chilling	Consumers - at lower risk for food borne illness
To change flavor, texture, aroma or form of the food products.	Milling of grains, adding food flavors and colors and enzymes. Increase variety of food available	Consumers – more choice Manufactures- increased profit potential
Reduce preparation time and make food portable	Burgers, fries etc. Convenience foods: Bottled drinks, meat, jerky, cakes, cookies breakfast cereal bars, frozen pizzas, baby food	Consumers – more choice Manufactures- increased profit potential
To restore or raise the nutrition levels	Fortifying milk with vitamin D, salt with iodine and grains with vitamin B, iron and folic acid	Consumers- access to healthier products Manufactures - gain USP(unique selling proposition) for products

Source: JICA Study Team 2017

4.2 District-wise Potential of Processing Fruit and Vegetable

In the proposed project districts, there is a potential for chutney production, fruit pulping, squash, jam, pickle and juice. District wise status of fruit and vegetable processing is provided in Table 4.3.

Table 4.3 Proposed District-wise Production of Processed Products

S.No	Product	Potential Districts (Production in Kgs)					
		Bilaspur	Kullu	Kinnaur	Mandi	Lahaul & Spiti	Shimla
1	Chutney	6,667	19,500	NA *	NA	NA	10
2	Fruit pulp	8,520	NA	NA	329,933	3,000	20,000
3	Fruit squash	NA	50,900	NA	800	NA	NA
4	Jam	10,667	102,400	1,868	1,380	NA	20,020
5	Jelly	NA	NA	NA	NA	NA	NA
6	Juice	15,100	85,400	3,737	340,754	NA	101,800
7	Pickle	25,667	95,400	3,737	104,620	NA	30,050

Source: Diagnostic report-Developing food processing industries in HP, Grant Thornton * Not available

4.3 Value Chain of Fruits and Vegetable Processing

Value chain of fruits and vegetables starts from cultivation of crops in the farm, which has sub-components like sowing of seeds, flowering & fruiting, maturity or ripening and harvesting. Once crop is harvested producer take a call whether to sell or to store the produce. Produce changes various hands during its journey from producer to consumers. If produce is unprocessed, producers have to show urgency in reaching to primary market to off-load his/her inventory. With certain degree of primary processing (like, sorting, grading, and packing) shelf life can be enhanced by a few days, while, after secondary processing, shelf life as well prices can be enhanced multiple times. Value chain process is explained in the Figure 4.1.



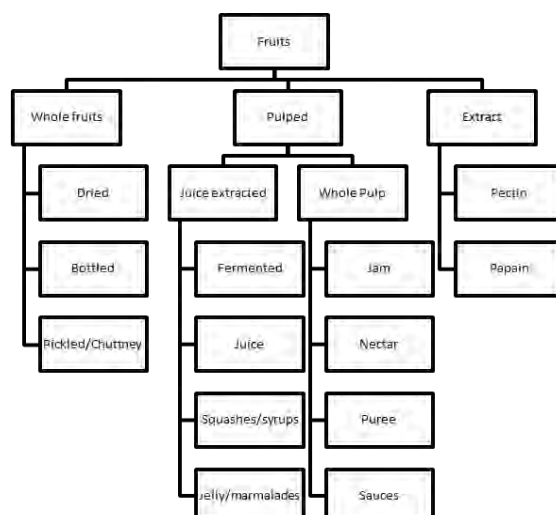
Source: JICA Study Team (2017)

Figure 4.1 Value Chain of Fruits and Vegetable Processing Sector

4.4 Value Addition

1) Fruits

There are a number of options for value addition in fruit processing. Fruits can be packed in corrugated packages and transported to desired market places. Some fruits can be dried and pickled (Mango, Lemon) and others can be peeled and canned. Majority of the fruits can be pulped and preserved for converting into juice, jam, jelly, squashes, sauces, marmalades. Extraction of fruits can also be made and packed either to mixed with other items like frozen dessert or bakery items. Value addition in fruits is explained in the Figure 4.2.



Source: JICA Study Team (2017)

Figure 4.2 Options for Value Addition of Fruits

2) Vegetables

Vegetables too can be converted into a number of items. Fresh vegetables can be packed in poly-propylene packs to conserve its freshness for a few extra days. Vegetables like cauliflowers, cabbage can be wrapped in poly films to keep it fresh and hygienic for several days. Potato can be processed into a number of items like chips, finger chips, mixture etc. Tomato can be processed in sauce, puree, soup, chutney etc. Spices like ginger, chilly, garlic can either be dried or converted into paste. Fresh peas can be frozen and packed in poly packs for longer shelf-life.

4.5 SWOT Analysis of fruits and vegetables processing sub-sector

Fruits and vegetables processing sub-sector has own strengths, weaknesses, opportunities and threats which have to be taken into consideration while designing a long term programme.

Table 4.4 SWOT Analysis of Fruits and Vegetables Processing Sub-Sector

Elements	Analysis
Strengths	Availability of raw material Availability of semi-skilled labour for primary processing work Availability of power to run machinery and cold chain system Priority sector status from state government and central government
Weaknesses	Non-availability of skilled labourers to operate machinery and equipment Non-availability of modern warehouses for fresh fruits and vegetables in rural areas Low awareness among producers about long term benefits of processing
Opportunities	Helpful in generating employment opportunities to rural youths near their villages Multiplier effect would be visible and services like machinery repair, packaging, retailing take place. Rate of technology transfer from research institutes to entrepreneurs will increase. Entrepreneurship training institutions will become more proactive in the region and new trade could be set up. Producer will get opportunity to pool their resources and collectively establish processing units, which will evenly spread risk and reward.
Threats	There is a trade-off between sales of unprocessed and processed fruits & vegetable in hilly region due to off-seasonal nature of produces. Processing unit based on single product line would not be feasible. Fulfilling legal requirements and branding development is a lengthy process and would require support of expert agency. Retailing would need strong communication and promotional initiatives.

Source: JICA Study Team (2017)

4.6 Fruit Pulping Enterprise

In fruit processing, pulping could be a suitable enterprise for the community because it requires less investment in terms of land and machinery, skill and marketing. There is a potential to make pulp of fruits having short shelf life like malta, mango, plum, cherry, peach and etc. Pulp could be sold to the juice producing agencies of the state. Pulping technique is simple activity which involves a pulping machine and small work shed and storage vessel. Raw material could be either brought from local farmers or from own field.

1) Financial analysis of proposed pulping unit fruit and vegetable processing

Fixed cost for pulping unit is INR 205,000/- and working capital would be INR124,000. Enterprise will remain operational during peak fruit harvesting season roughly 4 months in year. Pulp would be sold to beverage and juice making firms in the state. It would be group based enterprise with 10 members. Successful operation will earn INR2,000 per month for the members in 4 months (effectively INR 6,000 per month during operation duration). Table 4.5 provides financial analysis of fruit pulping enterprise.

Table 4.5 Indicative Financial Analysis of Fruit Pulping Enterprise for a Group (10HHs)

S.No	Particulars	Unit	Qty	Rate	Amount(INR)
A	Fixed cost				
1	Pulping machine	No	1	35,000	35,000
2	Fitting and fixture	No	1	15,000	15,000
3	Stainless steel Storage vessels of 100 lts	No	10	5,000	50,000
4	Stainless steel tray	No	10	5,000	50,000
5	Knife, peelers, gloves, mask	Set	10	500	5,000
6	Bio-digester to convert peels and residue in compost	No	1	50,000	50,000
	Total fixed cost				205,000
B	Recurring cost per annum				
1	Raw material (ripe fruits- cherry, plum, peach, malta, mango, pomegranate, apricot)	Kg	5,000	20	100,000
2	Rent of work shed for 4 months	INR	4	1,000	4,000
3	Electricity charges for 4 months	INR	4	5,000	20,000
4	Marketing expenses(5% of sale price of pulp)	INR			20,000
5	Interest on working capital	INR			9,920
6	Annual Loan instalment (36 instalments)	INR			3,444
	Total recurring cost				124,000
C	Sales				
1	Pulp	Kg	4,000	100	400,000
2	Bio-Compost form residual	No	1,000	7	7,000
	Total sales				407,000
D	Gross income				283,000
E	Annual Interest on fixed cost @8% per annum				16,400
F	Principal in fixed cost				68,333

S.No	Particulars	Unit	Qty	Rate	Amount(INR)
G	Net income after paying interest on fixed cost(In 36 instalment @8%/year)				198,267
H	Income per member				19,827
I	Income per month/member				1,652

Source: JICA Study Team (2017)

4.7 Pickle Making Enterprise

Pickle consumption is very common in the state and country. Women generally prepare different types of pickle in their houses for own consumption. Pickles are prepared from fruits as well vegetables. Common pickles consumed in state are of mango, lemon, amla, chilli, radish, carrot, garlic. Pickles of mushrooms produced locally could be made. Pickles require ingredients like spices and condiments which are locally available in HP. For a successful pickle making enterprise quality of raw material, spices, and proper hygiene is mandatory requirement. For a group enterprise capital investment for pickle making is approximately INR. 50,000/- (mostly for utensils and drying trays). Working capital requirement for a unit of 100 kg finished products would be INR10,000/ (for certain raw material not available in their agriculture land, spices and oil). Good quality pickles are sold at INR 200/kg in the open market. Pickle making would be a seasonal activity. It will supplement income of the women and reduce wastage of fruits and vegetables. Central and state government have launched several programs for the promotion of fruit and vegetable processing sub-sector in the state.

5. Beekeeping Enterprise

Beekeeping could be developed as allied activities with horticulture. In HP, under the Bee keeping program, 263.80 MT of honey has been produced up to 31.12.2016. It is a complementary activity for the horticulture sector, which renders pollination services for improvement of fruit setting and productivity, and also produces products like honey and bee wax. With an increase in the area under fruit cultivation, requirement of bees (friendly natural pollinators) is also increasing. Only for apple orchards (approximately 110,000 ha) there is requirement of 300,000 bee colonies. Rural youths can take beekeeping activity along with processing and packing of honey. There are well developed support systems for beekeeping in the state. The Table 5.1 provides details of the available infrastructure.

Table 5.1 Infrastructure Available in Proposed District for Beekeeping

#	Infrastructure	Number.
A	Total Beekeeping stations in state	32
1	Shimla	5
2	Mandi	2
3	Kullu	3
4	Bilaspur	1
5	Chamba	7
6	Kinnaur	4

#	Infrastructure	Number.
7	Lahaul & Spiti	1
B	Honey Ag-marking Laboratories in state	2
1	Hatkoti, Shimla	1
2	Chaitru, Kangra	1
C	Bee Breeding and Multiplication Centers (Private Sector)	3

Source: hphorticulture.nic.in/

5.1 Value Chain of Beekeeping Enterprise

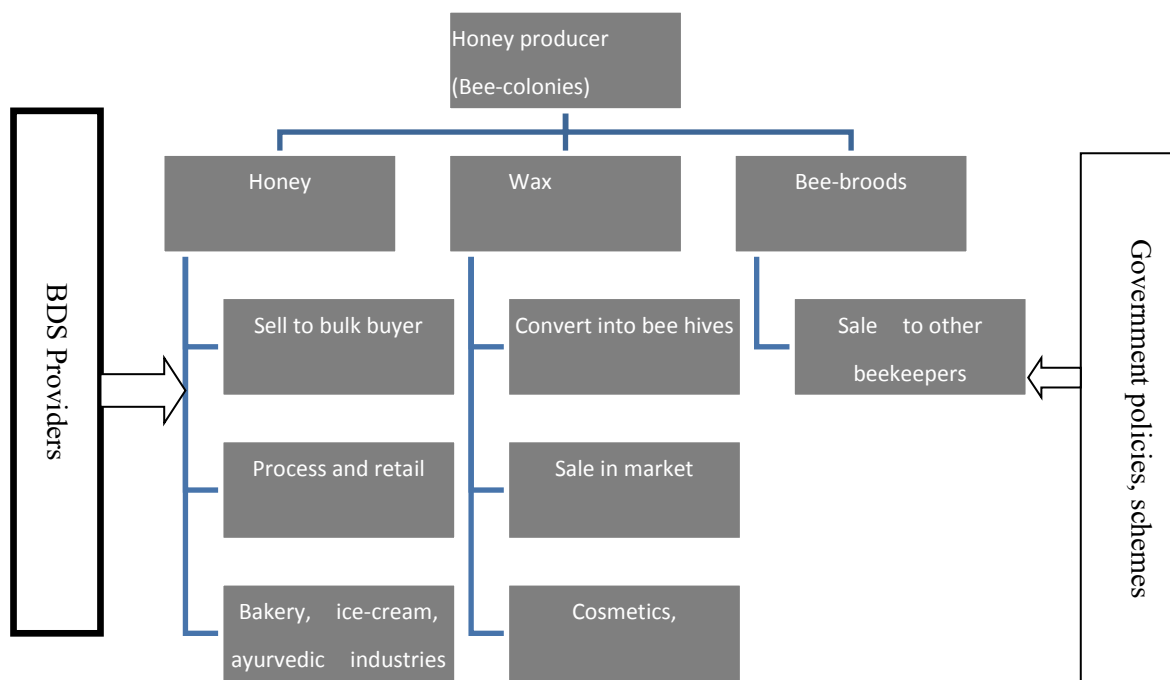
Beekeeping enterprise value chain starts with beekeeper who extracts honey in suitable season. The beekeeper periodically migrate the bee-boxes and manage the apiary unit (a group of bee boxes is called apiary unit). Generally, three products are produced in the apiary unit 1) honey 2) wax and 3) bee-broods (young bees).

For selling honey, the producer has two options; 1) to sell to bulk buyer directly from the apiary unit just after production or 2) to send to nearby processing unit for filtration and moisture reduction and store for appropriate time and buyer. It has been seen that if beekeepers are away from their home (migration), they directly sell honey to bulk buyer to avoid transportation charges, storage and supervision cost. Wax is either sold to hive makers/trader or converted into hive for expansion of own units. Bee-broods are sold to new beekeepers (if he has sufficient number of units and not interested in expansion).

Once raw honey reaches to bulk buyers, either s/he will do processing and sell to industries for product diversification or s/he will sell raw honey to big industries directly. Industries after further processing will bottle the honey and sell. Industries who are multiproduct business will use honey in a number of products like bakery, wellness products etc. Ayurvedic drug manufacture will use honey in formulation. Export oriented agency after conducting all necessary tests will export to European markets.

In this value chain there is an important role of business development service providers like wooden bee box makers, ironsmith (for stand, cover, honey extractors, tools), transporter, training institutions, agriculture universities, processing unit manufacturers, packaging industries and financial institutions.

Government policies and schemes play critical role in development of beekeeping enterprises. Subsidy-oriented schemes could motivate a youth to become entrepreneurs; taxation policies could help processor and retailer in marketing honey. Figure 5.1 explains value chain of the beekeeping sub-sector.



Source: JICA Study Team (2017)

Figure 5.1 Value Chain of Beekeeping

5.2 SWOT Analysis of Beekeeping Sub-Sector

Table 5.2 SWOT Analysis of Beekeeping Sub-Sector

Elements	Analysis
Strengths	Due to increase in horticulture activities, availability of flora in state have increases. Climatic condition is suitable for rearing of Italian bee <i>apis mellifera</i> . Strong government support for proliferation of beekeeping activity in state Network of training and resource center spread across the state Bees have become critical factor in sustaining apple production (pollination agent).
Weaknesses	Beekeeping required periodic seasonal migration as per availability of flowers and extreme cold condition are not suitable for honey production. Beekeeping is done in wooden boxes and availability of suitable wood would be a limiting factor. Excess use of insecticides and pesticides can harm bees and quality of honey. Constant supervision is needed for the beekeeping units.
Opportunities	Increase in the area under horticulture demands more number of bee boxes. Apple orchards required approximately 300,000 colonies. Demand of honey in wellness and Ayurvedic industries is growing up. Honey is becoming important food item in middle income group. It can be easily processed and packed for retailing. Vertical and horizontal integration could be done with milk processing units and fruit processing units. Organic honey has huge demand in the export market.
Threats	Indiscriminate use of insecticides and pesticides in the fields has direct impact on lives of bees and quality of honey. Adulteration is common problem which harms market sentiments and consumer preference. Export market is volatile and requires stringent quality control.

Source: JICA Study Team (2017)

5.3 Investment required for Setting Up Beekeeping Enterprise

Beekeeping enterprise could be started with 50 boxes of bee colonies. Initially an entrepreneur requires training on basic management of beekeeping. He can get support from already practicing beekeeper during the initial stage. Skills of migration, colony division, honey extraction, and disease control can be learnt in different phases. Processing and packing machinery are available in the market and entrepreneur can buy as per his requirement. In the first year, a fixed investment of INR 310,000 is required. In addition to the fixed variable cost requirement is INR 250,000. At the end of one year, the entrepreneurs could earn net income of INR 150,000. Bank loans are available for beekeeping enterprise. Table 5.3 provides financial analysis of beekeeping enterprise.

Table 5.3 Indicative Financial Analysis of Beekeeping Enterprise for One Household

#	Items	Qty	Rate	Amount(INR)
A	Fixed cost			
1	Bee boxes with top lid with 10 frames(each) of bee colonies	50	5,000	250,000
2	Additional empty boxes for contingency and division	5	1,000	5,000
3	Wax foundation sheets for contingency and division	50	20	1,000
4	Wooden frame with wire	50	50	2,500
5	Honey extraction machines of stainless steel	1	15,000	15,000
6	Tent (10*10 feet)	1	10,000	10,000
7	Veil, clothes, protective gear	3	2,000	6,000
8	Food grade storage can for honey of 20 kg capacity	25	300	7,500
9	Mosquito net large size(15*15Feet)	2,000	1	2,000
10	Tools and equipment set	2	1,000	2,000
11	Bee queen separator	50	200	10,000
12	Miscellaneous	20	50	1,000
	Total fixed cost(A)			312,000
B	Variable cost			
1	Wages for one employees 0 year one employee and onward 2)	12	12,000	144,000
2	Feed expenses for colonies during lean season (sugar and pollen 6 kg box/year)	300	42	84,000
3	Medicines(INR 5 per box)	50	5	250
4	Migration site survey expenses (conveyance, food and lodging)	2,000	3	6,000
5	Migration charges (truck , labor)	200	50	10,000
6	Miscellaneous	20	50	1,000
	Total variable cost(B)			245,250
C	Production/Sales			
1	Honey production (40kg per box in normal condition)	2,000	200	400,000
2	New colonies (in one year double if division done)	250	400	100,000
3	Wax (150 gm per box)	7.5	400	3,000
	Total sales©			503,000

#	Items	Qty	Rate	Amount(INR)
D	Income (C-B)			257,750
E	Payment of loan instalment with interest on fixed cost (Interest @10%, loan tenure 5 years) and additional investment 1st year onwards			105,000
F	Net income(D-E)			152,750

Source: JICA Study Team (2017)

Apart from the above cost, expenses are needed for regular training, refresher training of promoter and additional investment would require in setting up processing units, branding and promotional events.

Beekeepers can also get various supports from government schemes either by forming a cooperative institution or producer company. Horticulture department and Khadi and Village Industries Board (KVIB) have various schemes for development of beekeeping sub-sector in the state.

5.4 Wild Honey Collection

Kinnaur district is known for traditional honey collection. Tribal people rear *Apis cerena* in the wall of their houses in specially designed wall fixed hives. These bee colonies produce 3-5 kg honey per year. Honey obtained from wall fixed hives is of best quality, provided it is collected and stored in hygienic manner. It has been observed that changes in structure of houses, traditional beekeeping is disappearing from many parts, hence there is a need to preserve this tradition by bringing technological improvement in collection and storage. Non-destructive method of honey collection and use of centrifugal machine to extract honey could be used. Proper packing and ethnic branding will fetch good revenue for the wild organic honey. To develop apiary based beekeeping sub-sector SFURTI model can be used.

5.5 Scope for Women in Beekeeping Sub-sector

Women can undertake beekeeping especially of *Apis Cerena* (which doesn't need migration) near their houses. They need proper training and handholding support for beekeeping. Beekeeping enterprise will provide them additional income as well improve productivity of the horticulture crops. Production activity could be taken on individual basis while marketing could be done collectively as a group (CIG/ SHG). Necessary support for establishment of beekeeping unit would be provided through SHG/CIG mode. Training would be provided in the villages itself. Group can employ a local trained youth to supervise day to day activity of colony in the initial 3-6 months duration.

5.6 Beekeeping Cluster

Beekeeping could be taken up in Kullu, Kinnaur, Mandi, Shimla districts. Clusters may be developed in the area where sufficient horticulture activities are undertaken. Lahaul & Spiti may not be suitable for bee keeping cluster development. Youth club or Yuvak Mandal may be considered for the basis for cluster development. For women, special training would be provided

for *Apis Cerena* breed. Training could be provided at beekeeping centers or agriculture colleges. Training can be provided in villages too for women.

6. Mushroom Cultivation Enterprise

Mushroom is considered to healthy food and suitable for all age groups. Due to its exotic flavor, taste and fleshiness, it has become an important delicacy in human diet. Mushrooms are rich in proteins, dietary fiber, vitamins and minerals. They have insignificant lipid level and high proportion of polyunsaturated fatty acids resulting in low calorific value. The protein content, though varies greatly in different mushrooms, is usually high. Mushrooms are an excellent source of vitamins especially C and B (Folic acid, Riboflavin, Niacin and Thiamine) and minerals like potassium, sodium and phosphorus. It also contains other essential minerals like Cu, Zn and Mg in traces. Mushrooms are also known to have medicinal values as these have been shown to promote immune function, boost health, lower risk of cancer inhibiting tumour growth and support body's detoxification mechanism. Mushroom, thus has great potential for the production as quality food.

6.1 Outline of Mushroom Cultivation

Mushroom production has two important components; 1) Production of compost & spawn and 2) production of mushroom. First activity i.e. production of compost & spawn requires huge investment in land area, shed, laboratory, trained manpower and technology support. These are generally done by large entrepreneurs. Second activity production of mushroom from ready-made compost bags is suitable for small entrepreneurs & self-help groups. Interested entrepreneurs can purchase required number of bags from government or private mushroom compost producing units and start cultivation.

Button Mushroom cultivation is lucrative household enterprise for rural women and youths. It has potential to enhance/supplement household income of the family. This enterprise if done at household level then doesn't require land, large scale investment and machinery. A person can start cultivation by doing an investment of INR 20,000-25,000 initially. Villagers residing in the areas situated above 2,000 m can take up with enterprise as off-seasonal activity (from March to June) when temperature is limited source of cash flow for villagers. Most of the marriages also take place in during that period there is huge demand of mushroom dishes in feasts. In HP, can be grown in all the districts but production depends on temperature and humidity. Different areas of districts like Chamba, Shimla, Kullu, Mandi have potential for two to three crops in a year. In extremely cold regions, one crop during spring season is possible. During 2016-17 up to December, 2016, 435.07 MT of pasteurized compost for mushroom was prepared and distributed in the department units located at Chambaghat, Bajoura and Palampur. A total of 5,103.00 MT of mushroom was produced in the state up to December, 2016. District wise potential of mushroom cultivation is provided in the Table 6.1.

Table 6.1 District-wise Potential of Mushroom Crop

S.No	District	Climate zone	Potential crops/per year (No)
1	Bilaspur	Low hill	One crop
2	Chamba	Mid/High hill	Two-three crops
3	Kinnaur	Cold & dry hill	One crop
4	Kullu	Kullu	Two-three crops
5	Lahaul & Spiti	Cold & dry hill	One crop
6	Mandi	Low/Mid/High	Two-three crops
7	Shimla	Low/Mid/High	Two-three crops

Source: [https://www.nabard.org/demo/auth/writereaddata/ModelBankProject/1612160659Mushroom_cultivation_\(E\)in_Himachal_Pradesh_-E.pdf](https://www.nabard.org/demo/auth/writereaddata/ModelBankProject/1612160659Mushroom_cultivation_(E)in_Himachal_Pradesh_-E.pdf) accessed on 21 Sep 2017

6.2 SWOT Analysis of Mushroom Production Enterprise

Table 6.2 SWOT Analysis of Mushroom Production Enterprise

Elements	Analysis
Strengths	<p>Climate conditions of proposed project divisions/districts are favorable for mushroom cultivation.</p> <p>Availability of raw material for preparing compost bags, necessary technology for spawn production, technology providers, premium level research center (National Mushroom Research Center, Solan).</p> <p>Enabling Union and State government policies for development of mushroom sub-sector.</p> <p>Consistent demand of mushroom from hotels and restaurant throughout the state</p> <p>High consumption of mushroom by local community</p>
Weaknesses	<p>Mushroom enterprise production cycle is short, two to three months and fresh investment is required to purchase new bags at the beginning of production cycle.</p> <p>Technical capacity of community is low.</p> <p>Chances of getting whole lot of mushroom bags spoiled if proper temperature and humidity not maintained.</p> <p>Transportation cost to rural areas is high and handholding support to producer is costly.</p>
Opportunity	<p>Mushroom produced in plain areas are grown in artificial condition and consumes lot of energy, which increases cost of production, while in higher altitude of HP mushroom can be grown in natural conditions.</p> <p>Shelf-life of mushrooms produced in air-conditioned chambers is short and require cold chain system for transportation whereas in higher altitude no air-conditioning or no cold chain system is required. Poly-propylene packing is sufficient for storing mushroom for a week.</p> <p>Mushroom cultivation does not require landholding, hence suitable for women, marginal farmers, and rural youths.</p>
Threats	<p>Mushroom production in high altitude areas has threat from supplier of poor quality composting material.</p> <p>Increase in transportation cost and blockage of road can trouble/delay timely movement of composting material to production sites and mushroom to markets.</p>

Source: JICA Study Team, 2107

6.3 Financial Analysis of Mushroom Cultivation

An entrepreneur should start button mushroom cultivation with 200 bags for better results. At present a batch of 200 bags will cost around INR18,000-20,000 (transportation charges may be extra depending upon). In a cropping cycle of 3-4 months these 200 bags have potential to produce an average of 400-450 kg of mushroom whose market value is between INR. 50,000-55,000. Marketing cost comes around INR 8,000-10,000 which includes packaging, transportation. Thus, in a time period of 4 months an entrepreneur can earn net income of INR

18,000-22,000 which is nearly 100% of his/her investment. Once mushroom is fully harvested its spent compost is excellent manure for crops like apple, maize, potato, and other vegetable crops. financial analysis of button mushroom cultivation enterprise is provided in the Table 6.3.

Table 6.3 Indicative Financial Analysis of Mushroom Cultivation Unit

#	Items	Qty	Rate (INR.)	Amount(INR)
A	Fixed Cost			
1	Tools and equipments (Thermometer, Hygrometer, knives)	1	2,500	2,500
2	Cost of wooden rack (100 Sq ft)	1	1,000	1,000
	Total fixed cost (A)			3,500
B	Recurring cost			
1	Mushroom compost bags	200	90	18,000
2	Transportation charges	1	3,000	3,000
3	Marketing cost(packing and transportation) INR 10/kg	450	10	4,500
4	Rent of room(10*10 ft)	1	2,000	2,000
	Total recurring cost (B)			27,500
C	Sales			
	Value of mushroom	450	120	54,000
	Total sales (c)			54,000
C	Income (B-A)			26,500

Source: JICA Study Team, 2107

6.4 Scope for Women in Mushroom Cultivation

Women can do mushroom cultivation in their houses or villages by form common interest groups comprising of 5-10 members. Mushroom producing clusters would be formed by aggregating 10-15 groups. Priority would be given in the areas where two crops are possible. The potential number of women that can be engaged for mushroom cultivation could be 1,600 women.

The marketing of mushroom can be done along with honey or apiary based products through CIGs/ SHGs. It is difficult to promote a single product based cooperative or society; therefore, best option would be to associate honey producer and mushroom growers with milk cooperative federation for marketing of products under its already recognized brand name and market channel will immensely benefit the small growers. This arrangement will be win-win situation for the community and dairy plants. 'SAFAL'- an initiative of Delhi based milk federation is example of such initiative in which green vegetable and mushroom are sold by dedicated stores. It is suggested to do detailed study of the SAFAL model to replicate in the state. Milk federation (for example Duttanagar in Rampur, Shimla) or can be motivated to install honey process unit (which would add to their product line). It will buy honey from local producer after processing in its plant market through established brand name. A successful arrangement marketing under brand name of milk has been done in Muzaffarpur, Bihar few years ago.

7. Animal Husbandry based Livelihood Options

Rearing of livestock is an integral component of rural economy. In Himachal Pradesh there is a dynamic relationship between common property resources (CPRs) such as forests, water and grazing land, livestock and crops. Livestock depends on fodder and grass grown on CPRs to some extent and on crops and residues. At the same time the animals provide manure in CPRs that could promote rejuvenation of the fodder grasses and works as draught power on the grasslands. The contribution of major livestock products during the year 2015-16 was 1.28 million tonne of milk, 1,411 tonne of wool, 81.17 million eggs and 4,005 tonnes of meat which will likely to be of the order of 1.32 million tonne of milk, 1,475 tonnes of wool, 97.00 million eggs and 4,130 tonne of meat during 2016-17 (Economic Survey 2017).

HP is endowed with the large livestock population. According to 2012 Livestock Census, total livestock population of H.P. is 4.67 million (Livestock census 2012, Govt. of HP).

7.1 Milk production

The state produced around 1,120 thousand tons of milk in 2011-12, registering 2.2% Compound Average Growth Rate (CAGR) over (2008 - 2012), while the national milk production grew at 4.3% CAGR (2008 - 2012). The key contributors to the growth in HP were districts of Chamba, Hamirpur, Mandi and Sirmour. HP is primarily a cow milk producing state with cow milk contributing 61% to the total milk production.

The average yield from exotic/crossbred cows stood at approximately 4.6 kg/day compared to national average of 6.8 kg/day. In case of indigenous/non-descript cows, the yield in HP was 1.5 kg/day, compared to national average of 2.2 kg/day. For buffaloes, the yield in the state stood at 3.5 kg/day compared to national average yield of 4.58 kg/day. In case of goats, the yield in HP stood at 0.49 kg/day, while the national average was 0.4 kg/day. HP with an estimated 446 grams ranks at number four in the country as against the national average of 281 grams. Key district with higher milk production are Kangra, Mandi (19% each) and Shimla (11%). In year 2016-17 total milk production was 132.82 million tons. (Source- Ministry of Agriculture: 18th Livestock Census -2007). Table 7.1 provides milk production data in prioritised project districts.

Table 7.1 Milk Production in Prioritised Project Districts

#	District	Milk production		% change
		2014-15	2015-16	
1	Bilaspur	49,457	71,700	45%
2	Kinnaur*	0	0	
3	Kullu	7,683,347	8,113,297	6%
4	Lahaul & Spiti*	0	0	
5	Mandi	8,316,637	8,460,931	2%
6	Shimla	2,307,861	2,272,387	-2%

Source: Department of Economics, 2017 Remarks: *Date not available

7.1.1 Supply Chain and Value Chain of Milk and Milk Products

Milk from producers to consumers reaches through primarily four channels.

1) Producer – consumer (direct door to door selling): This system is prevalent in the locations where there are urban centers or Industrial Township. Producers distribute milk door to door in the morning and evening to the fixed consumers and payment is collected to at the end of calendar month. Direct selling system is best when demand of milk is predictable throughout the year. In this case producer takes the risk of unsold inventory if either production has increased or number of customers declined. In that case producer sells produce to local sweatshops and restaurant at discounted price. Producers are not entitled to get any bonus or subsidised cattle feed from government supported dairy units however he gets higher prices as compared to government dairy.

2) Producer- Middlemen-Consumers: The producers who are mainly residing in rural areas and urban center are far preferred to sell their produce to middlemen (either from village or nearby area) at wholesale price. Prices offered by middlemen are slightly higher than the government supported dairy (to maintain goodwill among producers). However, during the peak production season middlemen reduce purchase prices.

3) Producer-Private dairy-Consumers: This model has emerged as competitor to government dairies. Private dairy collect milk from individual or may form groups in their operational areas.

4) Producer-Primary Cooperative society-State owned milk union processing centers-consumers- This model is also called ‘AMUL’ model due to its origin. In this model milk producer form a primary cooperative society and link themselves with district level milk unions. Milk union opens collection center with necessary equipment in the villages or cluster of villages. Milk is procured from members only and proper records are maintained. Procurement prices of the milk are fixed by APEX body of milk union called as Milk Federation and paid as the percentage of fat and solid not fat (SNF). Milk federation provides cattle feed and nutrients to its members on subsidized basis. In case of profit, milk federation also provided annual bonus to its members.

7.1.2 SWOT Analysis of Dairying Enterprise

Table 7.2 SWOT Analysis of Dairy Enterprise

Elements	Analysis
Strength	Many rural households in the HP rear cattle for milk. Per capita milk consumption is showing increasing trend from past several years. Consumption of milk products like ghee, butter, paneer, curd is increasing both at local and national level. Climate suitable for crossbreed cows Government infrastructure is available for veterinary services.
Weaknesses	Productivity per cattle is lower than national average. Quality green fodder is not available throughout year. Transportation of milk from remote location is expensive.
Opportunities	Demand of packaged milk and milk products is increasing in rural and urban areas. Private firms are also venturing into dairy business and hence competition is increasing. Technology of cold chain is improving and storage at local level is now possible.
Threats	Change in agriculture practices (cereal to cash crop) is reducing supply of green fodder

Elements	Analysis
	Pasture land are shrinking, so natural environment for cattle is decreasing. Competition from other states is increasing.

Source: JICA Study Team (2017)

7.1.3 Available Support for Milk Production and Processing in State

At present there are 921 village dairy cooperative societies working in the state out of which nearly 20% i.e. 185 are exclusive women cooperatives. There are 10 fully operational dairy plants and 23 milk chilling plants. To avoid spoilage of milk in the remote villages (where reaching milk collection van is not possible on day-day basis) 103 bulk milk coolers of 1000 liter capacity have been installed Snap shot of milk cooperative in HP. Table 7.3 provided information of supporting structure for dairying activities in HP.

Table 7.3 Supporting structure for dairying in HP

#	Critical information	Numbers
1	Village dairy cooperative societies	921
2	Women village dairy cooperative societies	185
3	No. of dairy plants	10
4	No. of milk chilling centers	23
5	Milk chilling capacity	96,500 lt/day
6	Milk processing capacity	95,000 lt/day
7	No. of bulk milk coolers installed	103
8	Powder plant at Duttanagar, Rampur, Shimla	5MT/day
9	Cattle feed plants	One(16MT/day)
10	Milk procurement per day	85,000 lt
11	Turnover of Milk Federation	INR 1,070 Million
12	Production of Panjiri at Mandi unit	45-50,000 qt/ annum
13	Procurement price of milk from producers for cow milk 4% fat and 8.5% SNF	INR 22.80/ lt
14	Procurement price of milk from producers for buffalo milk 6.5% fat and 8.5% SNF	INR. 27.00/lt

Source; <http://hp.gov.in/milkfed/> accessed on 18 September 2017

7.1.4 Milk Production Enterprise: Crossed Breed Cow based Dairy Unit

It is best suited for farmers having 3-4 acres of landholding where he/she can grow fodder and feed his/her cattle. A farmer can supplement his/her income by establishing a milk production unit of two crossed breed cows in the initial year. Table 7.4 provides fconomic analysis of crossed breed cow dairy unit.

Table 7.4 Indicative Financial Analysis of Crossed Breed Cow Dairy Unit for One Household

#	Items	Qty	Rate	Amount(INR)
A	Fixed cost			
1	Crossed breed Cows(Jersey) with calves at foot in early stage of 1st and 2nd lactation	2	25,000	50,000
2	Cow shed (15* 15 Ft) proper lightings and heating	1	20,000	20,000
3	Improved manger	2	1,000	2,000
4	Feed & Fodder storage	1	5,000	5,000
5	Chaff cutter	1	5,000	5,000
6	Bio-composting unit	1	5,000	5,000
	Total fixed cost(investment)			87,000

#	Items	Qty	Rate	Amount(INR)
B	Working capital			
1	Dry fodder (kg) per annum @ 5kg per day	1,825	2	3,650
2	Green fodder per annum @ 20 kg per day (From own field)	7,300	1	7,300
3	Concentrate per annum @ 2kg per day	730	8	5,840
4	Salt & Mineral mixture (in gram) 30 gm per day	10	20	200
5	Veterinary expenses per annum	1	500	500
6	Annual insurance per cattle(5% of cattle value)	1,250	2	2,500
7	Loan instalment with interest@10%			26,100
	Total working capital (yearly)			46,090
c	Sales			
1	Milk Production/Sales			
2	Average milk production(6 litres 300 days lactation)	3,600	25	90,000
3	Sale of manure/compost	6,000	5	30,000
	Total sales			120,000
	Gross income			73,910

Source: JICA Study Team, 2107

7.1.5 Clusters Promoted for Dairying:

Since Bilaspur, Kullu, Mandi, and Shimla are major producer of milk and most of the village are accessible dairying clusters would be promoted un-served areas. An area covering 2,000 cattle rearing house-holds would be required to develop an economically viable dairy cluster.

7.2 Poultry Enterprise

Consumption of eggs and meat is common by community residing in higher altitude of HP. During snowbound period non-vegetarian food provide them necessary source of calorie. Backyard poultry would be viable option for the households to supplement their income with less effort. Backyard Poultry enterprise could be started with 200 birds of 4 weeks. These birds are scavenging and don't need regular in house feeding.

Rear 400 L.I.T birds in backyard: To rear 400 straight run birds provision of 200 chicks in two batches in a gap of one & half year would be done. In this enterprise male would be reared up to 16 weeks while female will be kept for one year. Apart from meat there would be production of 120 eggs per bird during one year period. Cost of feeding to these birds negligible because these are scavenging birds and little hand-feeding especially kitchen-waste is used. If enterprise starts in the beginning of summer month the in cold place most the chicks would become adult and survive the snowbound condition. Per bird will yield INR 95/month for the household. Table 7.5 provides financial analysis of backyard poultry enterprise for one household.

Table 7.5 Indicative Financial Analysis of Backyard Poultry

#	Particulars	Unit	Qty	Rate	Amount
A	Non-recurring expenditure				
1	Night shelter/initial feeding of newly procured chicks	INR	1	15,000	15,000
	Total fixed cost (A)				15,000
B	Recurring expenditure				
1	Cost of birds at 4 weeks of age	No	400	50	20,000
2	Cost of feeding				
2.1	For females & males (8 to 16 weeks) 56 days @30 gm/bird/day and taking into account mortality 10%	Kg	720	30	21,600
2.2	For females (16 to 72 weeks) @15 gm/bird/day	Kg	1,080	30	32,400
3	Miscellaneous expenses	No.	400	5	2,000
	Total recurring cost(B)				76,000
C	Sales				
1	Males	no.	200	180	36,000
2	Spent hens	No.	160	100	16,000
3	Table eggs	No.	192,00	5	96,000
	Total sales ©				148,000
D	Gross profit per cycle of 18 months				57,000
E	Profit per bird for 18 months				142.5
F	Income per month per bird				95

Source: JICA Study Team, 2017

8. Traditional Enterprises with Specific Group of People

There are certain activities like broom making, bamboo basket making, leather accessories, wooden artifacts making which are done by certain groups of people. In the proposed projects such activities would be promoted on SHG mode. These enterprises would not be capital intensive but need working capital support to purchase raw-material in bulk. Product, design, and quality improvement training will improve efficiency and prices of the products.

9. Skills

Government of India and State Government are providing all types of support in enhancing skill level of youth so that s/he can get gainful employment.

HP Kaushal Vikas Nigam Limited has been created by Government of HP to empower all individuals of the state between the ages of 15 to 45 years to enhance learning and lifelong employment opportunities so as to increase the productive wage force of the state to take part in the economic growth of Himachal Pradesh and India and bridge its skill deficit. The State Government has fixed the targets under Skill Development activities according to the targets fixed by Government of India, as 455,000 for 2012–17 and 515,000 for 2017–22 (<http://hpkvn.nic.in/mission.html>). In prioritised project districts, skill development target is for 52,606 youths.

Table 9.1 Skill Development Target of HP State for 2017-22 in the Prioritised Project Districts

Unit: persons

S.No	Districts	Skilled	Semi-skilled	Minimally skilled	Total
1	Bilaspur	1,564	2,116	3,195	6,875
2	Kinnaur	105	352	1,512	1,969
3	Kullu1538	1,538	3,075	4,307	8,920
4	Lahaul & Spiti	13	226	630	869
5	Mandi	5,185	2,274	11,259	18,718
6	Shimla	10,076	2,681	2,498	15,255
	Total	18,481	10,724	23,401	52,606

Source: <http://hpkmn.nic.in/mission.html>

Attachment II.3.7.3.9 List of Potential Training Partners (HP and Other States in India)

No.	Organisation	Location	Category	Target	Contact Point	Email	Web-link	Comment
1	Arya Gramodyog Sansthan	Bhagpat, UP	Bee-keeping	User Groups	098102 68758 01234-297356	Jaidev@agshoney.com info@agshoney.com	http://www.agshoney.com/	
2	Central Bee Research & Training Institute	Pune	Bee-keeping	User Groups	020-25675865	Cbrt.pune@kvc.gov.in cbrtipune@gmail.com	NA	
3	State Beekeeping Extension Centre	Dharamshala	Bee-keeping	User Groups	Mr R. Bhardwaj 098054 01860	NA	NA	
4	Hirval Foundation (beecare)	Jalgaon, Maharashtra	Bee-keeping	User Groups	Mr Vishnu 09766296331 088908 70576	vishnuj280@rediffmail.com	http://www.beecare.in/Training.html	
5	Krishi Vigyan Kendra - National Dairy Research Institute	Karnal	Beekeeping Dairy	User Groups	0184-2259338 0184-2259339	Dir@ndri.res.in dir.ndri@gmail.com	http://www.ndri.res.in/ndri/Design/kvk.html#dtc	
6	Agricultural Cooperative Staff Training Institute-ACSTI	Shimla, HP	Cooperative	Clusters	Mr R. P. Nainta Principal 094181 29833	NA	http://hpsc.com/acti.asp	Contact from DGM NABARD
7	Regional Institute of Cooperative Management	Chandigarh	Cooperative	Clusters	095309 09411 0172-2600557 0172-2660973 0172-2609157	ricmchd@hotmail.com	www.ricmchandigarh.org	
8	Centre for Social Research, India	Delhi	Gender	SHGs	011-26899998 011-26125583		http://www.csrindia.org	Gender Training Institute
9	Nirantar - A Centre for Gender and Education	Delhi	Gender	SHGs	011-26966334	Nirantar.mail@gmail.com	http://www.nirantar.net	
10	Social Uplift Through Rural Action (SUTRA)	Solan, HP	Gender	SHGs	Mr Subhash 01792-283725	sutrah@gmail.com	http://www.sutrah.org	
11	Kanya Bhrun Bachao Society	Bilaspur, HP	Gender	SHGs/ Clusters	097364 01805 070182 16642	NA	http://www.kbbsbilaspur.co.in/	

No.	Organisation	Location	Category	Target	Contact Point	Email	Web-link	Comment
12	Jagori Rural Charitable Trust	Dharamshala	Gender IGA/Skill	SHGs	Ms Abha 01892-234974	jagorihimachal@yahoo.com	https://www.jagorigrameen.org/	
13	The Manu Weavers Handloom and Handicraft Coop. Society	Manali, HP	Handicraft	SHGs/ Clusters	098176 37009	anil.mehra85@yahoo.co.in	http://handicrafts.nic.in/EmpanelledNGOList.aspx?MID=149zYuVHdykeGcAv1dkcCg==	Empanelled with Development Commissioner (Handicrafts)
14	Bhartiya Mahila Gramodyog Sansthan	Allahabad	Handicraft	SHGs/ Clusters	Mr N. P. Singh 094153 08091	Bmgsansthan291295@rediffmail.com	http://www.bmgsindia.org/index.php?page=home	Empanelled with USTTAD
15	Mahatma Gandhi Institute of Rural Industrialisation	Wardha, Maharashtra	Handicraft Handloom	User Groups	07152-253513	Director.mgiri@gmail.com	www.mgiri.org	
16	Kangra Mahila Sabha	Kangra, HP	Handicraft Handloom	SHGs/ Clusters	092184 04645 098168 83734 01892-238337	Kmsindia429@gmail.com kmshimachal@rediffmail.com	http://handicrafts.nic.in/EmpanelledNGOList.aspx?MID=149zYuVHdykeGcAv1dkcCg==	Empanelled with Development Commissioner (Handicrafts)
17	The Gahar Mahila Hc Weavers and Sheep and Rabbit W P Pcs Cis Ltd	Kullu, HP	Handicraft Handloom	SHGs/ Clusters	01902-230400 086792 81078	gaharmahilla@gmail.com	http://handicrafts.nic.in/EmpanelledNGOList.aspx?MID=149zYuVHdykeGcAv1dkcCg==	Empanelled with Development Commissioner (Handicrafts)
18	The Hill Queen Hc And Hl Weavers Welfare Cis Ltd	Kullu, HP	Handicraft Handloom	SHGs/ Clusters	01902-253339 094180 03339	hillcokullu444@gmail.com	http://handicrafts.nic.in/EmpanelledNGOList.aspx?MID=149zYuVHdykeGcAv1dkcCg==	Empanelled with Development Commissioner (Handicrafts)
19	The Himshakti Handloom and Handicraft Coop. Society	Kullu, HP	Handicraft Handloom	SHGs/ Clusters	01902-222658 094181 18552	Rmn.vidyarthi@gmail.com	http://handicrafts.nic.in/EmpanelledNGOList.aspx?MID=149zYuVHdykeGcAv1dkcCg==	Empanelled with Development Commissioner (Handicrafts)
20	H.P. Handicrafts and Handloom Corporation Ltd.	Shimla	Handicraft Handloom	SHGs/ Clusters	0177-2621275 0177-2621557 0177-2626436 0177-2621620	hphimcraft@yahoo.co.in	http://www.himcrafts.com/index.aspx	

No.	Organisation	Location	Category	Target	Contact Point	Email	Web-link	Comment
21	HP State Handloom & Handicrafts Development Cooperative Federation Ltd. (HIMBUNKAR)	Kullu	Handloom	SHGs/ Clusters	01902-265483	himbunkar@gmail.com	http://www.himbunkar.co.in/index.html	
22	WWF India	Shimla	IGA/Skill	SHGs	Ms Arti Gupta 094183 42479	agupta@wwfindia.net		Provide IGA training in GHNP under NABARD
23	Chinmaya Organisation for Rural Development (CORD)	Kangra, HP	IGA/Skill	SHGs	Dr. Kshama Metre 01892-234322	cordsidhbari@gmail.com	http://www.chinmayamission.com/what-we-do/cord-chinmaya-organisation-for-rural-development/	
24	Government Industrial Training Institutes (ITI)	Across 12 districts, HP	IGA/Skill	SHGs/ Clusters	Mr Kushal Kumar 094184 81460 Shimla ITI (W)	NA	http://himachal.nic.in/index2.php?lang=1&dpt_id=2&level=1&lid=1354	
25	Himalayan Research Group	Shimla, HP	IGA/Skill	SHGs/ Clusters	Dr. Lal Singh 0177-2626820	lalhrg@gmail.com	http://www.hrg.org.in	
26	Association of Rural Activities and Voluntary Action for Literary Information	Sirmour, HP	IGA/Skill	SHGs/ Clusters	09418147950 09805197750 01702-226227	aravalihp@yahoo.com	www.aravalismr.org	Working with NABARD - on skill training, enterprise development (JLGs/FPOs/Farmers' Club)
27	Jagriti	Kullu, HP	IGA/Skill	SHGs	098164 74832 01902-224309	mamtachandar@yahoo.com mamta@jagritikullu.org info@jagritikullu.org	www.jagritikullu.org	IGA introduction and training Skill Training (NTFP)
28	Drishtee Foundation	Noida	IGA/Skill	SHGs	0120-4661000	info@drishtee.com	http://www.drishtee.org	Empanelled under NRLM
29	Community Empowerment Organisation for Rural Development	Chamba, HP	IGA/Skill	SHGs/ Clusters	Ms. Sukanya 01899-254125	ceordhp@gmail.com	NA	Formed during HPMHWDP

No.	Organisation	Location	Category	Target	Contact Point	Email	Web-link	Comment
30	C'valik Foundation	Kangra, HP	IGA/Skill	SHGs	Dr. Sandhyashree Pathania 01892-222603	cvalikfoundation@gmail.com	www.cvalikfoundation.org	IGA introduction Skill Training (NTFP)
31	Institute of Livelihood Research and Training	Hyderabad	IGA/Skill	SHGs/ Clusters	040-66585800	info@ilrtindia.org	http://ilrtindia.org	IGA Introduction and Training Product Development
32	Society for Technology & Development	Mandi, HP	IGA/Skill	SHGs/ Clusters	Mr. Joginder Walia 01905-246154/55	stdpsn@yahoo.com stdmandi@gmail.com	http://www.stdruraltech.org/index.html	SHG/VO product and enterprise development Marketing Support
33	Himachal Pradesh Institute of Public Administration (HIPA)	Shimla, HP	Multi-aspects	SHGs	Mr. Virendra Sharma 098050 11439	hipa-hp@nic.in	http://himachal.nic.in/index.php?lang=1&dpt_id=15	CBO Training Gender Mainstreaming/Budgeting Micro-Planning
34	Himalayan Action Research Centre (HARC)	Dehradun	Multi-aspects	SHGs/ Clusters	0135-2760121 0135-2762534	hod@harcindia.org	http://www.harcindia.org	Gender issues, CBO support, product development and enterprise support, IGA/Skill based training, rural marketing linkages
35	Mandi Saksharta Evam Jan Vikas Samiti (MSJVS)	Mandi	Multi-aspects	SHGs/ Clusters	Mr Bhim Singh, 094180 73190	msjvsmandi@gmail.com	http://www.msjvs.in	IGA Introduction and Training Product Development SHG general management Business Planning Financial Management
36	Arpan Seva Sansthan	Jaipur	Multi-aspects	SHGs/ Clusters	096655 77987 0141-4003189	arpansevasansthanjpr@gmail.com	http://arpansevasansthan.org	Poultry NTFP Skill training CBO Training Cluster Development

No.	Organisation	Location	Category	Target	Contact Point	Email	Web-link	Comment
37	Yerala Projects Society	Sangli, Maharashtra	Multi-aspects	SHGs/ Clusters	0233-2671318 0233-2675918	yeralaproject@dataone.in info@yerala.org	www.yerala.org	Women's Poultry Farming Cooperative IGA - Stitching and hand weaving Dairy Farming Poultry Farming Small Enterprise Development Technical and Financial Training
38	HP Mahila Kalyan Mandal (MKM)	Kullu	Multi-aspects	SHGs/ Clusters	Ms Madhurveena 098171 43425	madhurveena007@gmail.com		IGA Introduction and Training Product Development Local Marketing Support Gender Training Working with NABARD and local training partner for HPMHWDP
39	Biodiversity Tourism and Community Advancement (BTCA) - GHNP	Kullu	Multi-aspects	SHGs/ Clusters	Mr Gopal Thakur 094182 82148 082190 42994	btcaghnpl@gmail.com	http://greathimalayannationalpark.com/institutions/	IGA Introduction and Training Product Development SHG general management Business Planning Local Marketing Support
40	Aroh Foundation	Noida	Multi-aspects	SHGs	0120-4328400 /8419	arohfoundation@gmail.com	www.aroh.in	IGA Introduction and Training Product Development SHG General Management Empanelled under NRLM
41	Udyogini	Delhi	Multi-aspects	SHGs/ Clusters	011-26691153 011-26691183	mail@udyogini.org	http://www.udyogini.org/Aboutus.aspx	IGA Introduction and Training Product and Enterprise Development

No.	Organisation	Location	Category	Target	Contact Point	Email	Web-link	Comment
42	Self Employed Women's Association (SEWA)	Ahmedabad	Multi-aspects	SHGs/ Clusters	Ms Meera Ben 098244 27203 Ms Manisha Ben 085111 17979 Ms Kavita Ben 090990 46560 Ms Uma Devi Swaminathan 079265 89729	mail@sewa.org rudimtbl@gmail.com sgmh10@gmail.com	http://www.sewa.org	CBO Training Business Plan IGA Promotion/ Product Development Cooperative Training Engaged by HPMHWDP
43	Myrada	Bangalore	Multi-aspects	SHGs/ Clusters	080-25352028 /3166	myrada@myrada.org	http://myrada.org	IGA Introduction and Training Product Development SHG General Management Enterprise Development
44	Central Poultry Development Organisation and Training Institute	Bangalore	Poultry	SHGs	Dr. Abhijeet Kumar 09739405685 080 28466238	cpdoti@gmail.com	www.cpdoti.org	
45	Central Poultry Development Organisation (NR)	Chandigarh	Poultry	SHGs	Dr. S. Ganesan 0172-2655391	drganesanvet@yahoo.com	http://cpdonrhd.gov.in/welcome.html	
46	Dr. B.V. Rao Institute of Poultry Management and Technology (Venky Group)	Pune	Poultry	SHGs/ Clusters	Dr.S.V, Deshmukh 020- 26926320/21	ipmpune@venkys.com	http://venkys.com/?page_id=1122	

Source: Compiled by JICA Study Team (2017) based on existing data/information

Attachment II.3.7.4.1 Indicative TORs for Pasture Management Specialist, NTFP/Value Chain /Marketing Specialist and Sustainable Tourism Specialist

A. Pasture Management Specialist

1. Objectives of the Assignment

The pasture management specialist shall provide technical inputs for PMU of HPFEM&LIP in relation to surveying, planning, designing and monitoring of pasture management related activities of the Project.

2. Tasks

1. Review and design the pasture management activities including implementation plan and budget;
2. Review and finalises capacity development plan/ programme/ training modules for pasture management;
3. Facilitate convergence with other programmes and schemes.
4. Prepare TOR for specialized agencies to undertake the pasture productivity and ecosystem valuation;
5. Design and organizing exposure visits for PMU and other project implementation units.
6. Provide any other technical inputs requested by PMU in relation to the task

3. Duration of the Assignment

The specialist shall be engaged for 15 person months.

4. Outputs

- i. Survey reports
- ii. Pasture management plans
- iii. Capacity development plans
- iv. TOR for the pasture productivity and ecosystem valuation
- v. Report of the Training given and training materials produced
- vi. Assignment Report

5. Desired Qualification

- i. Post Graduate in biodiversity conservation, forestry, natural resource management, or other related fields
- ii. Experience in the field of pasture/ grassland management: 10 years or more
- iii. Proven experience of relevant fields in HP

6. Others

The specialist shall be recruited from the open market.

B. NTFP/ Value Chain / Marketing Specialist

1. Objectives of the Assignment

The NTFP/ Value Chain / Marketing specialist shall provide technical inputs for PMU of HPFEM&LIP in relation to surveying, planning, designing and monitoring of NTFP development and cluster business promotion.

2. Tasks

1. Review and confirm existing resource status and utilisation status of major NTFPs/MAPs in the project areas;
2. Identify market potential of NTFPs and other products relevant to project interventions in national and international market in collaboration with the NTFP/ MAP Specialist;
3. Review and preparation of value chain/ marketing/ NTFP/MAP development guidelines and manuals;
4. Develop marketing strategies for each identified product;
5. Develop strategies and action plan for cluster business promotion for the Project;
6. Design and prepare NTFP/MAP development plans for the Project
7. Prepare TOR for the specialised agencies to undertake market and value chain assessment for the Project and procurement of such agencies;
8. Plan and conduct training for relevant stakeholders in various skills in value chain /marketing / NTFP/MAP development;
9. Assist execution of NTFP/MAP development plans and cluster business promotion action plans;
10. Provide any other technical inputs requested by PMU in relation to the task

3. Duration of the Assignment

The specialist shall be engaged for 15 person months.

4. Outputs

- vii. Survey reports
- viii. Relevant manuals and guidelines
- ix. NTFP/MAP development plans
- x. Cluster business promotion action plans
- xi. Report of the Training given and training materials produced
- xii. Assignment Report

5. Desired Qualification

- i. Post Graduate Degree in Forest Management/ Natural Resource Management/ Forest Products/ Botany/ Marketing / Economics/ Sociology/ Business Administration and other related fields
- ii. Experience in the NTFP development & management, value chain, marketing and livelihood development: 10 years or more
- iii. Proven experience of relevant fields in HP

6. Others

The specialist shall be recruited from the open market.

C. Sustainable Tourism Specialist

1. Objectives of the Assignment

The sustainable tourism specialist shall provide technical inputs for PMU of HPFEM&LIP in relation to survey, planning and designing of sustainable tourism development plans.

2. Tasks

1. Collect information that are necessary for the development of sustainable community-based tourism, such as environmental and social carrying capacity of the area, monitoring methodology for tourism impact, consensus building among local communities on tourism development and benefit sharing
2. Conduct survey to identify the sites, tourism attraction and its management methodology to secure sustainability
3. Develop a strategy for sustainable tourism and community based ecotourism for the target sites
4. Design a plan with concrete ideas of sustainable tourism and community-based ecotourism development
5. Identify capacity development requirement of stakeholders and design capacity development plans
6. Identify national collaborators and establish linkages
7. Assist execution of the development plans.
8. Provide any other technical inputs requested by PMU in relation to gender

3. Duration of the Assignment

The specialist shall be engaged for 6 person months.

4. Outputs

- i. Survey reports
- ii. Sustainable tourism and community based ecotourism strategies
- iii. Sustainable tourism and community based ecotourism development plans
- iv. Capacity development plans
- v. Assignment Report

5. Desired Qualification

- i. Post Graduate in tourism, natural resource management, community development or other related fields
- ii. Experience in the field of tourism and ecotourism for 10 years or more
- iii. Proven experience of relevant fields in HP

6. Others

The specialist shall be recruited from the open market.

Attachment II.3.7.4.2 (a) Indicative TOR for Gender Specialist

1. Objectives of the Assignment

The gender specialist shall provide technical inputs for PMU of HPFEM&LIP to finalise gender action plan, gender monitoring system and gender training modules and prepare gender training plan.

2. Tasks

1. To review, revise and finalise Gender Action Plan in
2. To review, revise and finalise Gender Training Modules
3. To prepare training plan
4. To develop and institutionalize Gender Monitoring System
5. To prepare necessary training materials for Gender Training Modules
6. To act as a resource person during the Gender Training (TOT mode)
7. To provide any other technical inputs requested by PMU in relation to gender

3. Duration of the Assignment

The specialist shall be engaged for 6 person months.

4. Outputs

- i. Finalised Gender Action Plan
- ii. Finalised Gender Training Modules
- iii. Finalised Gender Training Plan
- iv. Report of the Training given
- v. Training materials produced
- vi. Assignment Report

5. Desired Qualification

- i. Have proven records of experiences in gender action planning and monitoring
- ii. Have acted as a resource person of more than 5 gender training programmes to cater for various levels of trainees
- iii. Have relevant academic background (Post graduate in gender studies, rural sociology, rural development and etc.)
- iv. Have more than 15 years of working experiences as a gender specialist

6. Others

The specialist shall be recruited from the open market.

Attachment II.3.7.4.2 (b) Preliminary Gender Action Plan for HPFEM&LIP

1. Overview

Gender mainstreaming is a way to create an enabling environment for women's empowerment. In the context of sustainable forest management and biodiversity conservation, women are known to be a key stakeholder in management and conservation as they bear the responsibilities of fodder collection and fuelwood in many parts of the state. In other words, the degradation of the forest resources would directly affect their well being as it also means longer hours to search for fodder and fuelwood.

Although in HP, alternatives are available for fodder and fuelwood, it is important for women, as key actors in SFM and BC, to be part of the planning, implementation and M&E of the sustainable forest management and biodiversity conservation activities.

2. Project Components and Gender Action Plan

Project Components/ Sub-Components	Gender Action	Data Required	Means of Verification
Component 1: Sustainable Forest Ecosystem Management	Men and Women are to hold separate discussion during the planning process.	Report by the facilitators	Report by FTU
	Gender budgeting is to be adopted (40% of the total budget.)	Budget of FEMP	Project MIS
Component 2: Sustainable Biodiversity Management	Women's working group shall be constituted under VFDS/ BMC by the representatives of sub committees of VFDS/ BMC women members.	Number of groups established	Project MIS
	Women's working group shall be constituted under sub-committees of FWC/ BMCs at ward level.	Number of groups established	Project MIS
	Male and female adult members of ward sabha shall become the sub committee member of VFDS/ BMC to constitute a general body. The right to vote shall be given to one for each member.	Gender segregated number of Sub Committees of VFDS/ BMC members	Project MIS
	Outsourced agencies are to comply with the project gender norms. - No gender segregation in wages/ remuneration - 30% of the staff members/ specialists are to be women, in case of a team	TOR and assessment criteria	TOR and Contract
	At least 50% of the VFDS/ BMC executive committee members are to be women.	Gender segregated number of VFDS/ BMC sub committee members	Project MIS
	Either chair person or vice chairperson is to be made woman of VFDS/ BMC. (Reserving the position of the vice chair person is not acceptable.)	Gender segregated number of chair person/ vice chair person	Project MIS
	Women workers are engaged at least 40% of the total number of work force for plantation and other related forestry works.	Gender segregated number of work days consumed by the workers	Project MIS
	No gender segregation in wages	Gender segregated wages paid	Project MIS

Project Components/ Sub-Components	Gender Action	Data Required	Means of Verification
	While deciding the treatment areas, women representatives shall be present.	Minutes of meeting	Report by FTU
	During species identification/ selection for the treatment areas, women should be give opportunity to identify/ select on their own.	Minutes of meeting	Report by FTU
	Women researchers are to be included at least 30% of the total number of researchers engaged.	Gender segregated number of researchers engaged in the project assisted research projects	Project MIS
	All officers/ staff/ community level groups are to be trained on gender.	Gender segregated number of trainees attended gender training	Project MIS
	All the community based training programmes / exposure visits should have at least 40% of women participation.	Gender segregated number of trainees	Project MIS
	Training venues and timings need to be set to accommodate women's daily schedule and requirement.	Assessment by the participants	Report by FTU
	Training facilities shall have gender segregated toilet facilities.	Assessment by the participants	Report by FTU
	Community level training programmes may be conducted in the local languages other than Hindi.	Assessment by the participants	Report by FTU
	Guidelines and manuals intended for community level organisations shall be prepared in Hindi and designed to be made simple and easy understanding.	Number of guidelines and manuals prepared in Hindi Assessment of the usability by the users	Report by FTU Report by FTU
Component 3: Livelihood Improvement Support	During planning, men and women should discuss separately to formulate their own plan, which gets synthesised in plenary.	Gender segregated number of attendance Minutes of meeting	Project MIS Report by FTU
	Drudgery reduction related activities are to be included as part of CD&LIP.	CD&LIP	Project MIS
	Women are encouraged to take part in livelihood activities.	Gender segregated number of CIGs/ individuals Gender segregated amount of CD&LIP funds used (grant/ revolving portion)	Project MIS
	Gender budgeting is to be adopted (40% of the total budget.)	Budget of CD&LIP	Project MIS
	Research topics that are related to drudgery reduction and sustainable forest management/ biodiversity conservation shall be included.	Number of research proposals related to drudgery reduction and sustainable forest management/ biodiversity conservation	Research Reports
	All officers/ staff/ community level groups are to be trained in gender.	Gender segregated number of trainees attended gender training	Project MIS
	All the community based training programmes / exposure visits should have at least 40% of women participation.	Gender segregated number of trainees	Project MIS

Project Components/ Sub-Components	Gender Action	Data Required	Means of Verification
	Training venues and timings need to be set to accommodate women's daily schedule and requirement.	Assessment by the participants	Report by FTU
	Training facilities shall have gender segregated toilet facilities.	Assessment by the participants	Report by FTU
	Community level training programmes may be conducted in the local languages other than Hindi.	Assessment by the participants	Report by FTU
	Guidelines and manuals intended for community level organisations shall be prepared in Hindi and designed to be made simple and easy understanding.	Number of guidelines and manuals prepared in Hindi Assessment of the usability by the users	Report by FTU Report by FTU
	Key aspects of the project shall be prepared in the audio visual materials in the local languages other than Hindi.	Number of audio/ visual programmes prepared in local language other than Hindi	Report by Programme Manager (Monitoring, Safeguards & Publication)
Component 4: Institutional Capacity Strengthening	Gender segregated monitoring indicators are to be adopted and the data to be collected accordingly.	Project Monitoring Evaluation Guideline M&E Indicators and data collected	Project MIS
	All officers/ staff/ community level groups are to be trained in gender.	Gender segregated number of trainees attended gender training	Project MIS
	All the community based training programmes / exposure visits should have at least 40% of women participation.	Gender segregated number of trainees	Project MIS
	Training venues and timings need to be set to accommodate women's daily schedule and requirement.	Assessment by the participants	Report by FTU
	Training facilities shall have gender segregated toilet facilities.	Assessment by the participants	Report by FTU
	Community level training programmes may be conducted in the local languages other than Hindi.	Assessment by the participants	Report by FTU
	Guidelines and manuals intended for community level organisations shall be prepared in Hindi and designed to be made simple and easy understanding.	Number of guidelines and manuals prepared in Hindi Assessment of the usability by the users	Report by FTU Report by FTU
	Key aspects of the project shall be prepared in the audio visual materials in the local languages other than Hindi.	Number of audio/ visual programmes prepared in local language other than Hindi	Report by Programme Manager (Monitoring, Safeguards & Publication)
	Women staffs/ officers are to be engaged more than 40% of the total staff members.	Gender segregated number of staff/ officers	Project MIS
	One male and one female ward facilitators are to be engaged in each VFDS/ BMC.	Gender segregated number of ward facilitators	Project MIS
	No gender segregation in wages of ward facilitators	Gender segregated financial report of honorariums paid to the ward facilitators	Project MIS
	More number of women are assuming the leadership position.	Gender segregated number of chair/ vice chair of the committees/ community level groups	Project MIS

Project Components/ Sub-Components	Gender Action	Data Required	Means of Verification
	FEMP/ CBMP and CD&LIP are revised by adopting the same principles during the preparatory stage.	Gender segregated number of attendants Minutes of meeting Gender budget	Report by FTU Project MIS
	Gender specialist is to be engaged in PMC.	TOR of PMC PMC proposal	Contract

Source: JICA Study Team (2017)

3. Implementation Framework

The gender action plan is to be embedded in the project implementation process through project guidelines/ manuals/ training programmes and also through the gender mainstreamed recruitment process. The project design so far has taken gender into consideration as much as possible and thus, the implementation shall not require separate set up.

4. M&E System

Although the gender action plan has already been embedded in the project design, M&E needs to be done with a focus although the data can be drawn from the project MIS and pre institutionalised M&E mechanism. Therefore, at PMU level, executive committee shall assume the function of gender M&E committee which would monitor and take decisions on necessary corrective actions to be taken in the project implementation process. Review meeting shall be held after receiving the quarterly report from FCCU. The nodal person at PMU, Programme Manager *(Monitoring, Safeguards, Publication) will prepare the quarterly report and annual report on the status of gender action plan.

At DMU level, the Subject Matter Specialist shall monitor and assess the situation on a quarterly basis and report to the committee. At FTU, FTU coordinator shall be the focal person to monitor and assess the gender situation at range level and compiles the quarterly report based on the project MIS and field observation.

5. Gender Training

The indicative gender training modules for various stakeholders are given in the table below. The training programme can be reviewed and modules can be prepared by the Gender Specialist engaged by PMU during the 1st year of the project implementation. The training programmes for FTU staffs are to be undertaken as TOT so that they can deliver the gender training programmes for the VFDS/ BMC/ Cluster Organisations/ and ward level sub committees, and CIG/ SHG members. In case the outsourced agency is to be engaged for TOT for DMU/ FTU, the Gender Specialist shall prepare TOR and assist PMU in shortlisting the competent agencies. Procurement can be done by quotation by more than 3 short listed organizations. By the time PMC is placed, PMC gender specialist can also provide inputs as resource person.

Indicative Outline of the Gender Training

Project Implementation Unit	Topics to be covered	Duration	Category of the Participants
PMU/FCCU	Human Rights and legal provisions in India Gender based violence Gender awareness Gender and leadership and governance Gender Action Plan for HPFEM&LIP and M&E Gender Budgeting Gender Analysis (Role play)	1 Day	PMU officials/ staffs
DMU/FTU (TOT Mode)	Human Rights and legal provisions in India Gender based violence Gender awareness Gender and leadership and governance Gender roles and relations in the project areas Gender Action Plan for HPFEM&LIP Gender Budgeting Gender Analysis (including field exercise) Gender Monitoring	4 days	DMU subject matter specialists/ FTU coordinators
VFDS/ BMC/ Clustr Organisations	Understanding gender Gender situation in the villages through gender analysis Gender action plans for HPFEM&LIP Gender budgeting Gender dimensions in FEMP and CD&LIP preparation Gender dimensions in VFDS/ BMC/ BMC sub committees/ Cluster Organisations – leadership & governance	2 days	Executive members of VFDS/ BMC/BMC sub committee members/ Cluster Organisations/ GP Mobilisers/ Ward Facilitators
CIG/ SHG	Understanding Gender Gender situation in the villages through gender analysis Gender awareness Gender relations in the project areas Gender action plans for HPFEM&LIP	2 days	Representatives of CIG/ SHGs

Source: JICA Study Team (2017)

End

Attachment II.3.7.4.3 Basic TORs for Environmental and Social Consideration Expert and Environmental and Social Consideration Field Expert

ESAF has identified a number of environmental and social safeguard issues and provided overall guidance on their avoidance, management and mitigation. In order to fully respond the requirement of ESAF, i.e. JICA Guideline and relevant legal framework in India and HP state, following additional experts are required to be employed by PMU for the provision of more detailed and specific guidance, capacity development and follow-up during project implementation. This is particularly the case due to the fact that detailed assessments of specific impacts on the ground have been limited during the Study.

The following TORs provide a basic summary of the key tasks for the Environmental and Social Consideration Expert (ESCE) and Environmental and Social Consideration Field Expert (ESCFE).

(1) Environmental and Social Consideration Expert (ESCE)

ESCE will be mobilised from the initial Preparatory Phase, before the procurement of the Project Management Consultant (PMC) and following-up the ESAF requirements with close communication with Environmental and Social Consideration Specialist deployed under PMC and Environmental and Social Consideration Field Expert (ESCFE) mentioned hereunder. The expert is expected to work on the following key aspects;

- a) To facilitate and coordinate with various implementation and line departments for smooth implementation of ESAF/VSTPF,
- b) To update and finalise ESAF/VSTPF,
- c) To develop appropriate training materials on environmental and social safeguards, following the requirements in ESAF,
- d) To provide training courses and capacity enhancement of selected participants, at the different levels of stakeholders who will be designated with additional responsibility 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 ESCS. In the absence/ termination of the assignment of the ESCE, he/she will report directly to PMU.

(2) Environmental and Social Consideration Field Expert (ESCFE)

ESCFE will be required to assist ESCE for the above identified tasks, especially for the preparation of the relevant capacity development programme. Considering the wide coverage of project targeted area and the requirements to ESCS, this position is highly required for smooth implementation of the ESC relevant activities. The expert will be mainly mobilised during the planned capacity development training period.

Attachment II.3.7.4.4 Terms of Reference for Training Needs Assessment (TNA)

1. Tasks to be Carried Out by the Agency/ Individual

The agency/ individual will undertake the following specific tasks using consultative and participatory approaches and methods:

- ◆ Undertake a Stakeholder analysis (as per institutional arrangements) to identify all stakeholders and actors in the project at all levels
- ◆ Asses the knowledge and skill gaps and identify the capacity-building needs for each stakeholder;
- ◆ Undertake a Situational analysis in order to establish baseline capacity
- ◆ Identify required training and modes of training for identified stakeholder needs (who, what training, how and when)
- ◆ Present the findings at a stakeholder workshops at PMU level (key stakeholders from field level to participate for feedback)

2. Skills and Experience Required

The agency/ individual is expected to have the following skills and expertise:

- ◆ Agency/ individual undertaken similar assignments
- ◆ Advance degrees in development studies, social sciences or related discipline;
- ◆ A minimum of ten (10) years' experience in conducting organizational capacity needs assessments, experience with self-assessment processes will be an advantage;
- ◆ At least 5 years of experience working in organizational development, capacity building in the specified area;
- ◆ Excellent writing and communication skills in English;
- ◆ Strong interpersonal skills and the ability to communicate and work well with diverse people.

3. Study Duration

2~3 months

Attachment II.3.7.4.5 Indicative Capacity Development Programme for Environmental and Social Safeguards

Different levels of officials/staff, other relevant stakeholders are targeted for the training programmes for the capacity enhancement to handle ESC issues. The indicative capacity development programmes for environmental and social safeguards is described hereunder.

Table 1 Indicative Capacity Development Programme for Environmental and Social Safeguards

Item	Descriptions
Training 1 Programme for Management/ Administrative Level	
Key Participants	Designated officials (and staff) of PMU, FCCU
Training Programme	<p>Topic 1: General Orientation on ESAF and VSTPF for the Project</p> <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, transhumance, Gender, etc.) - ESAF: steps and procedures with respect to the Project - FPIC <p>Topic 2: Monitoring and Evaluation for Environmental and Social Safeguard</p> <ul style="list-style-type: none"> - Concept of M&E - M&E and reporting procedures - Use of M&E results and feedback, including Grievance Redress Mechanism (GRM)
Duration	Two days training (once a year in the first four years at each division)
Training 2 Programme for Field/ Operational Level	
Key Participants	<ul style="list-style-type: none"> - Designated officials and staff of FTU - Designated field level officers - facilitators, village level mobilizers/ organizers - (If necessary) representatives of PRI/ Gram Panchayat/ JFMC
Training Programme	<p>Topic 1: General Orientation on ESAF and VSTPF for the Project</p> <ul style="list-style-type: none"> - Basic introductory concept of safeguard - Environmental and social impact assessment: overview - Environmental protection, EIA and social safeguard regulations (specific) - Safeguard issues (vulnerable groups, SCs, STs, transhumance, gender etc.) - Process of community consultation and public participation - FPIC - PRA for data collection, analysis and report preparation - Micro-planning <p>Topic 2: Monitoring and Evaluation for Environmental and Social Safeguard</p> <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 division)
Training 3 Community Facilitation and Environmental and Social Assessment for ESC	
Key Participants	<ul style="list-style-type: none"> - Designated field level officers - facilitators, village level mobilizers/ organizers - (If necessary) representatives of PRI/ Gram Panchayat/ JFMC
Training Programme	<ul style="list-style-type: none"> - Project activities planning (and micro planning) - Role of Panchayats, JFMC - Participatory ESA procedures - Working with vulnerable groups - Gender issues - 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
Training Programme	<ul style="list-style-type: none"> - For example: - Appropriate chemical use - Environment health & safety standard for construction - Occupational health & safety - Mitigation planning and implementation
Duration	To be defined when necessary

Source: JICA Study Team (2017)

Attachment II.3.7.4.6 Indicative M&E System for the Project

Following the M&E system, activities for tracking project progress and performance will be systematically carried out during the project implementation. M&E system will enable the Project to take remedial actions based on the lessons learnt. M&E system for the Project will have following 15 key elements grouped into a) Monitoring, b) Impact Assessment, and c) Audits and Transparency, and d) Performance Indicators. PMU would ensure to put the system in place during preparatory phase of the Project and develop M&E guidelines and manual. PMU will also take necessary steps to build capacities of the project staff at all level of operations on M&E aspects.

A) MONITORING

(1) Biodiversity Monitoring System

Biodiversity in a protected area encompasses thousands of life-forms, many of them not even named and described, yet the resources and people available to manage and monitor biodiversity are limited. Since the Project has focused on biodiversity conservation, the Biodiversity Monitoring System (BMS) is a minimum starting point that needs to be instituted under the Project, which one can expect should be evolved over a period of time, and later be internalized in the forest department as routine system for protected area (PA) management. Adequate equipment and human resources also need to be arranged to execute the BMS plan.

Monitoring of biodiversity should be able to answer questions such as:

Biodiversity monitoring specific questions: a) Are habitats and ecosystems being degraded? b) Are the populations of threatened species of plants and animals declining?

Performance monitoring questions c) What are the causes? d) Has management intervention had the intended impact on the ecosystem? e) Are there increased benefits to local communities from sustainable natural resource use?

In other words, monitoring should be able to answer if the management interventions in the area are effective in addressing biodiversity conservation.

Monitoring biodiversity is not the same as measuring biodiversity. Measuring biodiversity provides a snapshot of biodiversity at the time of measurement, whereas monitoring is a continuous process which allow managers to identify changes and trends over time so that they can assess whether interventions are achieving biodiversity goals and adapt its management accordingly. It would be a good approach for the short duration project to focus on monitoring trends rather than measuring absolute values. Thus, the Project will undertake a comprehensive biodiversity baseline survey engaging a qualified and credible institution/ agency during the preparatory phase of the Project. Most threats to biodiversity result from human activities which, in turn, depend on social and economic factors. Therefore, when looking performances for biodiversity related aspects, results of monitoring of socioeconomic factors as well as institutional factors shall be examined and if required, additional surveys to be conducted and monitored to evaluate the biodiversity performance.

Thus, a meaningful and operationally relevant biodiversity monitoring system will encompass a broad range of subjects to be monitored, including direct achievements of project interventions such as changes in biomass, changes in surrounding environment such as species compositions/ number of species/ biomass as impacts of project interventions, socio-economic factors, community involvement and institutional and regulatory factors. It will also be important to define the spatial and temporal scales of monitoring activities, as biodiversity management deals with ecological processes which are generally long-term changes (e.g. changes in population of a key species) resulting from management interventions may be slow to emerge, sometimes beyond the project timeframe.

The methods to be developed for monitoring purposes should aim for ensuring that no major change in a protected area's biodiversity can go undetected. Measurements aids like data loggers, cameras, automated weather stations (AWS), etc. shall be utilized for the purpose of data recording and analysis. The methods should have scope for involving local people, equipment and funds. In addition, the methods should be backed up by satellite-based monitoring of land-use on a regular basis as well as in-depth monitoring of selected habitats and species. This exercise would be undertaken once every two years from project initiation.

(2) Concurrent Monitoring and Periodic Reviews

For the project components other than biodiversity conservation, concurrent monitoring would be the key approach to bring in transparency and efficiently track the project implementation. The monitoring would be undertaken following multiple approaches – field visits, periodic reviews, reporting, assessments and feedbacks etc. Regular monitoring would be an in-house routine affair. Standard checklist, semi-structured questionnaire and set of indicators would be developed by PMU for undertaking concurrent monitoring. If required, monitoring could also be undertaken by hiring independent credible monitoring agency from time-to-time. The planned activities would be monitored against the approved Annual Plan of Operation (APO). A set of Operation & Effect indicators would be identified and necessarily be updated on annual basis by PMU.

PMU would create a system for undertaking field visits by PMU officials at regular intervals, and feedback the project management by way of structured 'Back-to-Office Reports'. IT/ GIS Cell would be made responsible to facilitate generation of analytical maps & reports based on the data captured through various GIS/ MIS modules at different level of project implementation. The analytical reports would be utilized by sectoral head for identifying critical gaps, and such issues would be transmitted by the Chief Project Director along with action points to all the divisions through circle offices at a regular interval.

Periodic reviews will be undertaken at all levels of project operations. The key institutions that would be responsible for periodic reviews are – GPs, project divisions, circles, PMU, and stakeholders/ agencies that would be interested in keeping regular track of the project implementation and performance, e.g. state/ central government, JICA. Following would be the frequency of monitoring & review by various stakeholders/ agencies:

Table 1 Frequency of Monitoring & Review Meetings

Frequency of Monitoring & Reviews	Stakeholders/ Agency
Fortnightly	Gram Panchayats
Monthly	Project Divisions
Quarterly	Circles and PMU/ GB
Six-monthly	HPC members, JICA representatives

Source: JICA Study Team (2017)

(3) Community Self-monitoring

System of self-monitoring by community institutions based on the annual implementation plans would also be in place at GP/village level. Community institutions would be facilitated and guided to fine-tune and adopt simple participatory tools for generating performance reports based on actual achievements.

PMU will ensure to implement colour-code based performance rating system for the project GPs. Based on the rating system Quarterly performance Report Card would be prepared for each GP, and would be displayed at range level. A caution is required that such a system should get evolved by community themselves rather than be project-driven.

To ensure that it happens initial hand-holding and capacity development on participatory M&E tools and processes, both for community representatives and project staff, would be required. To facilitate the process guidelines for the Community base Self-monitoring would be developed by PMU, and disseminated at the field level.

(4) Computerised MIS

Web-enabled MIS would be utilized for capturing the progress and achievements on day-to-day basis. MIS will be planned till range-level from where the data would get integrated upwards. This would be done in phased manner. Paper-based formats or mobile based app system would be used to capture information at GP and community institution level. The output reports generated by the MIS would give status of project progress and performance.

The existing MIS software will be modified by PMU within first year of the project initiation. In-house capacities of the forest department would be utilized to design or modify MIS modules as per the project requirements considering the project logical framework and proposed M&E system. Later, PMC would also guide PMU to strengthen the MIS reporting. IT/ GIS Cell within HPFD will also have mandate to provide technical back-stopping to project divisions and ranges during the project implementation. Training manual would be developed for the project specific MIS modules prior to commissioning, and will be used to train the project staff at all level of operation. Details on MIS is being provided in separate section of the report.

(5) Computerised Accounting System

Financial and accounting procedures and policies would be developed and adopted for the Project. These policies and procedures will be published in form of Financial Management and Accounting Manual, and will be disseminated to all key stakeholders. This manual will be key reference

document for maintaining transparency, providing clarity regarding financial aspects to the various stakeholders and finance staff, ensuring uniformity, and enforcing accountability. All units of operations will comply and follow the accounting procedures and policies as per the Financial Management and Accounting Manual approved by HPC and adopted by the Project. Training on using the financial management and accounting manual, and project account keeping would be planned for all key stakeholders.

Computerised accounting system based on standard accounting software would be utilized for maintaining financial records till range-level for real-time reporting. The accounting software would be customized and adopted for financial management, tracking disbursement as per annual plans and efficiently compiling Statement of Expenditures (SOEs) for submission to JICA, state government, and Central Aids, Accounts and Audit Division (CAAA) under Ministry of Finance, Department of Economic Affairs.

The accounting software would be procured for newly created project offices whereas the software already available with the forest divisions through Compensatory Afforestation Fund Management and Planning Authority (CAMPA) funds will be utilized for the project after customization.

All operational levels would be strengthened both in terms of equipment/ connectivity and human-resource to implement the plans. Systematic training would be planned for all key staff at all levels to handle and utilize these software for maintaining financial records and generating reports.

(6) Technology based Monitoring - GIS Applications

Through the Project, IT/ GIS Cell would be further strengthened for undertaking GIS/ MIS operations. All the project sites and treatment areas would be geo-coded and plotted on digitized maps to be utilized for planning and analysis. It would also be important to record geographical location (GPS based coordinates) of each individual asset created under the Project for closely monitoring the work progress. Location specific inventory of assets with geo-codes would be created and photographs would be tagged to better manage the assets in future.

In addition, IT/ GIS Cell would also be capacitated of undertaking technology based analysis and related assessments utilizing both MIS and GIS tools. Details on GIS is being provided in separate section of the report.

(7) Annual Strategy Planning & Review Workshops

The strategy planning and review workshops would be organized annually at circle and state-level. At several stages during project implementation, it would be necessary to have consultations on various generic issues and areas where project may require views, collaborations and for sharing successes as well. This would also provide a good opportunity to PMU to listen to learning and best practice from outside experts, engage with like-minded people with shared interests, inspire and generate ideas and new thinking, to form new partnerships and networks, to get results and disseminate messages face to face, to initiate action and collectively bring about change, to encourage public-relation and media coverage, and to celebrate achievements.

At circle level two days event would be organized, whereas at state it would be a three days event.

PMU would be responsible to organize state level annual workshop every year, and would also follow-up with the circles for proposing Circle Annual Planning and Review Workshops every year. PMU would also guide Circles to prepare structure and agenda for the workshops.

Responsibility to organize this annual event at circle level would be with the Chief, and would be assisted by DFO (HQ) as well as the FCCU. These events would be planned during February/ March or October/ November (as per climatic conditions) in which representatives of Gram Panchayats, community institutions, NGOs, and project and forest staff would participate. The event at circle level would be chaired by the CCF.

During the circle workshops, circle heads would review the annual progress. Representatives of divisional and range offices would make presentations on achievements vis-à-vis annual plan. Performing GPs and community institutions would share their experiences and achievements vis-à-vis annual implementation plan. The efforts of performing GPs/ community institutions would be recognized by way of some citations/ awards system. The workshop will also discuss next year planning, and would take inputs from participants for preparing subsequent annual plans. The circles would prepare and submit a report on the template circulated by the PMU within a reasonable timeframe soon after completion of the event.

State level event would be organized after the circle-level workshops are concluded. Synthesis and learnings of the workshops would be compiled by PMU and published.

B) IMPACT ASSESSMENT

(1) Annual Outcome Assessments

Annual Outcome Assessments (AOAs) will focus on outcomes in context of the project outputs achieved by the Project. Framework of the AOA would be developed by PMU in assistance from PMC following the logical framework of the Project. AOA will also review APO, quarterly reports, and other reports produced during the financial year, and will include assessment on the institutional and financial performance of GPs, community institutions and NGOs as well as project divisions. This exercise would also highlight key bottlenecks and constraints where immediate remedial actions are required.

The exercise would be undertaken immediately after completion of a financial year, and would necessarily be completed during ensuing quarter every year. This could be an in-house exercise, and if required eligible and credible agency could be hired by PMU for such exercise. If required, the TOR and procurement details could be shared with JICA for information and feedbacks. Suitable assessment tools would be developed in consultation with the stakeholders, and later fine-tuned and finalised by PMU with assistance from PMC prior to the exercise.

(2) Baseline and Impact Surveys

Two set of baselines would be created prior to initiation of project interventions viz., a) socio-economic, and b) physical situations of the project areas. Information from representative target groups and project areas on identified parameters and variables would be collected by a qualified and credible agency. Based on the actual situations and after studying the field conditions, the ToR for baselines and impact surveys would be developed by PMC in consultation with PMU. The TOR

and procurement details should be shared with JICA for information and feedbacks. The baselines should necessarily be completed during the preparatory phase of the Project, and would capture gender segregated data and analysis as well.

Prior to initiation of the project interventions, baseline surveys will be undertaken in collaboration of the project units, to collect primary data on the key project indicators including gender, and following the methodology agreed with PMU. Randomized sampling design will be followed for selection of project sites/ areas or target groups. Baseline will also capture situations in control villages/ sites, and data will be utilized as reference for making comparisons during evaluations exercise. The baselines should get completed for all batch sites during first two year of project initiation.

To ensure that methodologies and approach for analysing data generated out of the surveys are comparable, as far as possible one credible and eligible agency should be identified for one type of surveys viz., a) Socio-economic, and b) Physical to be engaged at each of the stages viz., baseline, mid-term and end-term. Use of GIS technologies should be considered to further strengthen the survey information. GPS coordinates of all the sample sites should also be recorded. GIS maps of selected sample survey sites should be created, and scope for spatial analysis with associated primary survey data should also be included.

This baseline data set would be utilized for future comparisons to know the performance and impact of the project investments. The impact surveys would be planned one at mid-point (after 4th year) and end-term (after 8th year). Indicative TORs for socio-economic surveys (baseline, mid-term and end-term) are presented in **Annex 1**, and that of physical surveys are presented in **Annex 2**.

(3) Thematic and Short Studies

While the robust monitoring system planned under the Project would be helpful to provide alerts or flagging concerns to the project management during implementation, however, there would be some areas where in-depth analysis would be required to further understand the causes/ factors responsible for some situations or for getting not so satisfactory results through defined processes as envisaged. It may also happen that some project areas could be innovating and exceptionally performing well, and in-depth study would be desired to learn about the factors of success that could be utilized for further replication, adoption and dissemination. All such areas of interest could be identified from time to time by PMU based on the reviews and feedbacks from the field.

Thematic/ short studies would be undertaken as and when required to understand the issues and impact of certain interventions/ processes during the project implementations as well as document best practices and innovations identified in the Project. These studies would be for 3-4 months durations, and could be planned from 2nd year onwards till 7th year; one study per year. The TOR and procurement details should be shared with JICA for information and feedbacks.

C) AUDITS AND TRANSPARENCY

(1) Social Audits

To empower the GP members and community in decentralized planning and decision making, and to bring in transparency in the processes, a system of six-monthly social audits would be in place. This one-day event would give an opportunity to all community members to know about the project activities and raise voice, if concerns are identified, while Forest Works Committee (FWC) shares all the records, proceedings, achievement vis-à-vis annual plan, accounts, expenditure, wage-payment details, etc. in public. Other stakeholders including representatives of GP, forest department, line departments, NGOs, project/ forest staff, etc. will also participate in this event. Community institution representatives/ members and project staff at field level will receive training for systematically conducting Social Audits. PMU will develop and disseminate guidelines for conducting Social Audits. The Social Audits would be conducted twice in a year preferably during May and November each financial year at a common place. Advance announcement of dates for Social Audits to be made by office bearers to ensure maximum participation by members, particularly women.

Proceeding of the Social Audits would be compiled by FWC office bearers with assistance from project/ forest staff and NGO staff, and would submit the copy of the same to concern range and division highlighting action to be taken by respective stakeholders on identified issues. The division would compile the results/ findings of all the Social Audits and submit a report to the circle and PMU every time.

(2) Statutory Financial Audits

Project would provide support to undertake annual statutory financial audits of the funds provided to various implementing agency during a financial year. Separate bank accounts would be opened for the GPs and the project divisions/ ranges for transferring the project funds, and would be annually audited by qualified and credible CA firm(s). Indicative TOR for statutory financial audits is presented in **Annex 3**.

(3) Concurrent Audits

Beside the annual Statutory Audits, there would be a system of undertaking concurrent audits every six-months at PMU and project divisions to keep close track of funds and its utilization, and also capacitate various project offices to maintain systematic and proper records as per the JICA norms. Qualified and credible CA firms experienced in auditing externally aided projects would be engaged for concurrent audits. Indicative TOR for concurrent audits is presented in **Annex 4**.

(4) Grievance Redressal, Right to Information Act (RTI) and Public Disclosure

In democratic set-ups, it is obvious to receive grievances, and thus during the project implementation, there may be instances where there are dis-agreements and dis-satisfactions at various level of operations. To ensure proper redressal of grievances under the project there would be two systems in place to register the grievances and provide adequate solutions viz., a) Quarterly

public hearing at circle offices, and b) Six-monthly Social Audits.

Proper records of all such applications received on grievances in the office of CCF would be maintained, and status on these application would be entered in the Grievance Register after each hearing. This register would be necessarily maintained at circle level and would be regularly monitored by PMU. Similarly, at GP level, grievances would be included in the Social Audit proceedings and follow-up would be taken-up at divisional level for its redressal in a time-bound manner.

Right to Information Act (RTI) has created additional opportunities for enhancing transparency and accountability. Thus, Project will make efforts to enhance sharing and disclosure of project information and facilitate community institutions, NGO/ civil society partnership resulting in increased responsiveness. The key elements of strategy that PMU would work on must include:

- a) Enhance disclosure of information utilizing project website;
- b) Facilitate NGO/ civil society involvement for social intermediation and other support;
- c) Develop a credible system to handle comments, suggestions and grievances;
- d) Define clearly incentives, benefits and remedies available; and
- e) Develop monitoring indicators for compliance to the above

D) PERFORMANCE INDICATORS

(1) Operation and Effect Indicators

To have the basis for evaluation of effects of the interventions that may produce substantial measurable results towards end of the Project, continuous monitoring and assessment is required in the project areas, which spreads over project divisions of the state. While tracking the physical and financial progress on an on-going basis would be a critical project management requirement, monitoring the project progress towards the project goals/ objectives, and sustainability dimension of the project intervention would be of immense strategic importance.

Performance Indicators basically are measure of project progress and realization for achieving project development objectives. Sustainable forests and biological diversity management is an adaptive management process, and requires evaluations of social, economic, and ecological conditions and trends that contribute to sustainability and that, therefore, reflect achievements toward the project goals.

As per JICA Operation Indicator and Effect Indicator Reference in ODA loan projects (Evaluation Department, JICA, July 2014) “Operation indicator” is used to quantitatively measure the operation of the Project, and “Effect indicator” is used to quantitatively measure the effects of the Project. In other words, when equipment, facilities, etc. (outputs) are installed or established by the Project, (1) ‘operation’ indicator is used to measure whether or not the outputs are appropriately run and used, and (2) ‘effect’ indicator is used to measure the effects which the outputs had on the recipients and the project area.

PMU will adopt ‘operation’ and ‘effect’ indicators for tracking project progress, and update status on the indicators in the Quarterly and Annual Reports. Key Operation and Effect Indicators are given in the log frame of the Project.

Annex 1: Indicative Terms of Reference (ToR) for Socio-Economic Surveys

A. Baseline Surveys

1. Introduction/ Background

Japan International Cooperation Agency (JICA) is providing financial assistance to Government of Himachal Pradesh to implement Himachal Pradesh Forest Ecosystem Management and Livelihood Improvement Project (HP FEM&LIP) through a registered autonomous society - Project Management Unit (PMU) created by the HP Forest Department (HPFD).

The overall goal/ objective of the project is – “Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh”.

For undertaking systematic evaluation on socio-economic dimension at different stages of the project it is essential to establish baseline prior to initiating interventions that would be useful to monitor the impact of project interventions and later utilize such data for comparison of the project performance and results. The socio-economic baseline data would be compared with the similar data collected at the mid-term and end-term stages to know the changes in socio-economic profile of the beneficiaries that occurred due to project interventions. The mid-term survey would be conducted after 5th year, whereas the end-term would be conducted after 10th year.

2. Objectives of the Study

The specific objectives of baseline survey is to:

- 1) To provide information on socio-economic status and related aspects to guide the planning of activities pertaining to the household and environment;
- 2) To determine the economic dependency of people living in the survey area on forests;
- 3) To explore suitable improvement in ecosystems and conservation strategies based on current use and value attached to forests;
- 4) To provide the variables that seem to change over time resulting from the project impacts; and,
- 5) To provide a monitoring framework to assess project impact during the project mid-term review and end of project evaluation.

3. Agencies to be Engaged and Process of Selection

A qualified specialized agency or institution would be hired following prescribe project procurement guidelines. Quality and Cost Based Selection (QCBS) method would be adopted for engaging the agency/ institution. This agency would be supervised and guided by the PMU/ PMC team.

4. Target Areas

The survey would cover representative VFDSs/ BMCs selected under different batches. For baseline ‘control’ villages from non-project areas having more or less similar conditions would also be selected. Sample would be drawn from the villages falling within project divisions and ranges.

5. Approach and Methodology – Outline

The selection of project villages would be done following randomized sampling techniques. Simple random sampling will be adopted to select households to participate in the survey as respondents. A highly representative sample with low uncertainty will, under almost any realistic circumstances, be 90-100 units for population over 1000 or say approximately 10%. If the target population is less varied, which may be the case with the target population around forest areas under the project, even less than 10% sample size may be chosen. Standard survey tools like questionnaire, check-list for FGD, and interview schedule etc. will be developed and pre-tested prior to initiation of survey. List of indicators will be finalized with the PMU prior to developing the tools.

Face-to-face interviews with households will be done during the survey. Prior to initiation of survey the PMU/ PMC will orient the survey team for developing better understanding on the requirements. Training would also focus on caution need to be taken by all interviewers/ survey teams. It would be mandatory for all survey staff to attend this training/ orientation, including data entry operators and key professionals, to be deployed by the survey agency. List of villages in sample would be finalized in consultation with PMU/ PMC.

6. Duration of the Study

The survey period would be not less than 4~5 months. The duration will include surveying the identified households/ areas as per the sampling plan, data compilation and cleaning, coding and data processing, table generation, analysis and report writing.

7. Outputs expected from the Agency/ Firm and Time Schedule

The agency/ firm is expected to submit following deliverables/ outputs to PMU as per the time schedule indicated in the following table.

Report	Submission Date
<p>Inception Report Given the scope - understanding on the assignment, Approach and Methodology, survey tools, table of content/ template of the reports, Work Plan, Staff deployed along with the roles and responsibility of the Key Professionals etc. Inception report must also present the key identified baseline indicators for continuously monitoring and frequency for updating each of these indicators.</p>	Within three weeks of signing of contract; three hard copies along with electronic file.
<p>Baseline Study Reports (for all Batches) The baseline survey is expected to be completed within three months (each batch) from the date of signing of contract. The agency/ firm would inform about initiation and completion of survey work by written communication to PMU.</p>	Within one-and-half months from completion of survey work; three hard copies along with electronic file.

8. Required Human Resources Inputs

Two key positions have been indicated, however at the time of actual execution of baseline and as per the scope of the survey, team of experts could be constituted. The survey agency must deploy a three teams comprising of 3 surveyors each (2 males and one female). Each team must be supervised by a senior Supervisor who is experienced in survey supervision and trained in conducting FGDs. The Supervisor would be responsible to guide the team, ensure quality data collection, conduct FGDs in sampled villages, and document FDG findings for report. Overall team would be guided by some senior management professional of the agency.

Position	Experience	Role/ Responsibility
Team Leader (one)	Demonstrated experience of minimum 10 years in development sector, particularly in forestry and in conducting of similar studies	For overall guidance and liaison with PMU. Responsible for preparation Inception Report and Baseline Report, presentations, and other outputs of desired quality and as per time-schedule. Should devote 20% of his time in field visits to familiarise with local conditions and supervise survey.
Sociologist (one)	Sociologist/ Social Scientist with minimum of 7 years of experience in development sector / conducting similar studies/research work. Having expertise in designing socio-economic surveys tools and indicators, FGDs and other field-based data gathering techniques etc.	Assisting Team Leader and work as per direction and TOR scope. Should devote 40% of his time in field visits to familiarise with local conditions and supervise survey.
Data Analyst (one)	Demonstrated experience of minimum 5 years in analysing similar studies, having training on statistical tools and can use software like SPSS for tabulation and data analysis	Assisting Team Leader and work as per direction and TOR scope. Database creation, data management, programming, table generation/ analysis etc.
Supervisors (Three)	Demonstrated experience of some 3-4 years in conduct of assessment surveys. Familiar with rural situations and local dialect.	Supervisor with the survey agency shall be responsible for collecting information from all secondary sources and as per survey tools, and to oversee, motivate and guide the surveyors. They are required to stay with the Surveyors in villages/ survey camp established in project areas. They would also take stock of day-to-day work and shall fix targets for next day.
Surveyors (9 nos.)	Demonstrated experience of some 2 years in conduct of assessment surveys, and administering the survey schedules. Familiar with rural situations and local dialect.	Surveyors would be responsible to interview respondents using survey tools, and report to Supervisors about the day's work. They need to consult their supervisors in case they feel any difficulty. Supervisor may further refer the query to superiors in case it is not handled at his / her level.

9. Performance Evaluation of Deliverables

Project Management Unit (PMU) would review the performance of the agency/ firm and would provide acceptance to the outputs delivered as per the TOR. The progress of the survey will be monitored by the PMU officials and its field officers from time to time.

B. Mid-Term Impact Surveys

1. Introduction/ Background

Japan International Cooperation Agency (JICA) is providing financial assistance to Government of Himachal Pradesh to implement Himachal Pradesh Forest Ecosystem Management and Livelihood Improvement Project (HP FEM&LIP) through a registered autonomous society - Project Management Unit (PMU) created by the HP Forest Department (HPFD).

The overall goal/ objective of the project is – “Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh”.

After the baseline has been established during the preparatory phase of the project, prior to start of the interventions, mid-term impact survey would be undertaken after 5th year of project initiation for making comparison and recording the changes in the socio-economic parameters of the target population that are directly benefitted from the project. The framework and methodology would be the same as has been adopted at the time of creation of baseline.

2. Objectives of the Study

The specific objectives of mid-term survey is to:

- 1) To measure changes in socio-economic status and related aspects pertaining to the households and environment;
- 2) To measure changes in the economic dependency of people living in the survey area on forests;
- 3) To measure changes in improvement in ecosystems and conservation strategies based on current use and value attached to forests;
- 4) To measure the changes in the variables identified during the baseline and may have resulted in the project impacts.

3. Agencies to be Engaged and Process of Selection

A qualified specialized agency or institution would be hired following prescribe project procurement guidelines. Quality and Cost Based Selection (QCBS) method would be adopted for engaging the agency/ institution. This agency would be supervised and guided by the PMU/ PMC team.

4. Target Areas

The survey would be undertaken as per the sampling plan finalized given the set of representative VFDSs/ BMCs under different batches covered during the baseline survey. The same set of ‘control’ villages from non-project areas that were considered during the baseline would be studied.

5. Approach and Methodology – Outline

The selection of project villages would be done following randomized sampling techniques. Simple random sampling will be adopted to select households to participate in the survey as respondents. Around 50% sample villages would be covered during the mid-term, out of those covered during the baseline survey. Standard survey tools like questionnaire, check-list for FGD, and interview

schedule etc. will be developed considering the baseline data set, and pre-tested prior to initiation of survey. List of indicators that was finalized with the PMU at the baseline would be updated after the mid-term survey.

Face-to-face interviews with households will be done during the survey. Prior to initiation of survey the PMU/ PMC will orient the survey team for developing better understanding on the requirements. Training would also focus on caution need to be taken by all interviewers/ survey teams. It would be mandatory for all survey staff to attend this training/ orientation, including data entry operators and key professionals, to be deployed by the survey agency. List of villages in sample would be finalized in consultation with PMU/ PMC.

6. Duration of the Study

The survey period would be not less than 3~4 months. The duration will include surveying the identified households/ areas as per the sampling plan, data compilation and cleaning, coding and data processing, table generation, analysis and report writing.

7. Outputs expected from the Agency/ Firm and Time Schedule

The agency/ firm is expected to submit following deliverables/ outputs to PMU as per the time schedule indicated in the following table.

Report	Submission Date
<p>Inception Report Given the scope - understanding on the assignment, Approach and Methodology, survey tools, table of content/ template of the reports, Work Plan, Staff deployed along with the roles and responsibility of the Key Professionals etc. Inception report must also present the key identified at the baseline, and needs to be updated during the mid-term survey.</p>	<p>Within three weeks of signing of contract; three hard copies along with electronic file.</p>
<p>Mid-Term Study Reports (for all Batches) The baseline survey is expected to be completed within two-and-half months from the date of signing of contract. The agency/ firm would inform about initiation and completion of survey work by written communication to PMU.</p>	<p>Within one-and-half months from completion of survey work; three hard copies along with electronic file.</p>

8. Required Human Resources Inputs

Two key positions have been indicated, however at the time of the mid-term survey and as per the scope of the survey, team of experts could be constituted. The survey agency must deploy a three teams comprising of 3 surveyors each (2 males and one female). Each team must be supervised by a senior Supervisor who is experienced in survey supervision and trained in conducting FGDs. The Supervisor would be responsible to guide the team, ensure quality data collection, conduct FGDs in sampled villages, and document FDG findings for report. Overall team would be guided by some senior management professional of the agency.

Position	Experience	Role/ Responsibility
Team Leader (one)	Demonstrated experience of minimum 10 years in development sector, particularly in forestry and in conducting of similar studies	For overall guidance and liaison with PMU. Responsible for preparation Inception Report and Baseline Report, presentations, and other outputs of desired quality and as per time-schedule. Should devote 20% of his time in field visits to familiarise with local conditions and supervise survey.
Sociologist (one)	Sociologist/ Social Scientist with minimum of 7 years of experience in development sector / conducting similar studies/research work. Having expertise in designing socio-economic surveys tools and indicators, FGDs and other field-based data gathering techniques etc.	Assisting Team Leader and work as per direction and TOR scope. Should devote 40% of his time in field visits to familiarise with local conditions and supervise survey.
Data Analyst (one)	Demonstrated experience of minimum 5 years in analysing similar studies, having training on statistical tools and can use software like SPSS for tabulation and data analysis	Assisting Team Leader and work as per direction and TOR scope. Database creation, data management, programming, table generation/ analysis etc.
Supervisors (Three)	Demonstrated experience of some 3-4 years in conduct of assessment surveys. Familiar with rural situations and local dialect.	Supervisor with the survey agency shall be responsible for collecting information from all secondary sources and as per survey tools, and to oversee, motivate and guide the surveyors. They are required to stay with the Surveyors in villages/ survey camp established in project areas. They would also take stock of day-to-day work and shall fix targets for next day.
Surveyors (9 nos.)	Demonstrated experience of some 2 years in conduct of assessment surveys, and administering the survey schedules Familiar with rural situations and local dialect.	Surveyors would be responsible to interview respondents using survey tools, and report to Supervisors about the day's work. They need to consult their supervisors in case they feel any difficulty. Supervisor may further refer the query to superiors in case it is not handled at his / her level.

9. Performance Evaluation of Deliverables

Project Management Unit (PMU) would review the performance of the agency/ firm and would provide acceptance to the outputs delivered as per the TOR. The progress of the survey will be monitored by the PMU officials and its field officers from time to time.

C. End-Term Impact Surveys

1. Introduction/ Background

Japan International Cooperation Agency (JICA) is providing financial assistance to Government of Himachal Pradesh to implement Himachal Pradesh Forest Ecosystem Management and Livelihood Improvement Project (HP FEM&LIP) through a registered autonomous society - Project Management Unit (PMU) created by the HP Forest Department (HPFD).

The overall goal/ objective of the project is – “Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh”.

After the baseline and the mid-term surveys have been completed, end-term impact survey would be undertaken after 10th year of project initiation for making comparison and recording the final impact and changes in the socio-economic parameters of the target population that are directly benefitted from the project. The framework and methodology would be the same as has been adopted at the time of baseline and mid-term surveys.

2. Objectives of the Study

The specific objectives of end-term survey is to:

- 1) To measure changes in socio-economic status and related aspects pertaining to the households and environment, and compare with baseline and mid-term status;
- 2) To measure changes in the economic dependency of people living in the survey area on forests, and compare with baseline and mid-term status;
- 3) To measure changes in improvement in ecosystems and conservation strategies based on current use and value attached to forests, and compare with baseline and mid-term status;
- 4) To measure the changes in the variables identified during the baseline and may have resulted in the project impacts, and compare with baseline and mid-term status.

3. Agencies to be Engaged and Process of Selection

A qualified specialized agency or institution would be hired following prescribe project procurement guidelines. Quality and Cost Based Selection (QCBS) method would be adopted for engaging the agency/ institution. This agency would be supervised and guided by the PMU/ PMC team.

4. Target Areas

The survey would be undertaken as per the sampling plan finalized given the set of representative VFDSs/ BMCs under different batches covered during the baseline survey. The same set of ‘control’ villages from non-project areas that were considered during the mid-term would be studied.

5. Approach and Methodology – Outline

The selection of project villages would be done following randomized sampling techniques. Simple random sampling will be adopted to select households to participate in the survey as respondents. Around 50% sample villages would be covered during the end-term, out of those covered during the baseline survey. These villages may be different (or some of these may be same) from the mid-

term survey villages, as 50% of the villages are randomly selected from those surveyed for the baseline. Standard survey tools like questionnaire, check-list for FGD, and interview schedule etc. will be developed considering the baseline and mid-term survey data set, and pre-tested prior to initiation of survey. List of indicators that was finalized with the PMU at the baseline would be updated after the end-term survey, and would also be compared with the mid-term status.

Face-to-face interviews with households will be done during the survey. Prior to initiation of survey the PMU/ PMC will orient the survey team for developing better understanding on the requirements. Training would also focus on caution need to be taken by all interviewers/ survey teams. It would be mandatory for all survey staff to attend this training/ orientation, including data entry operators and key professionals, to be deployed by the survey agency. List of villages in sample would be finalized in consultation with PMU/ PMC.

6. Duration of the Study

The survey period would be not less than 3~4 months. The duration will include surveying the identified households/ areas as per the sampling plan, data compilation and cleaning, coding and data processing, table generation, analysis and report writing.

7. Outputs expected from the Agency/ Firm and Time Schedule

The agency/ firm is expected to submit following deliverables/ outputs to PMU as per the time schedule indicated in the following table.

Report	Submission Date
Inception Report Given the scope - understanding on the assignment, Approach and Methodology, survey tools, table of content/ template of the reports, Work Plan, Staff deployed along with the roles and responsibility of the Key Professionals etc. Inception report must also present the key identified at the baseline, and needs to be updated during the end-term survey and compared with the mid-term status.	Within three weeks of signing of contract; three hard copies along with electronic file.
End-term Study Reports (for all Batches) The baseline survey is expected to be completed within two-and-half months from the date of signing of contract. The agency/ firm would inform about initiation and completion of survey work by written communication to PMU.	Within one-and-half months from completion of survey work; three hard copies along with electronic file.

8. Required Human Resources Inputs

Two key positions have been indicated, however at the time of end-term survey and as per the scope of the survey, team of experts could be constituted. The survey agency must deploy a three teams comprising of 3 surveyors each (2 males and one female). Each team must be supervised by a senior Supervisor who is experienced in survey supervision and trained in conducting FGDs. The Supervisor would be responsible to guide the team, ensure quality data collection, conduct FGDs in sampled villages, and document FDG findings for report. Overall team would be guided by some senior management professional of the agency.

Position	Experience	Role/ Responsibility
Team Leader (one)	Demonstrated experience of minimum 10 years in development sector, particularly in forestry and in conducting of similar studies	For overall guidance and liaison with PMU. Responsible for preparation Inception Report and Baseline Report, presentations, and other outputs of desired quality and as per time-schedule. Should devote 20% of his time in field visits to familiarise with local conditions and supervise survey.
Sociologist (one)	Sociologist/ Social Scientist with minimum of 7 years of experience in development sector / conducting similar studies/research work. Having expertise in designing socio-economic surveys tools and indicators, FGDs and other field-based data gathering techniques etc.	Assisting Team Leader and work as per direction and TOR scope. Should devote 40% of his time in field visits to familiarise with local conditions and supervise survey.
Data Analyst (one)	Demonstrated experience of minimum 5 years in analysing similar studies, having training on statistical tools and can use software like SPSS for tabulation and data analysis	Assisting Team Leader and work as per direction and TOR scope. Database creation, data management, programming, table generation/ analysis etc.
Supervisors (Three)	Demonstrated experience of some 3-4 years in conduct of assessment surveys. Familiar with rural situations and local dialect.	Supervisor with the survey agency shall be responsible for collecting information from all secondary sources and as per survey tools, and to oversee, motivate and guide the surveyors. They are required to stay with the Surveyors in villages/ survey camp established in project areas. They would also take stock of day-to-day work and shall fix targets for next day.
Surveyors (9 nos.)	Demonstrated experience of some 2 years in conduct of assessment surveys, and administering the survey schedules Familiar with rural situations and local dialect.	Surveyors would be responsible to interview respondents using survey tools, and report to Supervisors about the day's work. They need to consult their supervisors in case they feel any difficulty. Supervisor may further refer the query to superiors in case it is not handled at his / her level.

9. Performance Evaluation of Deliverables

Project Management Unit (PMU) would review the performance of the agency/ firm and would provide acceptance to the outputs delivered as per the TOR. The progress of the survey will be monitored by the PMU officials and its field officers from time to time.

Annex 2: Indicative Terms of Reference (ToR) for Physical Surveys for the Forest Growing Stock including NTFP/ MFP species, Soil & Water quality in Project Areas

A. Baseline Surveys

1. Introduction/ Background

Japan International Cooperation Agency (JICA) is providing financial assistance to Government of Himachal Pradesh to implement Himachal Pradesh Forest Ecosystem Management and Livelihood Improvement Project (HP FEM&LIP) through a registered autonomous society - Project Management Unit (PMU) created by the HP Forest Department (HPFD).

The overall goal/ objective of the project is – “Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh”.

The objective of establishing baseline on physical parameters is to monitor the impact of the project and later use the data for comparison of project performance and results. This will help to measure the success of projects with reference to changes in the growing stock, both qualitative and quantitative. Ideally it is useful to conduct Baseline/ Benchmark survey in the beginning of the project intervention. The baseline data would be compared with the similar data collected at the mid-term and end-term stages to know the changes in physical indicators that occurred due to project interventions. The mid-term survey would be conducted after 5th year, whereas the end-term would be conducted after 10th year.

2. Objectives of the Study

The baseline survey will concentrate on the following:

- ◆ Study of growing stock in general both in natural forests and plantations, quality of forest cover under different canopy density classes and distribution of major tree species of timber in plantations. Such study will also cover forests and plantations brought under the cover of PFM.
- ◆ NTFP plantations and natural forests including improved forests. The study will also identify areas for preservation of gene pool of medicinal herbs and shrubs in different forest types distributed in the selected tracts.
- ◆ Assessment of potential production of important NTFPs, the collection and processing of NTFPs which can significantly add to the enhancement of income beyond the project period.

Some of the aspects that should be covered under physical parameters for baseline survey, but not limiting to, include followings:

- ◆ Stock assessment – Total number, DBH, Height, Density
- ◆ Survival and growth of planted trees
- ◆ Quantitative and qualitative assessment of the forest produce
- ◆ Potential production of important NTFPs
- ◆ Identification of areas for preservation of gene pool of medicinal herbs and shrubs

- ◆ Carbon sequestration
- ◆ Groundwater level assessment and Water quality
- ◆ Soil characteristics , soil erosion and fertility

3. Agencies to be Engaged and Process of Selection

A qualified specialized agency or institution would be hired following prescribe project procurement guidelines. Quality and Cost Based Selection (QCBS) method would be adopted for engaging the agency/ institution. This agency would be supervised and guided by the PMU/ PMC team.

4. Target Areas

The survey would cover representative VFDSs/ BMCs selected under different batches. At the baseline ‘Long-term Ecological Monitoring (LTEM)’ plots would also be selected and geo-coded for data collection in future. Sample would be drawn from the forest areas falling within project divisions and ranges.

5. Approach and Methodology – Outline

Changes in forest condition are likely to be slow and gradual, with improvements in overall basal area density being around one per cent or less per year. The Long-term Ecological Monitoring (LTEMs) plots would be utilized for baseline data collection and for impact assessment, and thus one need to focus on parameters that are measurable and attributable to changes in forest composition reasonably expected within the lifespan of the project. Baseline would concentrate on creating status of the exiting situations in the project areas where interventions are being planned and implemented in coming years. This information set would be later utilized for detecting changes in populations of young and pole stage trees, herbs, shrubs, grasses, bamboo etc. The field based information would be incorporated in GIS platform using GPS based location coordinate information. This information can be utilized anytime for mapping activity using satellite based information. The selection of plots or survey tracts would be done following randomized sampling techniques.

Related studies indicate that the most significant and measurable changes can be anticipated in short period is in the <5 cm DBH size class and 5-10 cm DBH size class in terms of their overall representation (stems per hectare), and the occurrence of economic species within these classes. Changes will be more measurable in moderately open forest (40% ~ 70% canopy cover) and open forest (<40 % canopy cover), and rather less in densely stocked forest (>70 per cent canopy closure). Thus, one need to pay particular attention to detecting small changes in populations of young trees of economic species. This requires the use of LTEM plots that can be precisely relocated and measured again after a 4-5 years gap.

6. Duration of the Study

The survey period would be not less than 5~6 months. The duration will include surveying the identified households/ areas as per the sampling plan, data compilation and cleaning, coding and data processing, table generation, analysis and report writing.

7. Outputs expected from the Agency/ Firm and Time Schedule

The agency/ firm is expected to submit following deliverables/ outputs to PMU as per the time schedule indicated in the following table.

Report	Submission Date
Inception Report Given the scope - understanding on the assignment, Approach and Methodology, survey tools, table of content/ template of the reports, Work Plan, Staff deployed along with the roles and responsibility of the Key Professionals etc. Inception report must also present the key identified baseline indicators for continuously monitoring and frequency for updating each of these indicators.	Within three weeks of signing of contract; three hard copies along with electronic file.
Baseline Study Reports (for all Batches) The baseline survey is expected to be completed within four months (each batch) from the date of signing of contract. The agency/ firm would inform about initiation and completion of survey work by written communication to PMU.	Within one-and-half months from completion of survey work; three hard copies along with electronic file.

8. Required Human Resources Inputs

Three key positions have been indicated, however at the time of actual execution of baseline and as per the scope of the survey, team of experts could be constituted. Overall team would be guided by some senior management professional of the agency.

Position	Experience	Role/ Responsibility
Team Leader (one)	Demonstrated experience of minimum 10 years in development sector, particularly in forestry and in conducting of similar studies	For overall guidance and liaison with PMU. Responsible for preparation Inception Report and Baseline Report, presentations, and other outputs of desired quality and as per time-schedule. Should devote 30% of his time in field visits to familiarise with local conditions and supervise survey.
Forester/ Surveyor (one)	Demonstrative experience of minimum of 5 years for laying permanent plots/ similar studies/research work.	Assisting Team Leader and work as per direction and TOR scope. Would establish LTEM plots with the help of team and Forest staff at field level. He would also guide the survey team in data collection. Should devote 70% of his time in field visits to familiarise with local conditions and supervise survey.
GIS Specialist (one)	Demonstrated experience of minimum 3 years in analysing similar studies, having training on GIS tools and can use GIS software for data analysis/ producing outputs	Assisting Team Leader and work as per direction and TOR scope. He would geo-tag/ reference the LTEM plots. Database creation, data management, programming, map generation/ analysis etc.
Survey Team (6-9 nos.)	Demonstrated experience of some 3-4 years in conduct of forest baseline surveys and data collection, and preferably having forestry background. Familiar with rural situations and local dialect.	Shall be responsible for collecting information from all secondary/ primary sources and as per survey tools.

9. Performance Evaluation of Deliverables

Project Management Unit (PMU) would review the performance of the agency/ firm and would provide acceptance to the outputs delivered as per the TOR. The progress of the survey will be monitored by the PMU officials and its field officers from time to time.

B. Mid-term Impact Surveys

1. Introduction/ Background

Japan International Cooperation Agency (JICA) is providing financial assistance to Government of Himachal Pradesh to implement Himachal Pradesh Forest Ecosystem Management and Livelihood Improvement Project (HP FEM&LIP) through a registered autonomous society - Project Management Unit (PMU) created by the HP Forest Department (HPFD).

The overall goal/ objective of the project is – “Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh”.

The objective of undertaking the mid-term survey would be to measure changes in the growing stock, both qualitative and quantitative, along with other physical parameters for which the baseline has been created. The mid-term survey would be conducted after 5th year of project initiation. This will help to measure the success of projects with reference to changes in physical indicators that occurred due to project interventions.

2. Objectives of the Study

The mid-term survey will concentrate on the following:

- ◆ To measure changes in the growing stock in general both in natural forests and plantations, quality of forest cover under different canopy density classes and distribution of major tree species of timber in plantations. Such survey will also cover forests and plantations brought under the cover of PFM.
- ◆ To measure changes in the NTFP plantations and natural forests including improved forests. The survey will also measure changes in the areas for preservation of gene pool of medicinal herbs and shrubs in different forest types distributed in the selected tracts.
- ◆ To measure changes in the potential production of important NTFPs, the collection and processing of NTFPs which can significantly add to the enhancement of income beyond the project period.

Some of the aspects that should be covered to measure changes under physical parameters for mid-term survey, but not limiting to, include followings:

- ◆ Stock assessment – Total number, DBH, Height, Density
- ◆ Survival and growth of planted trees
- ◆ Quantitative and qualitative assessment of the forest produce
- ◆ Potential production of important NTFPs
- ◆ Identification of areas for preservation of gene pool of medicinal herbs and shrubs
- ◆ Carbon sequestration
- ◆ Groundwater level assessment and Water quality
- ◆ Soil characteristics , soil erosion and fertility

3. Agencies to be Engaged and Process of Selection

A qualified specialized agency or institution would be hired following prescribe project procurement guidelines. Quality and Cost Based Selection (QCBS) method would be adopted for

engaging the agency/ institution. This agency would be supervised and guided by the PMU/ PMC team.

4. Target Areas

The survey would cover representative VFDSs/ BMCs selected under different batches. The sampling plan and the sample size would be finalized based on the sites covered for the baseline. During the mid-term survey, already established/ identified ‘Long-term Ecological Monitoring (LTEM)’ plots would also be surveyed for data collection. Sample would be drawn from the forest areas already identified and surveyed during the baseline from within the project divisions and ranges.

5. Approach and Methodology – Outline

Changes in forest condition are likely to be slow and gradual, with improvements in overall basal area density being around one per cent or less per year. The Long-term Ecological Monitoring (LTEMs) plots would be utilized for data collection at mid-term stage as well for impact assessment based on the parameters that are measurable and attributable to changes in forest composition reasonably expected within the lifespan of the project. Mid-term survey would concentrate to measure changes in the existing situations in the project areas where interventions are being planned and implemented during the past 5 years. This information set would be utilized for detecting changes in populations of young and pole stage trees, herbs, shrubs, grasses, bamboo etc. The field based information would be incorporated in GIS platform using GPS based location coordinate information. This information will be utilized to make comparison with baseline stage, and for mapping activity using satellite based information. The selection of plots or survey tracts would be done following randomized sampling techniques. The mid-term survey would adopt the same methodology as has been adopted during the baseline so that the findings are comparable.

6. Duration of the Study

The survey period would be not less than 4~5 months. The duration will include surveying the identified households/ areas as per the sampling plan, data compilation and cleaning, coding and data processing, table generation, analysis and report writing.

7. Outputs expected from the Agency/ Firm and Time Schedule

The agency/ firm is expected to submit following deliverables/ outputs to PMU as per the time schedule indicated in the following table.

Report	Submission Date
<p>Inception Report Given the scope - understanding on the assignment, Approach and Methodology, survey tools, table of content/ template of the reports, Work Plan, Staff deployed along with the roles and responsibility of the Key Professionals etc. Inception report must also compare the key indicators identified at baseline for updating and comparison.</p>	<p>Within three weeks of signing of contract; three hard copies along with electronic file.</p>
<p>Mid-term Study Reports (for all Batches) The mid-term survey is expected to be completed within three and half months from the date of signing of contract. The agency/ firm would inform about initiation and completion of survey work by written communication to PMU.</p>	<p>Within one-and-half months from completion of survey work; three hard copies along with electronic file.</p>

8. Required Human Resources Inputs

Three key positions have been indicated, however at the time of actual execution of mid-term survey and as per the scope of the survey, team of experts could be constituted. Overall team would be guided by some senior management professional of the agency.

Position	Experience	Role/ Responsibility
Team Leader (one)	Demonstrated experience of minimum 10 years in development sector, particularly in forestry and in conducting of similar studies	For overall guidance and liaison with PMU. Responsible for preparation Inception Report and Baseline Report, presentations, and other outputs of desired quality and as per time-schedule. Should devote 30% of his time in field visits to familiarise with local conditions and supervise survey.
Forester/ Surveyor (one)	Demonstrative experience of minimum of 5 years for laying permanent plots/ similar studies/research work.	Assisting Team Leader and work as per direction and TOR scope. Would establish LTEM plots with the help of team and Forest staff at field level. He would also guide the survey team in data collection. Should devote 70% of his time in field visits to familiarise with local conditions and supervise survey.
GIS Specialist (one)	Demonstrated experience of minimum 3 years in analysing similar studies, having training on GIS tools and can use GIS software for data analysis/ producing outputs	Assisting Team Leader and work as per direction and TOR scope. He would geo-tag/ reference the LTEM plots. Database creation, data management, programming, map generation/ analysis etc.
Survey Team (6-9 nos.)	Demonstrated experience of some 3-4 years in conduct of forest baseline surveys and data collection, and preferably having forestry background. Familiar with rural situations and local dialect.	Shall be responsible for collecting information from all secondary/ primary sources and as per survey tools.

9. Performance Evaluation of Deliverables

Project Management Unit (PMU) would review the performance of the agency/ firm and would provide acceptance to the outputs delivered as per the TOR. The progress of the survey will be monitored by the PMU officials and its field officers from time to time.

C. End-term Impact Surveys

1. Introduction/ Background

Japan International Cooperation Agency (JICA) is providing financial assistance to Government of Himachal Pradesh to implement Himachal Pradesh Forest Ecosystem Management and Livelihood Improvement Project (HP FEM&LIP) through a registered autonomous society - Project Management Unit (PMU) created by the HP Forest Department (HPFD).

The overall goal/ objective of the project is – “Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh”.

The objective of undertaking the end-term survey would be to measure changes in the growing stock, both qualitative and quantitative, along with other physical parameters for which the baseline and mid-term status has been created. The end-term survey would be conducted after 5 years from mid-term assessment or 10th year of project initiation. This will help to measure the success of projects with reference to changes in physical indicators that occurred due to project interventions.

2. Objectives of the Study

The end-term survey will concentrate on the following:

- ◆ To measure changes in the growing stock in general both in natural forests and plantations, quality of forest cover under different canopy density classes and distribution of major tree species of timber in plantations. Such survey will also cover forests and plantations brought under the cover of PFM.
- ◆ To measure changes in the NTFP plantations and natural forests including improved forests. The survey will also measure changes in the areas for preservation of gene pool of medicinal herbs and shrubs in different forest types distributed in the selected tracts.
- ◆ To measure changes in the potential production of important NTFPs, the collection and processing of NTFPs which can significantly add to the enhancement of income beyond the project period.

Some of the aspects that should be covered to measure changes under physical parameters for end-term survey, but not limiting to, include followings:

- ◆ Stock assessment – Total number, DBH, Height, Density
- ◆ Survival and growth of planted trees
- ◆ Quantitative and qualitative assessment of the forest produce
- ◆ Potential production of important NTFPs
- ◆ Identification of areas for preservation of gene pool of medicinal herbs and shrubs
- ◆ Carbon sequestration
- ◆ Groundwater level assessment and Water quality
- ◆ Soil characteristics , soil erosion and fertility

3. Agencies to be Engaged and Process of Selection

A qualified specialized agency or institution would be hired following prescribe project procurement guidelines. Quality and Cost Based Selection (QCBS) method would be adopted for engaging the agency/ institution. This agency would be supervised and guided by the PMU/ PMC team.

4. Target Areas

The survey would cover representative VFDSs/ BMCs selected under different batches. The sampling plan and the sample size would be finalized based on the sites covered for the baseline as well as mid-term survey. During the end-term survey, already established/ identified 'Long-term Ecological Monitoring (LTEM)' plots would also be surveyed for data collection. Sample would be drawn from the forest areas already identified and surveyed during the baseline and mid-term from within the project divisions and ranges.

5. Approach and Methodology – Outline

Changes in forest condition are likely to be slow and gradual, with improvements in overall basal area density being around one per cent or less per year. The Long-term Ecological Monitoring (LTEMs) plots would be utilized for data collection at end-term stage as well for impact assessment based on the parameters that are measurable and attributable to changes in forest composition reasonably expected within the lifespan of the project. End-term survey would concentrate to measure changes in the exiting situations in the project areas where interventions are being planned and implemented during the past 5 years. This information set would be utilized for detecting changes in populations of young and pole stage trees, herbs, shrubs, grasses, bamboo etc. The field based information would be incorporated in GIS platform using GPS based location coordinate information. This information will be utilized to make comparison with baseline and mid-term status, and for mapping activity using satellite based information. The selection of plots or survey tracts would be done following randomized sampling techniques. The end-term survey would adopt the same methodology as has been adopted during the baseline and mid-term so that the findings are comparable.

6. Duration of the Study

The survey period would be not less than 4~5 months. The duration will include surveying the identified households/ areas as per the sampling plan, data compilation and cleaning, coding and data processing, table generation, analysis and report writing.

7. Outputs expected from the Agency/ Firm and Time Schedule

The agency/ firm is expected to submit following deliverables/ outputs to PMU as per the time schedule indicated in the following table.

Report	Submission Date
Inception Report Given the scope - understanding on the assignment, Approach and Methodology, survey tools, table of content/ template of the reports, Work Plan, Staff deployed along with the roles and responsibility of the Key Professionals etc. Inception report must also compare the key indicators identified at baseline and mid-term for updating and comparison.	Within three weeks of signing of contract; three hard copies along with electronic file.
End-term Study Reports (for all Batches) The mid-term survey is expected to be completed within three and half months from the date of signing of contract. The agency/ firm would inform about initiation and completion of survey work by written communication to PMU.	Within one-and-half months from completion of survey work; three hard copies along with electronic file.

8. Required Human Resources Inputs

Three key positions have been indicated, however at the time of actual execution of end-term survey and as per the scope of the survey, team of experts could be constituted. Overall team would be guided by some senior management professional of the agency.

Position	Experience	Role/ Responsibility
Team Leader (one)	Demonstrated experience of minimum 10 years in development sector, particularly in forestry and in conducting of similar studies	For overall guidance and liaison with PMU. Responsible for preparation Inception Report and Baseline Report, presentations, and other outputs of desired quality and as per time-schedule. Should devote 30% of his time in field visits to familiarise with local conditions and supervise survey.
Forester/ Surveyor (one)	Demonstrative experience of minimum of 5 years for laying permanent plots/ similar studies/research work.	Assisting Team Leader and work as per direction and TOR scope. Would establish LTEM plots with the help of team and Forest staff at field level. He would also guide the survey team in data collection. Should devote 70% of his time in field visits to familiarise with local conditions and supervise survey.
GIS Specialist (one)	Demonstrated experience of minimum 3 years in analysing similar studies, having training on GIS tools and can use GIS software for data analysis/ producing outputs	Assisting Team Leader and work as per direction and TOR scope. He would geo-tag/ reference the LTEM plots. Database creation, data management, programming, map generation/ analysis etc.
Survey Team (6-9 nos.)	Demonstrated experience of some 3-4 years in conduct of forest baseline surveys and data collection, and preferably having forestry background. Familiar with rural situations and local dialect.	Shall be responsible for collecting information from all secondary/ primary sources and as per survey tools.

9. Performance Evaluation of Deliverables

Project Management Unit (PMU) would review the performance of the agency/ firm and would provide acceptance to the outputs delivered as per the TOR. The progress of the survey will be monitored by the PMU officials and its field officers from time to time.

Annex 3: Terms of Reference (ToR) for Statutory Financial Audits

1. Introduction/ Background

Japan International Cooperation Agency (JICA) is providing financial assistance to Government of Himachal Pradesh to implement Himachal Pradesh Forest Ecosystem Management and Livelihood Improvement Project (HP FEM&LIP) through a registered autonomous society - Project Management Unit (PMU) created by the HP Forest Department (HPFD).

The overall goal/ objective of the project is – “Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh”.

According to the Society Registration Act, a society is required to undertake a statutory annual audit conducted by a Chartered Accountant (CA). Thus, annual statutory audits by CA would be carried out for the accounts of PMU, and if required further investigate the project accounts at the divisions and with the community level institutions.

2. Objectives of the Study

The specific objectives of financial audits is to:

- 1) To comply with the government laws and regulations;
- 2) To establish financial discipline and control;
- 3) To supply annual Audited Reports to JICA to confirm the reimbursement claims.

3. Agencies to be Engaged and Process of Selection

A qualified specialized agency or institution would be hired following prescribe project procurement guidelines. Quality and Cost Based Selection (QCBS) method would be adopted for engaging the agency/ institution. Multiple CA firms could be hired for auditing the VFDS/ BMC project accounts. One CA Firm will be hired exclusively to audit PMU and DMU accounts.

4. Target Locations

All key accounting locations where the project funds are extended for implementation/ execution of works viz., PMU, DMUs and VFDSs/ BMCs selected under the project.

5. Outline of the Tasks/ Scope of Assignment

- 1) To carry out statutory audit at PMU, DMU and VFDS/ BMC levels immediately after the close of financial year.
- 2) Thoroughly check all the financial transaction, and confirming that transactions are properly recorded as per financial and accounting rules/ system.
- 3) To check all major payments, tenders and their administrative & financial approval.
- 4) To check proper accounting/indenting of stores, inventory, physical verification of all inventory and reconciliation and neutralization of difference as per accounts and as per the physical verification.
- 5) To check that fixed asset register is updated at the time of capitalization/purchase/disposal of assets and location/situation of each fixed assets is properly reflected in the register. To check

proper accounting entries in cases where assets have been declared obsolete/ unserviceable/ buyback. Status of physical verification and proper identification on fixed assets.

Reconciliation of fixed asset register with financial records and difference if any between the two figures be rectified.

- 6) To check bank reconciliation statement of the bank account and passing of adjustment entries;
- 7) To check the log books of the vehicles;
- 8) Any other item relevant to the work of auditing and also to look into the other financial matters related to the project implementation;
- 9) Preparations, Compilation and Certification of Annual Accounts to ensure their arithmetical accuracy as well as its presentation according to the Uniform Format for Autonomous Bodies issued by Comptroller General of Accounts, New Delhi/ JICA.

6. Duration of the Study

The audit period would be not less than 2~3 months. The duration will include visiting all project accounting locations and preparing audit report.

7. Outputs expected from the Agency/ Firm and Time Schedule

Audit Report on standard auditing format applicable for externally aided projects. In addition, suggestion will be provided for improving and strengthening accounting and financial discipline.

8. Required Human Resources Inputs

Based on the volume of work/ accounting locations and number of VFDS/ BMC, duration of the audit would be fixed by PMU at the time of contract.

9. Performance Evaluation of Deliverables

Project Management Unit (PMU) would review the performance of the CA firm and would provide acceptance to the outputs delivered as per the TOR.

Annex4: Terms of Reference (ToR) for Concurrent Financial Audits

1. Introduction/ Background

Japan International Cooperation Agency (JICA) is providing financial assistance to Government of Himachal Pradesh to implement Himachal Pradesh Forest Ecosystem Management and Livelihood Improvement Project (HP FEM&LIP) through a registered autonomous society - Project Management Unit (PMU) created by the HP Forest Department (HPFD).

The overall goal/ objective of the project is – “Ecosystems services from forest areas are improved for sustainable socio-economic development in the state of Himachal Pradesh”.

To establish internal financial discipline and control, concurrent audits would be instituted by PMU, quarterly or biannually. Such concurrent audits would be regularly reviewed by GB.

2. Objectives of the Study

The specific objectives of financial audits is to:

- 1) To build the capacities of the key stakeholders to ensure proper accounting and book keeping;
- 2) To keep close track of funds and its utilization, and to establish financial discipline and control;
- 3) Preparatory exercise to prepare error-free Statement of Expenditures (SOEs) and file accurate reimbursement claims with JICA/ CAAA.

3. Agencies to be Engaged and Process of Selection

A qualified specialized agency or institution would be hired following prescribe project procurement guidelines. Quality and Cost Based Selection (QCBS) method would be adopted for engaging the agency/ institution. One CA Firm will be hired exclusively to conduct concurrent audit of PMU and DMU accounts every six-months.

4. Target Locations

All key accounting locations where the project funds are extended for implementation/ execution of works viz., PMU and DMUs under the project.

5. Outline of the Tasks/ Scope of Assignment

- 1) To carry out internal audit biannually and report during the financial year;
- 2) To formulate system and procedure, where ever required so that proper accounting and books of accounts are maintained;
- 3) Thoroughly check all the financial transaction, and confirming that transactions are properly recorded as per financial and accounting rules/ system.
- 4) To check all major payments, tenders and their administrative & financial approval.
- 5) To check posting of entries in the Cash Book, Journal and General Ledger and to guide the staff to write these books, in case any deficiencies are observed;
- 6) To check proper accounting/indenting of stores, inventory, physical verification of all inventory and reconciliation and neutralization of difference as per accounts and as per the physical verification.

- 7) To check that fixed asset register is updated at the time of capitalization/purchase/disposal of assets and location/situation of each fixed assets is properly reflected in the register. To check proper accounting entries in cases where assets have been declared obsolete/ unserviceable/ buyback. Status of physical verification and proper identification on fixed assets.
Reconciliation of fixed asset register with financial records and difference if any between the two figures be rectified.
- 8) To check preparation of bank reconciliation statement of the bank account and passing of adjustment entries;
- 9) To check the log books of the vehicles;
- 10) To check if proper compliances of deductions of TDS and payments of taxes as per Income Tax and GST regulations are being made;
- 11) To check if filing of Tax Returns both for Income Tax and GST as per financial transactions are being done regularly and in timely manner;
- 12) To settle the cases if it falls under scrutiny in the Income Tax department and/ or GST
- 13) To check preparation, reconciliation and issuance of Utilization Certificates (UCs) and Statement of Expenditures (SoEs) for their onward submission to JICA and CAAA, Govt. of India, New Delhi;
- 14) To provide clarifications/replies to the queries raised by the Statutory Auditors and all concerned;
- 15) Any other item relevant to the work of auditing and also to look into the other financial matters related to the project implementation;

6. Duration of the Study

The audit period would be not less than 2~3 months every six-months. The duration will include visiting all project accounting locations and preparing audit report.

7. Outputs expected from the Agency/ Firm and Time Schedule

Audit Report on standard auditing format applicable for externally aided projects. In addition, suggestion will be provided for improving and strengthening accounting and financial discipline.

8. Required Human Resources Inputs

Based on the volume of work/ accounting locations, duration of the audit would be fixed by PMU at the time of contract.

9. Performance Evaluation of Deliverables

Project Management Unit (PMU) would review the performance of the CA firm and would provide acceptance to the outputs delivered as per the TOR.

Attachment II.3.7.4.7 TOR for Basic Study for Strengthening of ICT at HPFD

1. Introduction

MIS, GIS and other ICT related activities and their outputs to be produced under the Project are expected to be expanded and to be utilised at entire HPFD. Such transfer of project's assets and resources to entire HPFD is planned to be conducted at the Phase-out phase of the Project and onward. However, in order to make such transfer more effectively and practical to be used by the entire HPFD, a study which enable trial usages of project base MIS/GIS/ICT in non-project divisions and preparation of an improvement plan to reflect lessons from the trial usages i) in existing project GIS/MIS/ICT, and ii) for future usages by the entire HPFD.

2. Objectives

The objectives of the study are to;

- ◆ Assess the applicability of the MIS, GIS and other ICT related methodologies under the Project for further updates in more effective and realistic ways, and
- ◆ Recommend toward future expansion of the project based systems into the entire HPFD

3. Agencies to be engaged and Process of Selection

The PMU will request the listed institutions for submission of proposals to conduct the study as an outsourced work. The procurement committee or a special committee constituted at the PMU level with representatives from HPFD, PMC and external experts will evaluate the proposals and commission the task to the eligible institution.

4. Target Area

Non-Project divisions (at least one division each from territorial divisions and wildlife divisions)

5. Approach and Methodology

5.1 Trial Application of the Project GIS/ MIS /Mobile Applications and Other Developed ICT Methodologies

The actual trial application can be conducted by officers/staff of selected divisions, however, the outsourced agency shall support the trial activities for its smooth implementation. If required, initial trainings for officers/staff of selected divisions shall be designed and provided which needs to be finalised together with PMU/ PMC.

5.2 Review and Assess the Trials and Develop Improvement Plans

The outsourced agency shall review and analyse the results of the trial applications and assess advantages and disadvantages of current adopted methodologies under the Project. Feedback or suggestions from officers/staff from the selected divisions as well as PMC or external experts shall also be compiled. Accordingly, the agency shall prepare a review and assessment report including the improvement plans.

5.3 Update the Existing Methodologies of GIS/MIS/ICT based on Improvement Plans

The outsourced agency shall organise a consultation meeting with PMU/ PMC to finalise the submitted Improvement Plans. Following the approved plan by PMU, applicable interventions shall be made mainly by the concerned staffs/specialists of PMU for the GIS/MIS/ICT updates.

5.4 Recommendation Toward the Application in Entire HPFD

After preparing the review and assessment report as described in section 5.3, the outsourced agency shall prepare a report on recommendation for expanding the project based systems to entire HPFD which to be conducted at the Phase-out phase of the Project and onward.

5. Duration

The overall study shall be completed within two and a half years, including one year for trial application of the project GIS/ MIS/ ICT methodologies and four months for training (if required). This study shall be initiated in the middle of the project period after the project GIS/MIS/ICT are developed.

6. Outputs

- a) Review and assessment report of the trial activities including Improvement Plans, and
- b) Report on recommendation toward the application in entire HPFD

7. Required Human Resource Input

Indicative human resource inputs required are indicated in **Table 1** below.

Table 1 Indicative Human Resource Inputs for the Proposed Study

No.	Activity	Input
1	Trial Application of the Project GIS/ MIS /Mobile Applications and Other Developed ICT Methodologies	Input: 2 experts Duration: 16 months (4 months for training (if required), 12 months for trial)
2	Review and Assess the Trials and Develop Improvement Plans	Input: 2 experts Duration: 5 months
3	Update the Existing Methodologies of GIS/MIS/ICT based on Improvement Plans	Input: 2 experts and 2 assistants Duration: 8 months
4	Recommendation Toward the Application in Entire HPFD	Input: 2 experts Duration: 1 month

Source: JICA Study Team (2017)

END

Attachment II.3.7.4.8 Terms of Reference for Project Management Consultant for Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

Terms of Reference for Project Management Consultant for Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project

Chapter 1. Background

- The Government of Himachal Pradesh has received a loan from the Japan International Cooperation Agency (hereinafter referred to as "JICA") to finance the Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement (hereinafter referred to as "the Project") which is to enhance sustainable management of ecosystems of forests in the project area.
- The outline of the Project is as follows:
 - Executing Agency: Project Management Unit (PMU) for the Project, Himachal Pradesh Forest Ecosystem Management Society(HPFEMS)
 - Location of the Project: 17 territorial divisions (Bilaspur, Mandi, Nachan, Suket, Jogindernagar, Kullu, Parbati, Banjar (Seraji), Anni, Lahaul, Kinnaur, Shimla, Theog, Rohru, Chopal, Kotgarh, and Rampur) and 2 wildlife divisions (Kullu Wildlife and Spiti Wildlife)
 - The Project is expected to be completed by 2028.
- At this moment, the Project is expected to comprise of the following components:

Components	Main Activities
Component 1: Sustainable Forest Ecosystem Management	1) Preparatory Works for Participatory Forest Management (PFM) 2) PFM Mode 3) Training of VFDS 4) Department Mode 5) Training of Project related Staff of HPFD 6) Research
Component 2: Sustainable Biodiversity Management	1) Scientific Biodiversity Management <ul style="list-style-type: none"> ➤ Preparatory Works ➤ Protected area management improvement in core zone and buffer zone ➤ Human-wildlife conflict mitigation/management ➤ Wildlife habitat improvement ➤ Recovery programmes for endangered wildlife 2) Training of Project related Staff of HPFD 3) Research 4) Community Based Biodiversity Management <ul style="list-style-type: none"> ➤ Preparatory Works ➤ Community Based Biodiversity Management ➤ SATOYAMA based Biodiversity Conservation Activities 5) Training of BMC and sub-committee
Component 3: Livelihoods Improvement Support	1) Community Development <ul style="list-style-type: none"> ➤ Preparation of CD&LIP ➤ Transfer of Funds ➤ Implementation of CD activities ➤ Training Programmes for Community Development ➤ Research: Pilot Project on Hydro Cultural Fodder Production 2) NTFP based livelihood improvement

	<ul style="list-style-type: none"> ➤ Preparatory Works ➤ NTFP Cluster and Enterprise Development ➤ NTFP Research & Development ➤ NTFP Cultivation ➤ NTFP Market Research and ➤ Training and Extension <p>3) Non-NTFP based livelihood improvement</p> <ul style="list-style-type: none"> ➤ Preparation of Livelihood Improvement Strategy and Plan ➤ Preparation of CD&LIP ➤ Formation/ Reviving CIVs/ SHGs ➤ Implementation of Household/ Community level livelihood improvement ➤ Promotion of Cluster based livelihood activities ➤ Training Programmes for Livelihood Improvement ➤ Capacity Development for CIGs/ SHGs and Cluster Based Organisations
<p>Component 4: Institutional Capacity Strengthening</p>	<ol style="list-style-type: none"> 1) Preparatory Works 2) Capacity Development 3) M&E 4) (Research: Basic Study for Strengthening of ICT at HPFD) 5) PMC 6) Phase out

■ The Government of Himachal Pradesh intends to use a part of the proceeds of the loan for eligible payments for consulting services for which this ToR is issued.

■ Technical information: available relevant basic data and studies, technical standard or specifications to be used, etc.

■ Related projects: Swan River Integrated Watershed Management Project, Forest Ecosystem Climate Proofing Project, Mid-Himalayan Watershed Management Project

Chapter 2. Objectives of Consulting Services

The consulting services shall be provided by an international consulting firm (hereinafter referred to as "the Consultant") in compliance with Guidelines for the Employment of Consultants under Japanese ODA Loans, April 2012. The objective of the consulting services is to assist the Project Management Unit of the Project (hereinafter referred to as PMU) established at HPFEMS in implementation of the project activities by providing the following services:

- (1) Assistance in the management of the project
- (2) Technical assistance in the implementation of the project components/activities in an efficient and effective manner
- (3) Facilitation of implementation of Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP)
- (4) Technology Transfer

Chapter 3. Scope of Consulting Services

(1) Assistance in the management of the project

The Consultant shall:

- (a) Assist PMU in managing the project in an effective and efficient manner.
- (b) Assist PMU in periodical monitoring of the project activities with the monitoring formats and improving the project design, framework, and systems based on the monitoring data stored in the GIS-based monitoring system.
- (c) Assist PMU in preparing annual work and budget plans based on the appropriate estimation of work quantity as well as unit costs of the respective inputs.
- (d) Assist PMU in enhancing the capacity of stakeholders in sustainable forest and biodiversity management
- (e) Assist PMU in procuring the necessary small equipment for the project implementation.
- (f) Assist PMU in the proper fund management and smooth communication/coordination with JICA.
- (g) Assist PMU in providing guidance and orientation to FCCUs, DMUs, FTUs and other specialized agencies for implementation of the projects.
- (h) Assist PMU in preparing TORs for the project activities to be outsourced to the contractors.
- (i) Assist PMU in monitoring and supervising the works undertaken specialized agencies to secure the expected outputs.
- (j) Assist PMU in designing and developing information dissemination project materials.
- (k) Assist PMU in monitoring the progress of the project, assessing the results and effects of the project activities, solving any issues and problems that might hinder the effective and efficient operations of the project, and draw lessons learned from the implementation of the project over the course of the project.
- (l) Assist PMU in reporting any matters to JICA.

(2) Technical assistance in the implementation of the project components/ activities in an efficient and effective manner

The Consultant Shall

- (a) Assist PMU in designing participatory forest management component and capacity building sub-component of VFDSs
- (b) Assist PMU in designing community based biodiversity management sub-component
- (c) Assist PMU in implementing Community Development and Livelihood Activities
- (d) Assist PMU in ensuring Gender Mainstreaming
- (e) Assist FCCUs/DMUs / FTUs to strengthen their technical, managerial, and administrative capacities for implementation and management of the project.
- (f) Assist PMU/ FCCUs/DMUs / FTUs in providing orientation, technical guidance, and advice to specialized agencies for the effective implementation of the project activities.
- (g) Assist PMU in developing a GIS-based monitoring system and operationalize at the divisional and

range levels with a user friendly database and simplified monitoring formats necessary for regular monitoring.

- (h) Assist PMU/ FCCUs/DMUs / FTUs in improving the monitoring system by periodically checking the use of the system.
- (i) Assist PMU in monitoring the planning process of VFDS/BMC
- (j) Assist PMU in preparing the phase-out strategies
- (k) Assist PMU in developing guidelines and manuals relevant to implementation of the project
- (l) Assist PMU/ / FCCUs/DMUs / FTUs and other relevant stakeholders in ensuring that local communities could obtain the maximum benefit from the project activities and forest management activities in the post project period.
- (m) Assist PMU in preparing and submitting the plans to JICA for approval.
- (n) Provide technical assistance to PMU/ FCCUs/DMUs / FTUs and other specialized agencies.

(3) Facilitation of implementation of Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP)

The Consultant shall:

- (a) Assist PMU in reviewing and updating the environmental management and monitoring plans based on the Environmental and Social Assessment Framework.
- (b) Assist PMU in introducing the project outline including potential environmental and social issues to local communities residing in the target communes through public consultations;
- (c) Assist PMU in reviewing and supervising the contractors' environmental protection/management plans to be prepared by the contractors in accordance with EMP and make recommendations to PMU regarding any necessary amendments for its approval;
- (d) Assist PMU in ensuring that the measures identified in the EMP are implemented;
- (e) Assist PMU in monitoring the effectiveness of EMP and negative impacts on environment caused by the project activities and figuring out feasible solutions and measures so that PMU can improve situation when necessary;
- (f) Assist PMU in enhancing the capacity of / FCCUs/divisional offices/ range offices/ FTUs staff on environmental management through on-the-job training on environmental assessment techniques, mitigation measure planning, supervision and monitoring, and reporting.

(4) Technology transfer

The Consultant shall carry out the technology transfer as an important aspect in design and supervision works. The Consultant shall provide the opportunity to PMU officers and staffs to be involved in the working team of the Consultant during the implementation of the project activities. If requested by PMU, the Consultant shall demonstrate the necessary technical procedures. The consultant shall assist PMU and its staff to build their capacity as a part of on the job training under the Project.

Chapter 5. Staffing

One positions of Professional (A) consultants and 8 positions of Professional (B) consultants will be engaged, over 36 months' duration of consulting services, for a total of 10 man-months for Professional (A) and 135 man-months for Professional (B) consultants.

(1) Qualification of key Team Members

The qualification of key Team Members is shown in Table 5-1.

Table 5-1: Qualification of key Team Members

Designation	Qualification
Team Leader/ Project Management/ Community Based Forest & Biodiversity Management (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate in Forestry, Natural Resource Management, Biodiversity conservation or other related fields <p><u>Experience:</u></p> <ul style="list-style-type: none"> - Experience in the field of community based forest management, biodiversity conservation/ management: 15 years or more - Experience of consulting services for more than four forest management, afforestation or biodiversity conservation, projects in India or other Asian countries - Experiences in working in the forestry project in other himalayan states including North Eastern States - At least three experiences of leading a consultants' team as the Team Leader or the Co-Team Leader - More than one experience in leading the donor funded projects/studies <p><u>Language (English):</u></p> <ul style="list-style-type: none"> - Proficient in writing and speaking <p><u>Regional Experience:</u></p> <ul style="list-style-type: none"> - Familiarity and Experience in South Asia, particularly in India
Co-Team Leader/ Community Development/ Gender (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate in Sociology/ Rural Sociology, Rural Development, Natural Resource Management, Gender studies or other related fields <p><u>Experience:</u></p> <ul style="list-style-type: none"> - Experience in the Community Development/ Natural Resource Management: 15 years or more. - Experience of consulting services for more than three sustainable forest management projects - Experiences in consulting services in other Himalayan states including North Eastern States - At least one experience of leading a consultants' team as the Team Leader or the Co-Team Leader <p><u>Language (English):</u></p> <ul style="list-style-type: none"> - Proficient in writing and speaking
Soil Water Conservation/ Construction Management	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate in civil engineering, construction management, or other related fields <p><u>Experience:</u></p>

Designation	Qualification
(Professional A)	<ul style="list-style-type: none"> - Experience in the field of soil water/moisture conservation / civil engineering in the forest area especially civil engineering of landslide, construction management: 15 years or more - Experience of consulting services for more than three projects relevant to planning, designing, supervision of soil water/moisture conservation and construction managements - At least one donor funded project in sustainable forest management/ natural resource management - Experience of designing and implementation of landslide/ landslip control measures is desirable <p><u>Language (English):</u></p> <ul style="list-style-type: none"> - Proficient in writing and speaking
Biodiversity Conservation (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate in Biodiversity conservation, Wildlife Management, Forestry, Natural Resource Management, Protected Area Management, or other related fields <p><u>Experience:</u></p> <ul style="list-style-type: none"> - Experience in the field of sustainable biodiversity conservation/ management: 10 years or more - Experience of consulting services for more than three biodiversity conservation, forest management or afforestation projects in India or other Asian countries - At least one donor funded projects in sustainable biodiversity conservation/ management - Experience of designing and implementation of community-based natural resource management (including SATOYAMA initiative) or biodiversity management project is desirable <p><u>Language (English):</u></p> <ul style="list-style-type: none"> - Proficient in writing and speaking
Livelihood (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate Degree in Sociology/ Rural Development/ Natural Resource Management/ Rural Marketing/ Economics/ Sociology/ Business Administration and other related field in livelihood improvement <p><u>Experience:</u></p> <ul style="list-style-type: none"> - Experience in the livelihood development: 10 years or more - Experience of consulting services as a livelihood specialist for more than three projects - At least one donor funded projects in livelihood development, sustainable forest management, or natural resource management - Capacity to undertake market/ value chain assessment and business planning - Experience in cluster based livelihood promotion - Proven records of research/ field work on livelihoods interventions in the Himalayan Region <p><u>Language (English):</u></p> <ul style="list-style-type: none"> - Proficient in writing and speaking

Consultant may propose other experts and supporting staffs required to accomplish the tasks outlined in the ToR.

(2) Scope of works for the respective personnel

Detailed information on the major tasks and duties each member of PMC shall perform is provided as follows:

No	Position	I or L	Major Tasks and Duties
B-1	Team Leader/ Project Management/ Community Based Forest & Biodiversity Management	I (Pro-A)	<p>The Team Leader/ Project Management/ Community Based Forest & Biodiversity Management will assist PMU in the following aspects (As the Team Leader / Project Management):</p> <ol style="list-style-type: none"> Maintain close coordination with PMU and offices concerned and assist PMU in coordinating with JICA; Guide and supervise the activities of all PMC specialists, both International and National consultants; supervise the activities of all office staff of Project Consultants; Undertake the managerial responsibilities of PMC, including seeking approvals from PMU on mobilisations/ demobilisations and field visits by PMC specialists; Make suggestions to PMU, and communicate inputs of the specialists on various project aspects; Participate in various meetings and events, and with specialists as per requirement and request from PMU; Preparing/ reviewing guidelines and manuals relating to project management, accounting procedures and procurement; Prepare overall work plan of PMC; Compile all periodical reports of consulting services and responsible for outputs of reports (inception reports, monthly, quarterly, annual reports and completion report); Undertake field visits to project sites and prepare Back-to-Office report for PMU; Prepare monthly accomplishment reports pertaining to his/her speciality, Ensure that all the scope of consultancy is accomplished. <p>The Team Leader/ Project Management/ Community Based Forest & Biodiversity Management will assist PMU in the following aspects (As the / Community Based Forest & Biodiversity Management):</p> <ol style="list-style-type: none"> Prepare and review guidelines and manuals relating to the community mobilization, micro planning/ annual planning, community based organisation management; Plan overall capacity development activities for project implementation units including community based organisations; Monitor the work progress;
A-1	Soil Water Conservation/ Construction Management	I (Pro-A)	<p>The Soil Water Conservation/ Construction Management Specialist will assist PMU in:</p> <ol style="list-style-type: none"> Prepare TOR for subcontracts, strategies and plans for site selection, designs and implementation of soil water conservation, landslide control activities and other construction works to be taken up in the Project; Survey and analysis for identifying locations and designs of soil water conservation, landslide control activities and other construction works in the project area; Recommend alternative project sites/designs if investigation results are not favourable for the project interventions Selection of sites, designs method for types of interventions to be considered for soil and water conservation, landslide control activities and other construction works Prepare TOR and subcontract of preparing of engineering design, drawings, work specification, schedule, cost estimates, contract documents and other requirements of civil engineering works to be constructed in the Project; Procure contractor(s) for civil engineering works; Supervise the activities of above contractor and ensuring the quality of outcome;

No	Position	I or L	Major Tasks and Duties
			<p>h) Monitor soil water conservation, landslide control activities and construction works directly implemented by the Project</p> <p>i) Plan and conduct training for engineers and relevant stakeholders in various technologies in soil water conservation and construction management</p> <p>j) Prepare the soil water conservation, landslide control and construction management related guidelines and manuals;</p> <p>The Soil Water Conservation/ Construction Management Specialist will:</p> <p>a) Act as a resource person for relevant training programs</p> <p>b) Undertake any other tasks requested by the PMC Team Leader;</p> <p>c) Undertake field visits to project sites and prepare Back-to-Office report for PMU</p> <p>d) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader.</p>
B-2	Co-Team Leader/ Community Development/ Gender	L (Pro-B)	<p>The Co-Team Leader/ Community Development/ Gender will assist PMU in the following aspects:</p> <p>a) Assist the team leader of PMC, and serve as the acting team leader during the off-assignment period of the team leader.</p> <p>b) Reviewing manuals/ guidelines and training programmes</p> <p>c) Facilitate the convergence with other stakeholders;</p> <p>d) Monitor performances of motivators, ward facilitators, and resource organisations;</p> <p>e) Revisit TOR for mobilisers, ward facilitators, and resource organisations;</p> <p>f) Plan overall capacity development activities for community development and livelihood improvement.</p> <p>g) Review and finalise gender action plan and develop gender training module for the project staffs at all levels</p> <p>h) Conducting Gender Monitoring</p> <p>i) Organise international training programs;</p> <p>The Co-Team Leader/ Community Development/ Gender will:</p> <p>a) Undertake any other tasks requested by the PMC Team Leader; and</p> <p>b) Undertake field visits to project sites and prepare Back-to-Office report for PMU</p> <p>c) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader.</p>
B-3	Biodiversity Conservation	L (Pro-B)	<p>Biodiversity Conservation Specialist will assist PMU in:</p> <p>a) Design the scientific biodiversity management including implementation plan and budget;</p> <p>b) Design the community based sustainable biodiversity management component adopting SATOYAMA concept including implementation plan and budget;</p> <p>c) Facilitate linkages and collaborations with the State Biodiversity Board and other relevant organisations;</p> <p>d) Facilitate convergence with other programmes and schemes.</p> <p>e) Develop necessary capacity building programs and training materials for the project staffs and community;</p> <p>f) Prepare process documentation;</p> <p>g) Establish network with International Partnership for the SATOYAMA Initiative;</p> <p>h) Prepare TOR for specialized agencies to undertake the biodiversity inventory and ecosystem valuation; and</p> <p>i) Design and organizing exposure visits for PMU and other project implementation units.</p> <p>The Biodiversity Specialist will;</p> <p>a) Act as a resource person for the training programs;</p> <p>b) Undertake any other tasks requested by the PMC Team Leader; and</p> <p>c) Undertake field visits to project sites and prepare Back-to-Office report for PMU</p> <p>d) Prepare brief travel reports and monthly accomplishment reports</p>

No	Position	I or L	Major Tasks and Duties
			pertaining to his/ her specialty and submit them to the Team Leader.
B-4	Livelihood	L (Pro-B)	<p>The Livelihood Specialist will assist PMU in:</p> <ol style="list-style-type: none"> Review and finalise micro plan/ annual plan/ annual convergence plan format and guidelines and manuals as required along with other PMC specialists; Develop objective gender monitoring indicators to be included in the project M&E system; and Develop operation manual for Community Development and Livelihood Improvement Fund; Formulate the overall common interest group (CIG)/ SHG IGA development plan; Review and finalise the CIG/ SHG identification/ adoption criteria; Review and preparation of CIG/ IGA guidelines and manuals; Prepare technical materials of small scale IGA activities for information dissemination; Develop a cluster formation plan; Support the cluster level organisations for their operation, including the procurement of necessary equipment, production support, marketing support, accounting, etc.; Facilitate convergence with other livelihood development schemes; Develop overall strategic and action plan for livelihood activities for the Project; Prepare the guidelines and manuals for CIG/SHGs; and Developing strategies for CSR. <p>The Livelihood Specialist will:</p> <ol style="list-style-type: none"> Work closely with the NTFP/MAP specialist and the value-chain/ marketing specialist; Undertake any other tasks requested by the PMC Team Leader; Undertake field visits to project sites and prepare Back-to-Office report for PMU Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader.
B-5	M&E/ MIS	L (Pro-B)	<p>The M&E/ MIS Specialist will assist PMU in:</p> <ol style="list-style-type: none"> Establish effective and efficient monitoring system; Procure contractors for baseline survey, periodical assessments, and other related activities and etc.; Supervise the work of the above contractors and ensuring qualities of their outputs; Review baseline and mid-term surveys reports, and other M&E reports/ documents Prepare guidelines and manuals required for M&E and MIS; Operationalise MIS and project accounting system, and Monitor and evaluate the progress and outputs of Project activities Conduct field validation, prepare physical and financial progress report; Provide progress data and information required to be used by the High Power Committee (HPC), Governing Body (GB) and JICA for review and appropriate decision making; Design, review and revise project performance indicators, and developing methodologies for verification with respect to such indicators; Compile periodical M & E reports; and Organise annual review meetings at State Level. <p>The M&E/ MIS Specialist will:</p> <ol style="list-style-type: none"> Work in collaboration with Remote Sensing/ GIS Specialist for effective monitoring; Assist FCCUs/DMUs in the field validation; Train PMU and other project related staffs in MIS and project accounting system; Accomplish the tasks related to the Project as directed by the Team Leader;

No	Position	I or L	Major Tasks and Duties
			<ul style="list-style-type: none"> e) Undertake field visits to project sites and prepare Back-to-Office report for PMU; and f) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader.
B-6	Remote Sensing /GIS	L (Pro-B)	<p>The Remote Sensing/ GIS Specialist will assist PMU in:</p> <ul style="list-style-type: none"> a) Survey and demarcation and forest boundary delineation of the project area; b) Procure equipment and software necessary for the remote sensing and GIS establishment; c) Procure contractor for satellite remote sensing based mapping, and GIS database development; d) Prepare treatment area maps in GIS environment. e) Supervise the activities of above contractor and ensuring the quality of outcome; f) Process the remote sensing data and other developed GIS database and producing data and maps as required by the project; g) Prepare the survey, remote sensing and GIS related guidelines and manuals; h) Maintain GIS database and GIS-based outcomes; i) Integrate GIS into MIS for effective monitoring; and j) Provide interpretation of imageries for monitoring. k) Set up data QC/QA processes l) Check data/ map quality m) Prepare strategy and plan for expanding project GIS to HPFD <p>The Remote Sensing/ GIS Specialist will:</p> <ul style="list-style-type: none"> a) Work in collaboration with M&E/ MIS Specialist for effective monitoring; b) Train PMU and other project related staffs in MIS and project accounting system; c) Train PMU and other project related staff who will use the GIS; d) Accomplish the tasks related to the Project as directed by the Team Leader; e) Undertake field visits to project sites and prepare Back-to-Office report for PMU; and f) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader.
B-7	Institutional Capacity Building and Training	L (Pro-B)	<p>The Institutional Capacity Building/ Training Specialist will assist PMU in:</p> <ul style="list-style-type: none"> a) Undertake and revisiting training needs assessment b) Identify the relevant institutions for international and national training/ study tours; and c) Plan overall capacity development activities for project implementation units including community based organisations; d) Prepare the training master plan and annual training schedule e) Organise the training programme as per the annual training schedule f) Solicit the resource persons required and procure the specialised agencies to undertake capacity development activities g) Undertake training evaluation and prepare report <p>The Institutional Capacity Building/ Training Specialist will:</p> <ul style="list-style-type: none"> a) Undertake any other tasks requested by the PMC Team Leader; b) Undertake field visits to project sites and prepare Back-to-Office report for PMU; and c) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader.
B-8	Environmental and Social Consideration/ Environmental Economics/PES	L (Pro-B)	<p>The Social and Environmental Consideration Environmental Economics/PES Specialist will assist PMU in:</p> <ul style="list-style-type: none"> a) Prepare and update of Environmental and Social Assessment Framework (ESAF) Plan; b) Prepare and update of Vulnerable Scheduled Tribes Planning Framework (VSTPF);

No	Position	I or L	Major Tasks and Duties
			<ul style="list-style-type: none"> c) Implement and monitor ESAF and VSTPF; d) Develop PES monitoring indicators to be included in the project M&E system; e) Develop TOR for the short term studies on environmental economics and PES in the project areas. f) Update of capacity development plan/ programme/ training modules for environmental and social consideration/ PES; g) Preparation of monitoring reports for environmental and social consideration; h) Develop environmental and social safeguard manual/guidelines for the Project. i) Develop PES monitoring guidelines for the Project. <p>The Social and Environmental Consideration Specialist will:</p> <ul style="list-style-type: none"> a) Work in collaboration with Environmental and Social Consideration Directors/ Managers of PMU and Environmental and Social Consideration Expert(s) hired by PMU, in respect to Project's environmental and social consideration aspect; b) Accomplish the tasks related to the Project as directed by the PMC Team Leader; c) Undertake field visits to project sites and prepare Back-to-Office report for PMU; and d) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader.

Chapter 6. Reporting

Within the scope of consulting services, the Consultant shall prepare and submit reports and documents to PMU as shown in Table 6-1. The Consultant shall provide electronic copy of each of these reports. All reports shall be prepared in English.

Table 6-1 Reports to be Submitted

Category	Type of Report	Timing	No. of Copies
Consultancy Services	Inception Report	Within 1 months after commencement of the services	5 copies each per time
	Monthly Progress Report	Every month except the month overlapping with the Quarterly Progress and Annual Progress Report.	5 copies each per time
	Quarterly Progress Report	Every quarter except the quarter overlapping with the Annual Progress Report	5 copies each per time
	Annual Progress Reports	10 th day of the first month of the next financial year	5 copies each per time
	Completion Report of the Consulting Services	One month before the closure of the contract	10 copies each per time
Other Report	Back to Office Report	Within 7 days on return of the field visit	1 set of copy per submission
	Technical Report	As required or upon request	As required

Contents to be included in each report are as follows:

(Example of Monthly Progress report and Inception report)

- a) Inception Report (5 copies each of English and Vietnamese versions): to be submitted within 1 month after the commencement of the services, presenting the methodologies, schedule, organization, etc.
- b) Monthly Progress Report (5 copies): to describes briefly and concisely all activities and progress for the previous month by the 10th day of each month. Problems encountered or anticipated will be clearly stated, together with actions to be taken or recommendations on remedial measures for correction. Also indicates the work to be performed during the coming month.
- c) Quarterly Progress Report (5 copies): to describe all activities and progress for the reporting period (quarter) by the 10th day of the month on a quarterly basis. Problems encountered or anticipated will be clearly stated, together with actions to be taken or recommendations on remedial measures for correction. Also indicates the work to be performed during the following quarter.
- d) Annual Progress Report (5 copies): to describe all activities and accomplishments made for the year by the 10th day of the 1st month of the year. Problems encountered together with actions taken should be described. Lessons learned from the project activities done in the year should

also be described in the report. The works and activities planned for the following years should be indicated.

- e) Completion Report of the Consulting Services (10 copies): to be submitted one month before the completion of the consulting services. The report should describe the approaches and methodologies taken, all the activities carried out and inputs made by the consultant, the results and accomplishments made by the consulting services, lessons learned for the project as well as consulting services, and recommendations for ensuring the sustainability of the project effect and future projects similar to the project.
- f) Back to Office Report (1 copy): to be submitted to report the findings from the very site visits conducted by the PMC specialists. The report shall be submitted within 7 days from the date of return to the office from the field. One copy of the report shall be submitted to PMU.
- g) Technical Report (as per required): to be submitted as required or upon request by PMU or by the initiation of PMC for technical topics relevant to project implementation.

Chapter 7. Obligations of the Executing Agency

A certain range of arrangements and services will be provided by the Executing Agency to the Consultant for smooth implementation of the Consulting Services. In this context, the Executing Agency will:

(1) Report and data

Make available to the Consultant existing reports and data related to the Project as requested by PMC;

(2) Office space

Provide an office space in the Headquarters of the Executing Agency with necessary equipment, furniture and utility. However, the Consultant's requirement for office space, including necessary equipment, furniture and utilities, should be clearly stated in the proposal with its rental cost for the case where PMU- HPFEMS would be unable to provide such facilities;

(3) Cooperation and counterpart staff

Appoint counterpart officials, agent and representative as may be necessary for effective implementation of the Consulting Services;

(4) Assistance and exemption

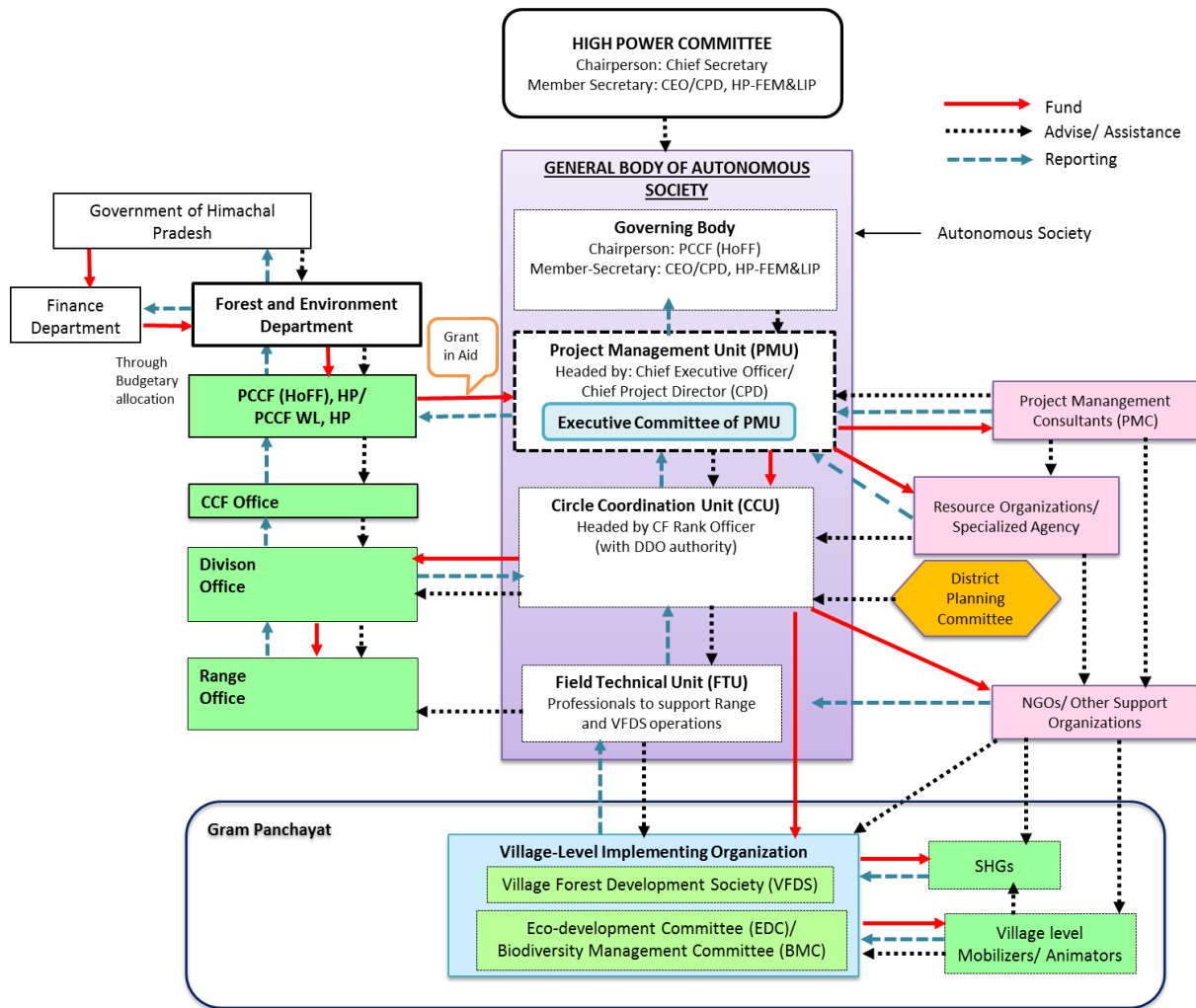
Use its best efforts to ensure that the assistance and exemption, as described in the Standard Request for Proposal issued by JICA, will be provided to the Consultant, in relation to

- work permit and such other documents;
- entry and exit visas, residence permits, exchange permits and such other documents
- clearance through customs;
- instructions and information to officials, agent and representatives of the Borrower's Government;
- exemption from any requirement for registration to practice their profession;
- privilege pursuant to the applicable law in the Borrower's Country.

Attachment:

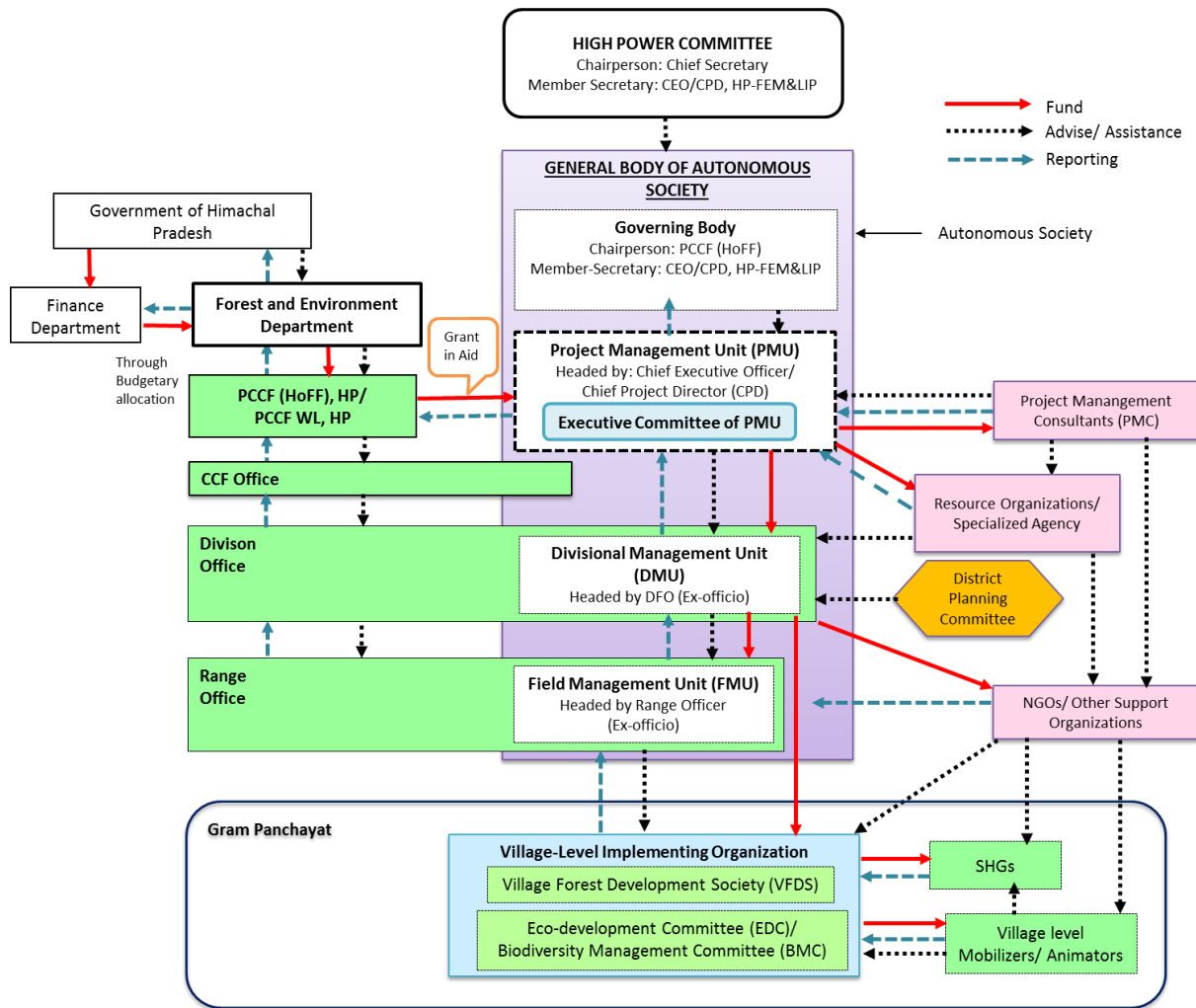
Table - MM of the PMC Specialists/ Staff

International (Professional A)		
1	Soil Water Conservation/ Construction Management	10
Sub Total (1)		10
National (Professional B)		
1	Team Leader/ Project Management/ Community Based Forest & Biodiversity Management	25
2	Co-Team Leader/ Forest Management	27
3	Biodiversity Conservation	15
4	Livelihood/ Gender	15
5	M&E/ MIS	15
6	Remote Sensing /GIS	18
7	Institutional Capacity Building and Training	12
8	Environmental and Social Consideration/Environmental Economics/PES	8
Sub Total (2)		135
Support Staff		
1.	Field Manager (1)	31
2.	Field Manager (2)	31
3.	Field Manager (3)	31
4.	Field Manager (4)	31
5.	Office Manager	36
6.	Computer Operator	36
7.	Personal Assistant	36
8.	Office Boy	36
9.	Driver (1)	36
10.	Driver (2)	36
Sub Total (3)		340



Source: JICA Study Team (2017)

Figure 2 Option 5: Institutional Arrangements for HP FEMLIP - Society Mode (with circle coordination units)



Source: JICA Study Team (2017)

Figure 3 Option 3: Institutional Arrangements for HPFEM&LIP - Society mode (conventional forestry loan project)

Attachment II.4.1.2 Gram Panchayat: Statutory Vehicle of Governance and Development

1. Overview

Panchayati Raj system is three tiered systems of local self-governance adopted in India– a decentralized form of democratic government. This system was adopted by state governments during the 1950s and 60s as laws were passed to establish panchayats in various states. It also found backing in Indian constitution with the 73rd Amendment in 1992 to accommodate the idea. In the history of Panchayati Raj in India, on 24th April, 1993, the constitutional (73rd Amendment) Act 1992 came into force to provide constitutional status to the Panchayati Raj institutions.

Currently, the Panchayati Raj system exists in all the states except Delhi. The states of Goa, Jammu and Kashmir, Mizoram, Meghalaya, Nagaland and Sikkim have two-tier panchayats- one at the village level and the second at the Zila or district level. In Jammu and Kashmir, block is the second level. In all other states Panchayati Raj is a three-tier system- village or *Gram* as first level, block or *Kshetriya* or *Mandal* as second level and Zila or district as the third level.

At the lowest level, Gram Panchayat is basic unit of administration that also performs judicial functions as well as functions related to public welfare and rural/ economic development at village level. According to Article 243-G, the law of state legislature endows the Panchayat with such powers and authority as may be necessary to enable them to function as institutions of self-government. Thus, to achieve the objectives of social justice, economic development, through plans and to implement these, the panchayats have been assigned 29 subjects as listed in the Eleventh Schedule of the Indian Constitution.

Some of the subjects that are listed and falls in the domain of natural resource management are: a) land improvement/ soil conservation, b) minor irrigation, c) water management and watershed development, d) agriculture, e) fisheries, f) social forestry and farm forestry, g) minor forest produce, h) drinking water, i) fuel and fodder, j) non-conventional energy sources etc.

Every panchayat elects a president or *Sarpanch* or *Pradhan* and a Vice-President or *Up-Sarpanch* or *Up-Pradhan*. In some states, the *Sarpanch* is directly elected by the Gram Sabha either through the show of hands or through secret ballot. The *Sarpanch* occupies a pivotal position in Gram Panchayat system. S/he supervises and coordinates the various activities of the panchayat. The panchayat secretary and the village level worker are the two officers at the panchayat level to assist the *Sarpanch* in administration.

A Gram Panchayat fund has been created on the pattern of the consolidated fund of the state. Money comes also as grants-in-aid from the central or the state government or from the Zilla Parishad or Panchayat Samiti. All money received by the Gram Panchayat like contribution or grants made by the state government, union government, Zila Parishad and all sums received by the panchayat in the form of taxes, rates, duties, fees, loans, fines and penalties, compensation, court decree, sale proceeds and income from panchayat property etc. go into that fund.

Village Panchayats have been empowered to levy taxes or fees on subjects like houses and

buildings, professions, trades, callings and employments, fees on registration of vehicles, fairs and melas, sanitary arrangements, water tax, lighting tax, tax on sale of firewood, tax on slaughter houses, private fisheries, license fee on tea stalls, hotels or restaurants, carts, carriages, boats, rickshaws etc.

The Panchayati Raj Act, enacted by the Legislative Assembly of HP in the Forty-fifth Year of the Republic of India, and is called the **Himachal Pradesh Panchayati Raj Act, 1994**. Some of the key provisions would be useful to design ‘institutional’ arrangements for implementation of proposed Project. Some key provisions are highlighted from the Act, and narrated below.

2. Gram Sabha

Every Sabha shall hold four general meetings in each year and every meeting shall be held in the months of January, April, July and October. It shall be the responsibility of the Pradhan to convene such meetings.

For any general meeting of the Gram Sabha, representation of at least one-third of the total number of families represented by one or more members of the Gram Sabha shall form a quorum and decision will be taken by a majority of members present and voting.

The meeting of the Gram Sabha shall be presided over by Pradhan or in absence of Pradhan by Up-Pradhan. In the event of both Pradhan and Up-Pradhan being absent, the meeting of Gram Sabha shall be presided over by a member of the Gram Sabha to be elected for the purpose by the majority of members present in the meeting.

Giving due consideration to the women, provision has been made to constitution of Mahila Gram Sabha in every Gram Sabha. The Mahila Gram Sabha shall hold two meetings, first on 8th March and second on first Sunday of September in each year which shall be convened by the *Mahila* Pradhan or in her absence by the *Mahila* Up-Pradhan and in the absence of both, by the senior Mahila Member of the Gram Panchayat.

3. Gram Panchayat

There shall be a Gram Panchayat for a Gram Sabha. The Gram Sabha shall elect ‘*Pradhan*’ and ‘*Up-Pradhan*’, and shall also elect from amongst its members an Executive Committee called the Gram Panchayat consisting of such number of persons not being less than seven and more than fifteen, including *Pradhan* and *Up-Pradhan*.

The meeting of the Gram Panchayat shall be public and shall be held at least once a month at the office of the Gram Panchayat and at such time as the Pradhan may fix.

4. Maintenance of Gram Panchayat Records

The secretary of the Gram Panchayat, under the overall supervision of the Pradhan and in his absence under the supervision of the Up-Pradhan, shall be responsible for the custody and maintenance of all prescribed records and registers and other property belonging to or vested in the Gram Sabha or the Gram Panchayat.

5. Constitution and functions of Standing Committees

Every Gram Panchayat shall, from amongst its members, constitute by election, following Standing Committees:

Table 1 Standing Committees in Gram Panchayat

No..	Standing Committee	Description of Functions	Headed by
1	Works Committee	All developmental works of the Gram Panchayat shall be executed by the Works Committee, in the manner as may be prescribed, and if considered necessary, the Gram Panchayat may form sub-committees to supervise and monitor performance of such works and to obtain accounts thereof.	Pradhan or Up-Pradhan;
2	Budget Committee	The Budget Committee shall prepare the annual budget of the Gram Panchayat and shall submit the same to the Secretary for placing it before the Gram Panchayat for consideration and approval.	Pradhan or Up-Pradhan;

Source: Compiled by JICA Study Team (2017) based on HP Panchayati Raj Act, 1994

One committee shall be headed by the Pradhan and the other by the Up-Pradhan, as may be decided by the Gram Panchayat by majority vote in its meeting. Each committee shall consist of three members including the Pradhan or the Up-Pradhan, as the case may be.

The Gram Panchayat may constitute more Standing Committees for performing such other functions as may be entrusted to them by the Gram Panchayat.

6. Joint Committee

If two or more Gram Sabhas are jointly interested in transacting any business, they may delegate to the joint committee, formed in accordance with the provisions of section 24 or to the Panchayat Samiti, power, with such conditions as they may think proper to impose, to frame any scheme binding on each Gram Sabha as to the construction and maintenance of any joint work and as to the power which may be exercised by any such Sabha in relation to such scheme:

Provided that the Gram Sabha shall pay the cost of the transaction of the business or the execution of the scheme as to the construction and maintenance of any joint work in such proportion as may be agreed upon in the written instrument.

7. Panchayat Fund

Every Panchayat shall establish a fund to be called the Panchayat Fund and all sums received by the Panchayat, shall form part of the said Fund. The Panchayat Fund shall be kept in the nearest Government Treasury or Sub-Treasury or Post Office or Co-operative Bank or Scheduled Bank.

An amount allotted to the Panchayat by the state government or any other person or local authority for any specified work or purpose shall be utilized exclusively for such work or purpose and in accordance with such instructions as the state government may either generally or specially issue in this behalf.

The amount from the Gram Panchayat Fund shall be withdrawn, only under the joint signatures of the secretary or the Panchayat Sahayak of Gram Panchayat and Pradhan or as per provision in the Act.

8. Grant-in-Aid to Panchayats

After the 73rd Constitutional Amendment became effective, at expiration of every fifth year, the state government shall constitute a Finance Commission¹ to review the financial position of local bodies and make recommendations to the state government in the direction of strengthening the financial position of these institutions. The state government shall make grants-in-aid to the Panchayats as may be decided by it on the basis of the recommendations of the State Finance Commission.

9. Budget and Annual Accounts

Every Panchayat shall prepare annually in such form and in such manner and by such date, as may be prescribed, budget estimates, of its receipts and expenditure for the next financial year. The annual accounts and report of administration by Panchayat shall be presented to the prescribed authority in the prescribed manner.

10. Audit of Panchayats

The accounts of Panchayat may be audited by the Accountant General, HP and the Director of Local Fund Audit who shall have access to relevant information and records of the Panchayats. The annual technical inspection report of the Accountant General, HP as well as the annual report of the audit shall be placed before the State Legislature.

¹ **Finance Commission:** Finance Commission is a body set up under Article 280 of the Constitution. Its primary job is to recommend measures and methods on how revenues need to be distributed between the Centre and states. Besides suggesting the mechanism to share tax revenues, it is the duty of the Commission to make recommendations to the President such as the principles which should govern the grants-in-aid of the revenues of the states out of the Consolidated Fund of India. It also suggests measures needed to augment the Consolidated Fund of a state to supplement the resources of the panchayats and municipalities in the state. Its functions also include finding any other matter referred to the Commission by the President in the interests of sound finance. In the case of 14th Commission, these principles will apply for a five-year period beginning April 1, 2015 to March 31, 2020.

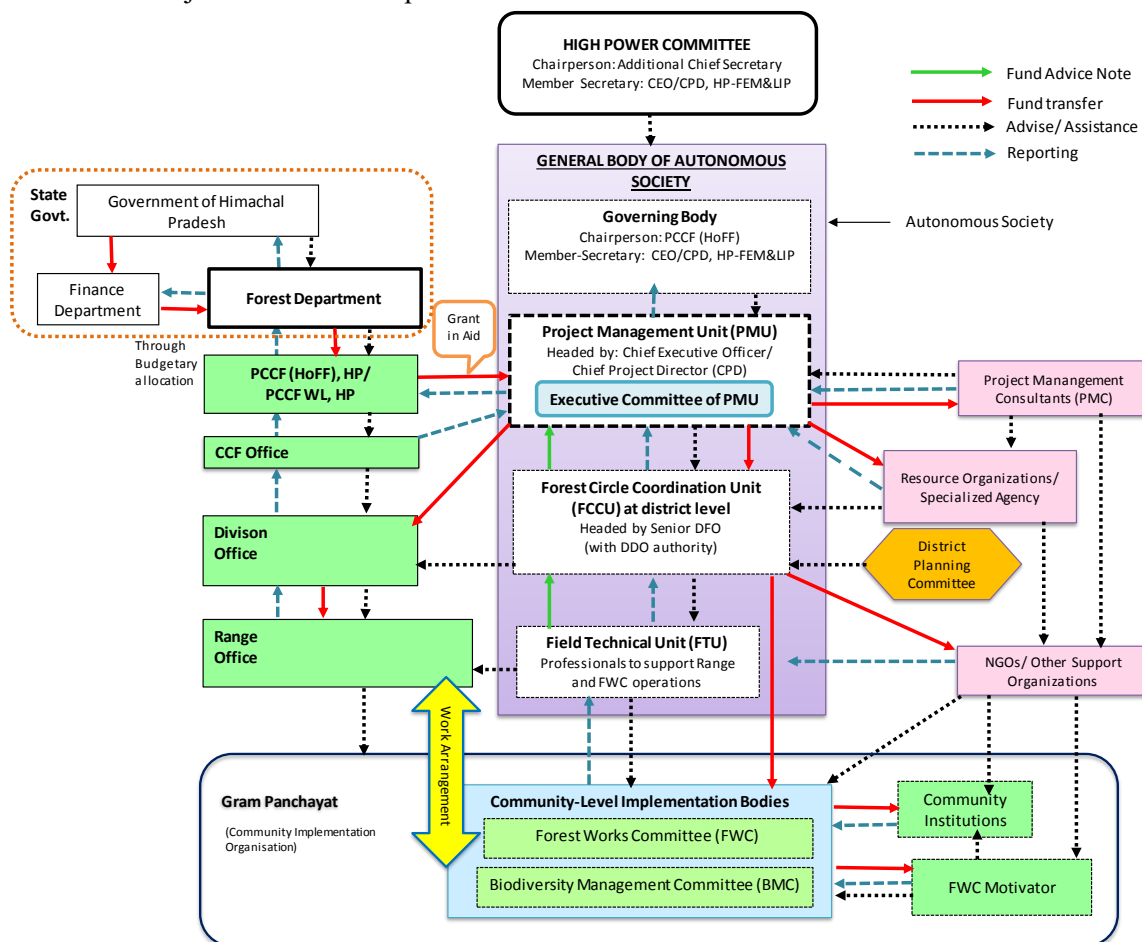
Fourteenth Finance Commission: As per the increased devolution suggested in the report of the 14th Finance Commission. The higher tax devolution will allow states greater autonomy in financing and designing of schemes as per their needs and requirements. The 14th FC had recommended an increase in the share of states in the central tax revenue from the current 32 % to 42 %. The Commission has recommended distribution of grants to states for strengthening duly elected Gram Panchayats and municipal bodies. These grants will be divided into basic grants and performance grants. Due to this recommendation, the share of nine states including HP has decreased. In the 13th Finance Commission share of HP was 0.781 that has now reduced to 0.713 during 14th Finance Commission. The main reason for this decrease is – the Commission has added a new criterion of forest cover for devolution of central taxes which has gone against the nine states. According to the Commission – “We believe that a large forest cover provides huge ecological benefits, but there is also an opportunity cost in terms of area not available for other economic activities and this also serves as an important indicator of fiscal disability.” The panel has assigned 7.5% weight to forest cover for inter-se determination of the shares of taxes to the states, while population carries 17.5% weight, demographic change 10, income distance 50 and area 15 % weight.

Attachment II.4.1.3 Institutional Arrangement Option 4B: Engaging Gram Panchayats

1 Overview of Proposed Institutional Arrangements for the Project

1.1 Overall Framework

Figure 1.1 below shows the detailed institutional arrangement envisaged for the implementation of the Project based on the option 4B.



Source: JICA Study Team (2017)

Figure 1.1 Proposed Institutional Set-up of the Project (Option 4B)

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

The High Power Committee (HPC) created for the Project will act as highest decision-making body for the Project at state government level, and will not form part of the autonomous society to be created for project implementation. The Governing Body (GB) and the General Body of the Project would be the decision-making bodies for the Project within Society as per the provisions in the HP Societies Registration Act, 2006.

To support project implementation at the field level, PMU will create and coordinate with two set of offices viz., Forest Circle Coordination Units (FCCUs) and Field Technical Units (FTUs) those will work as extended arms for the PMU. The PMU including FCCUs and FTUs will assist and play facilitative roles, and will source funds for project implementation. The main responsibility for project implementation will remain with the regular structure of HPFD, and in no way the project offices created within autonomous society will duplicate or substitute roles and responsibilities of HPFD. The existing divisional and range offices will operate within their respective jurisdictions for the project implementation. The implementing arrangements would be through the forest divisions (DFOs) and the Gram Panchayats.

As required, resources organizations/ support agency will be engaged by PMU to support divisional and range offices, while NGOs would be engaged to support range offices and community level organisations (GPs) in field implementation. Community level organisations will also be supported by motivators, to be identified from within the respective project GPs/ wards by the community level institutions.

PMU will have a comprehensive operation manual that would prescribe guidelines, policies, protocols, procedures and rules on finance, accounting, administration, management for smooth implementation of the Project. The operation manual will necessarily include gender policy and checklist to ensure gender mainstreaming in the Project. The operation manual will convey the internal policy of the PMU to manage the Project and would be approved first by GB and subsequently by HPC during first year of operations of the Project prior to adoption. PMU would evolve mechanism for tracking the project implementation, progress reporting and fund flow, for the project interventions.

HPFD and PMU will enter into a formal arrangement to vest the project management responsibilities to society (PMU), and after project completion, HPFD would own responsibility of assets and institutions created under the Project to further support and maintain under routine HPFD functioning. Later, during the phase-out phase of the Project, phase-out plan would be developed and agreed between the two entities.

2 Details of Proposed High Power Committee and Management Bodies of PMU

2.1 High Power Committee (HPC) of the Project

High Power Committee (HPC) will be established within the HP state government at project initiation, and will act as the highest decision-making body for the Project at the state level. HPC will be outside the autonomous structure to be created as autonomous Society at state level for project implementation.

Since, there would be many stakeholders in management of ecosystems and ecosystem services, it would be appropriate to include some key stakeholders to ensure better coordination and inter-sectoral convergence. In DPR, a 13-member committee (being referred as Steering Committee in DPR) headed by Chief Secretary is proposed as a part of the Society, whereas now 13 members HPC having additional 3 members as special invitee is being proposed outside the society (PMU),

to be created for the purpose of the Project. As per the current responsibilities of the state government secretaries, the proposed composition of HPC is given in **Table 2.1**.

Table 2.1 Proposed Composition of HPC for the Project

No.	Position	Proposed Members	Remarks by JICA Study Team	Remarks by HPFD
1	Chairperson	Chief Secretary	Also responsible for Tribal Development and Disaster Management	Earlier proposed; Now not considered as s/he may not be able to spare adequate time for the meetings and reviews
2	Member	Principal Secretary, Forest	Additional Chief Secretary (Forests, Environment, Science & Technology, Food, Civil Supplies & Consumer Affairs); currently existing; Proposed as Vice-Chairperson	Chairperson; ACS (in-charge Forests)
3	Member	Principal Secretary, Finance	Additional Chief Secretary (Finance, Planning, Economics & Statistics, Twenty Point Programme); Currently existing	
4	Member	Additional Chief Secretary (Agriculture, Fisheries, Training & FA)	Proposed; prospective stakeholder in Ecosystem Management	
5	Member	Principal Secretary, Ayurveda	Additional Chief Secretary (Ayurveda); Currently existing	
6	Member	Principal Secretary, Tribal Development	To be deleted; currently not existing; responsibilities with the Chief Secretary	
7	Member	Principal Secretary, Rural Development and Panchayati Raj	Also responsible for Animal Husbandry	
8	Member	Principal Secretary, Health & Family Welfare	Proposed; prospective stakeholder to address health & gender issues	
9	Member	Principal Secretary (Horticulture, Information Technology)	Proposed; prospective stakeholder in Ecosystem Management	
10	Member	PCCF (HOFF), Forest Department		
11	Member	Chief Wildlife Warden/ PCCF (Wildlife), Forest Department		
12	Member	Representative of MoEF & CC, GoI	Special Invitee	
13	Member	Representative of JICA	Special Invitee	
14	Member	NGOs (2 nos.) to be nominated by State Govt.	One member proposed; Head of Organization of repute to attend the meeting; to be nominated by the state govt. for two years;	
15	Member	Zilla Panchayat President	Proposed; one member by rotation from the project districts; to be nominated by the state govt. for one year	
16	Member	Team Leader (or nominee) of Project Management Consultant	Proposed for providing independent views on project implementation; Special Invitee;	
17	Member-Secretary	Chief Project Director, / Ex-officio CEO Society (PMU)		

Source: JICA Study Team (2017)

(1) Frequency of Meeting and Representation

HPC will meet at least once in six months or more frequently if the situation arises in a year, particularly during preparatory phase of the Project. In case the members are not available on the day of the HPC meeting, they may nominate senior rank officers in the state government/ state department as their representatives to the meetings with authorization for decision making.

(2) Agenda Circulation and Quorum

A minimum of 2/3rd members would form the quorum for the HPC meetings. Agenda of the meeting and proposals should be circulated by the Member-Secretary well in advance to all

members, at least seven days ahead of the meeting date. The proceedings of the HPC meetings will be circulated to all the members/ attendees within reasonable timeframe, after the meeting is concluded.

(3) Roles and Responsibilities

HPC will regularly oversee and review the performance of the project implementation, and will be responsible for giving directions to the PMU for ensuring smooth and efficient project implementation. HPC will pursue the matters relating to policy and annual budget with the state government, and also facilitate inter-departmental coordination and convergence. HPC will also be responsible to facilitate coordination amongst various line departments of the state and other agencies to help achieving the project goals.

The operation manual of the Project, to be developed by PMU during its first year of operation, will be approved by HPC, and will ensure that the approved operation manual is well disseminated and adopted at all levels of project implementation. If need arise, the approved operation manual could be reviewed by HPC at mid-term of the Project (after 4th year), and amended operation manual could be utilized for remaining project period. JICA should be informed for such amendments in the operation manual.

HPC will also approve annual plans and budgets of the Project at the beginning of each financial year, and review the project progress at least every-six months on regular basis.

HPC will accord administrative and financial approvals/ sanctions of all individual schemes, proposals or procurement of goods & services amounting to 50 million INR and above.

2.2.2 Society mode for Project Implementation

For efficient management of a time-bound project, it is very important and essential to have efficient flow of funds, else implementation may suffer delays. As a consequence, desired results may take little longer time or may not be satisfactorily achieved within given time-frame and resources.

To have efficient flow of funds as per the annual plans, and for timely submissions of reimbursement claims, adequate authority has to be entrusted with the project personnels who are made responsible for managing and implementing the project activities. Creation of an autonomous structure while having dedicated project specific administrative set-up is one of the ways to achieve it.

Thus, taking lessons from completed and on-going JICA assisted forestry projects in the country that are being or have been implemented by adopting the society mode approach, institutional arrangements for the Project is being proposed. This delegation of power and authority will ensure the project management to take timely decisions, plan, release funds, execute and facilitate project processes in an effective manner.

(1) Creation of the Society Project Management Unit (PMU)

The project implementation structure will be created through a State Resolution (Government Order/ Notification) and would get registered as autonomous society under Himachal Pradesh Societies Registration Act, 2006, applicable in the state, with its Memorandum of Association and Bye-laws to be framed as stipulated in the Societies Act, 2006 including the following:

- ◆ Name of Society
- ◆ Location and area of operation
- ◆ Aims and objectives of the society
- ◆ List of membership of the society (General Body)
- ◆ List of members of the Governing Body
- ◆ Executive Offices, officers and their functions
- ◆ Operation of Funds and Accounts of the society
- ◆ Audit of accounts
- ◆ Amalgamation/ Dissolution of Society and Asset Transfer after Project closure

To support project implementation at the field level, PMU (an autonomous society) at the state level will directly coordinate with two levels of offices, FCCUs and FTUs, to be created as extended hands for the PMU, and will operate to assist and facilitate project implementation within the jurisdictions of the project divisions and ranges. The circle offices under HPFD will be involved for regular supervision and review of project works within their jurisdiction as per the administrative structure of HPFD.

The bye-laws of the Society shall specify the frequency and the manner in which the meetings of the Governing Body and general body shall be held. The Governing Body shall meet at least once in every three months, and the General Body of the PMU (society) shall meet at least once in a financial year. Provision for convening special general body meetings should also be made.

HPFD being main executing agency will first receive funds from the state government through budgetary provision, and pass on to the PMU. HPFD will also be committed to support project implementation through various established offices located at state, circles, divisions, range etc. as per administrative structure of HPFD.

(2) Highest Decision Making of the Society: Governing Body

GB would be highest decision making body within the society. In the DPR, 17-member committee (being referred as Executive Committee in DPR) is proposed, whereas now 18 members are proposed for GB. The proposed composition of GB is given in **Table 2.2**.

Table 2.2 Proposed Composition of Governing Body

No.	Position	Proposed in DPR	Remark by JICA Study Team
1	Chairperson	PCCF (HOFF), Forest Department	
2	Member	Chief Wildlife Warden/ PCCF (Wildlife), Forest Department	
3	Member	Representative of MoEF&CC, GoI	Proposed for deletion;
4	Member	Representative of JICA	Proposed for deletion;
5	Member	Additional PCCF (Finance & Planning), Forest	PCCF (Finance & Planning), Forest Department;

No.	Position	Proposed in DPR	Remark by JICA Study Team
		Department	currently existing
6	Member	Additional PCCF (M&E), Forest Department	PCCF (M&E), Forest Department; currently existing
7	Member	Additional PCCF (PFM & FDA), Forest Department	PCCF (PFM & FDA), Forest Department; currently existing
8	Member	Additional PCCF (Working Plans), Forest Department	
9	Member	Additional PCCF (Research), Forest Department	
10	Member	Member-Secretary, State Biodiversity Board, HP	Proposed; prospective stakeholder in Ecosystem Management
11	Member	Director (Ayurveda)	
12	Member	CCF (Project Formulation), Forest Department	
13	Member	CCF (IT), Forest Department	
14	Member	CCF in field posting	One member by rotation from the project circles; to be nominated by the state govt. for one year
15	Member	Convener, SLBC or its representative	Proposed for inter-sectoral convergence; senior rank officer
16	Member	Representative from NABARD	Proposed for inter-sectoral convergence; senior rank officer
17	Member	Project Director in PMU	Proposed
18	Member	Representative of Academia (2 nos.) to be nominated by the state govt.	One member proposed; Head of Organization of repute to attend the meeting; to be nominated by the state govt. for two years;
19	Member	NGOs (2 nos.) to be nominated by State Govt.	Proposed for deletion;
20	Members	GP/ FWC Chairperson	Proposed; One member of good performing GP/ FWC by rotation from the project divisions; to be nominated by the Chief Project Director for one year
21	Member-Secretary	Chief Project Director, / Ex-officio CEO Society (PMU)	

Source: JICA Study Team (2017)

The indicative i) frequency of meetings, ii) agenda circulation and quorum, iii) roles and responsibilities of GB is described in the following box.

i) Frequency of Meetings

GB will meet at least once every quarter (starting April) in a year, or more frequently if the situation arises, particularly during preparatory phase of the Project.

ii) Agenda Circulation and Quorum

A minimum of 2/3rd members would form the quorum for the GB meetings. Agenda of the meeting and Proposals should be circulated by the Member-Secretary well in advance to all members, at least seven days ahead of the meeting date. The proceedings of the GB meetings should be circulated to all the members/ attendees within reasonable timeframe, after the meeting is concluded.

iii) Roles and Responsibilities

GB would rigorously review the project progress vis-à-vis annual plans, and would also monitor the disbursement status. It will review the functioning of PMU (society) regularly and guide to prepare proposals for HPC, whenever necessary for the smooth implementation of the Project.

GB will accord administrative and financial sanctions of all individual schemes, proposals or procurement of goods & services amounting to 2 million INR and above, but not exceeding 50 million INR.

(3) Management Decision Making of the Society: General Body

General Body will be a decision-making body of the Society on all matter as required under the HP Societies Registration Act, 2006. The General Body of the Society will comprise of the members of the Governing Body, PMU officers in the rank of DFO and above, Forest Circle Coordination Unit (FCCU) Officers of all the project districts, and Chiefs Conservator of Forests (CCFs) of all the identified Circles where the project activities will be undertaken. The General Body will meet once in a year to conduct the Annual General Meeting (AGM) of the Society. Proceedings of the AGM meetings will be circulated to all the members/ attendees within reasonable timeframe, after the meeting is concluded.

(4) Management of the Project: Executive Committee of PMU

Since the Governing Body of the Society would be meeting on quarterly basis, it would be essential to have some institutional arrangements in place at the operation level for quick decision making, close supervision, guidance and follow-ups. Thus, Governing Body will entrust day-to-day responsibilities with the Executive Committee that will be constituted at the state level within PMU. The composition of the Executive Committee is given in **Table 2.3**.

Table 2.3 Proposed Composition of Executive Committee of PMU

No.	Position	Designated Person
1	Chairperson	Chief Project Director
2	Member	all Additional/ Joint Project Directors of PMU
3	Member-Secretary	Project Director (Administration & Finance)

Source: JICA Study Team (2017)

State programme managers may participate as ‘Special Invitees’ in the EC meetings for providing insights and/or to share views or concerns in the interest of the project implementation.

The indicative i) frequency of meetings, ii) agenda circulation and quorum, iii) roles and responsibilities of the Executive Committee of PMU is described in the following box.

i) Frequency of Meetings

The Executive Committee will meet at least once every month, or more frequently if the situation arises, particularly during preparatory phase of the Project.

ii) Agenda Circulation and Quorum

As far as possible efforts would be made that all of the members participate in EC meetings, however minimum of 2/3rd members would form the quorum of the EC meetings. Agenda of the meeting and proposals should be circulated by the Member-Secretary well in advance to all members, at least three days ahead of the meeting date. Proceedings of the EC meetings should be circulated to all the members/ attendees within reasonable timeframe, after the meeting is concluded.

iii) Roles and Responsibilities

EC will provide environment for sharing proposals on any areas of project functioning, and will encourage the members to provide ideas, views, and concerns. Member-Secretary of EC will keep systematic records and the proceedings of all such meetings.

EC would keep track of the project implementation, and would be responsible to guide, issue instructions, prepare guidelines, execute capacity development plan, establish and operate M&E, GIS/ MIS systems, undertake field visits, disseminate project information and provide-hand holding support in field, in almost all respect to ensure efficient implementation of the Project. The EC will also be responsible for timely submitting reimbursement claims, and institute concurrent audits as well as statutory audits on regular basis.

A designated officer in PMU will systematically maintain records of all meetings (HPC, GB, EC and AGM), and will make it available to reviewing authorities as per requirements. Falling in line with the authorities entrusted by the Governing Body, Executive Committee (EC) may accord administrative and financial sanctions of all individual schemes, proposals or procurement of goods & services not exceeding 2 million INR.

3 Details of Proposed Project Implementation Units

3.1 Proposed Structure of Project Management Units (PMU)

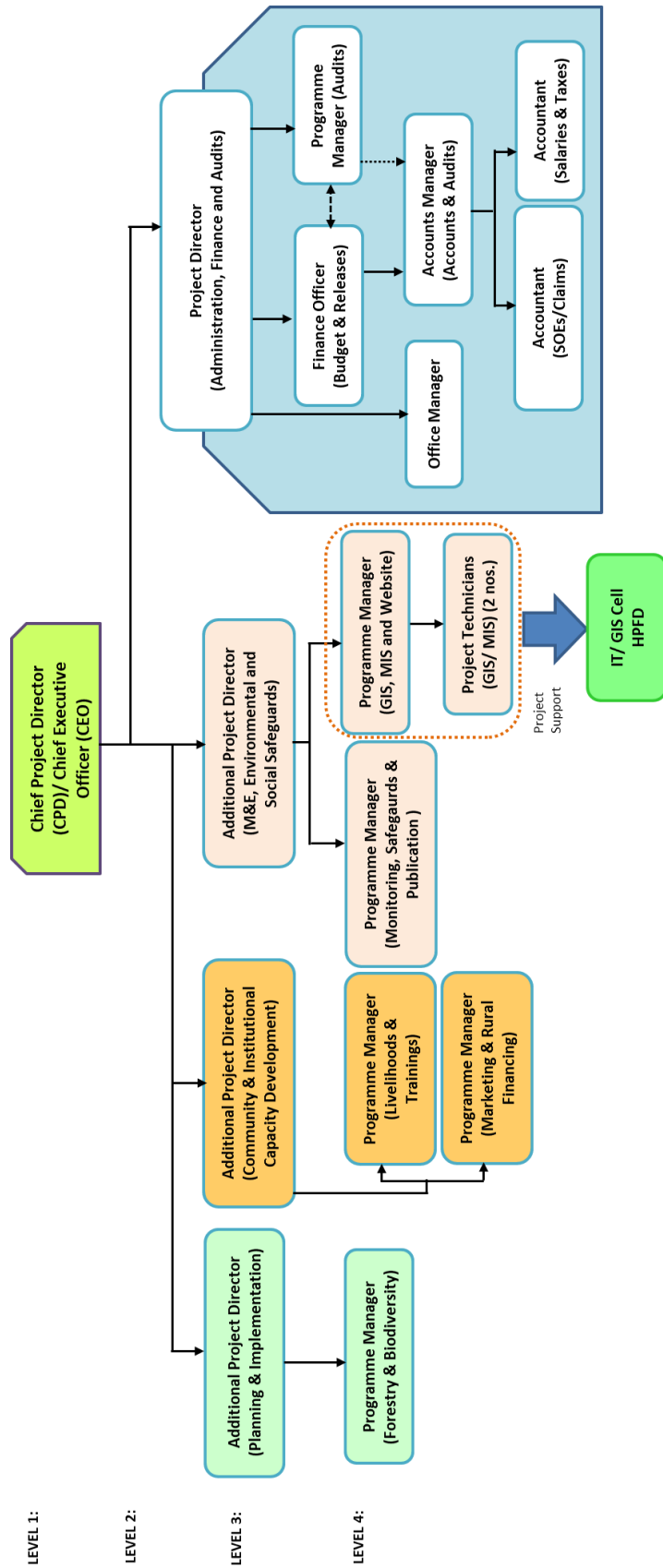
The autonomous society (PMU) would be headed by Chief Project Director (CPD) in the rank of CCF or above. S/he would also act as CEO of the Society and would chair the Executive Committee. S/he would be Member-Secretary to the Governing Body of the Society as well as to HPC constituted for the Project.

At the state level, CPD would be supported by a team officers and professionals that would include Project Director in the rank of DCF, Additional Project Directors (APDs) in the rank of DFO, Finance Officer, Programme Managers (PMs) and other support staff hired from open market including MIS and GIS professionals, accountants and ministerial staff. To augment various skill sets, PMU would further be supported by a team of experts constituting Project Management Consultants (PMC). As a part of the society, PMU would also establish FCCUs and FTUs to work as extended arms and support project implementation and supervision working along with the project divisions and the Gram Panchayats.

PMU will manage the project funds, extend funds to the implementing units – project divisions and Gram Panchayats, guide and supervise project implementation to achieve results within stipulated timeframe adopting the prescribed processes, collate and consolidate the expenditure statements from divisional and field offices, and prepare Statement of Expenditures (SOEs) for getting reimbursement of claims from JICA.

All the officers in PMU would either be on deputation from HPFD/ Finance Department for minimum of three years or as per existing deputation tenure specified in government rules or hired on contract from open market directly or recruited through a qualified and reputed placement/ govt. outsourcing agency. PMU would adopt the existing government orders for outsourcing staff for

hiring ministerial staff (steno/ computer operators, drivers, security/ utility persons etc.). Female candidates would be encouraged by PMU to join at different operational levels of the Project. The proposed structure of PMU is given in **Figure 3.1**.



Source: JICA Study Team (2017)

Figure 3.1 Proposed Structure of PMU

The proposed composition of the PMU will be as follows:

Table 3.1 Proposed PMU Staffing

Level	Rank	Position	Number	Source	Mode	Engagement
Key Staff						
Level 1	APCCF/ CCF	Chief Project Director	1	State Forest Department	Deputation	Full Time
Level 2	CF/ DCF	Project Director	1	State Forest Department	Deputation	Full Time
Level 3	Controller (SAS)	Finance Officer	1	State Finance Department	Deputation	Full Time
Level 3	DFO	Additional Project Director	3	State Forest Department	Deputation	Full Time
Level 3		Program Manager/ Chartered Accountant	1	Open Market	Contract	Full Time
Level 4		Program Manager	5	Open Market	Contract	Full Time
Level 5		Technicians	2	Open Market	Contract	Full Time
Level 6		Accounts Manager	1	Open Market	Contract	Full Time
Level 6		Office Manager	1	Open Market	Contract	Full Time
Level 7	Clerical Staff	Accountants	2	Open Market	Contract	Full Time
Total Key Staff			18			
Supporting Staff - Outsourcing						
Level 7	Clerical Staff	Personal Secretary	1	Open Market	Outsourcing	Full Time
Level 8	Clerical Staff	Personal Assistant	1	Open Market	Outsourcing	Full Time
Level 9		Stenographers	4	Open Market	Outsourcing	Full Time
Level 10		Computer Operators	8	Open Market	Outsourcing	Full Time
Level 10		Drivers	8	Open Market	Outsourcing	Full Time
Level 11		Security Staff	4	Open Market	Outsourcing	Full Time
Level 12		Peon	10	Open Market	Outsourcing	Full Time
Level 12		Housekeeping	2	Open Market	Outsourcing	Full Time
Total Support Staff			38			
Total PMU Staffing			56			

Source: JICA Study Team (2017)

Tentative responsibilities for the key staff positions in the PMU is given in **Table 3.2**.

Table 3.2 Responsibilities of Key Staff in PMU

No	Position	Rank	Number	Key Responsibilities	Remarks
Key Staff					
1	Chief Project Director	CCF/ APCCF	1	Overall technical, financial and administrative; ensure Time-Bound Action Plan, Overall project Implementation Plan; GB, HPC and Inter-sectoral convergence meetings; annual budgets, releases and Reimbursement Claims	Full Time; From FD on deputation for minimum 3 years
A. Administration, Finance and Audits Unit					
1	Project Director (Administration, Finance and Audits)	DCF/ CF	1	Overall supervision, administration & finance aspects; managing contracts - human resources, outsourcing, procurement of goods & services; annual budget & releases, expenditure; claims and fund disbursement, facilitate statutory and concurrent audits; RTI and Grievance redressal issues	Full Time; From FD on deputation for minimum 3 years

No	Position	Rank	Number	Key Responsibilities	Remarks
2	Finance Officer	Controller (SAS)	1	Supervising Accounts Manager, implement accounting software based double-entry system; monitoring financial progress and expenditures, ensure timely budget/ releases, utilization and SOEs/ claims & tax returns, coordinate with FCCUs/ FTUs; coordinate with other stakeholders; in addition, would assist PD to prepare agenda for EC, GB, HPC, AGM meetings;	Full Time; From FD on deputation for minimum 3 years
3	Programme Manager (Audits)	Sr. Manager	1	Assist in establishing financial control systems, establish financial management and project accounting systems, facilitate statutory audits, conduct/ supervise Internal/ Concurrent audits, capacity development of stakeholders, coordinate with other stakeholders	Full Time Chartered Accountant; Open Market
4	Office Manager	Manager	1	Assist in logistics and protocols; O&M of vehicles, office, equipment, security, store; organizing meetings & events; meeting letters & communications, document and maintain proceedings & all records and contracts,	Full Time; Open Market
5	Accounts Manager (Accounts & Audits)	Manager	1	Assist and maintain project accounts; bank operations, reconciliation of funds, seeking Utilization Certificates and assist audits, supervise Accountants	Full Time; Open Market
6	Accountant (SOEs/ Claims)	Clerical Staff	1	Assist in day-to-day accounting activities; preparation and maintain SOEs; prepare claims for submission to CAAA/ JICA; reconciliation of annual budgets and disbursements; facilitate and assist audits	Full Time; Open Market
7	Accountants (Salaries & Taxes)	Clerical Staff	1	Assist in day-to-day accounting activities; preparation and maintain salary/ remunerations details and payments; computation and deposit of taxes; assist audits	Full Time; Open Market
B. Planning & Implementation Unit					
1	Additional Project Director (Planning & Implementation)	DFO	1	Overall planning & implementation of interventions; annual plan, budget and approvals, technical guidance, biodiversity/ ecosystems conservation; ecosystem health card and supervision and coordinate with DFOs/ circle and FCCUs	Full Time; From FD on deputation for minimum 3 years
2	Programme Manager (Forestry and Biodiversity)	Sr. Manager	1	Assist in annual planning and implementation of PFM and Non-PFM Models and promotion of Forestry models and NTFP interventions in project areas, creation of people's biodiversity register, micro planning, design templates, guidelines and manual, monitoring & reporting and capacity building; coordinate with other stakeholders	Full Time; Open Market
C. Community and Institutional Capacity Development Unit					
1	Additional Project Director (Institutional and Capacity Development)	DFO	1	Overall planning & implementation of interventions; annual plan, technical guidance and supervision, coordinate for inter-sectoral convergence; support to leverage funds; strategize gender mainstreaming and women/ vulnerable group empowerment, develop partnerships & networks; and coordinate with DFOs/ circle and FCCUs	Full Time; From FD on deputation for minimum 3 years

No	Position	Rank	Number	Key Responsibilities	Remarks
2	Programme Manager (Livelihoods & Training)	Sr. Manager	1	Assist in annual planning and implementation of livelihood promotion; design small business/enterprise for community institutions for income generation, cluster promotion; capacity building and trainings, design templates, guidelines and manual, monitoring & reporting and capacity building, coordinate with other stakeholders	Full Time; Open Market
3	Programme Manager (Marketing & Rural Financing)	Sr. Manager	1	Assist in annual planning and implementation of livelihood promotion; value chain and market analysis, facilitate rural financing, design templates, guidelines and manual, monitoring & reporting and capacity building, coordinate with other stakeholders	Full Time; Open Market
D. M&E, Environment and Social Safeguards Unit					
1	Additional Project Director (M&E, Environmental and Social Safeguards)	DFO	1	Overall M&E – GIS/ MIS and research; study contract management, develop and supervise ToRs for studies; Guidelines and capacity building on M&E initiative, progress tracking and reporting on performance indicators; coordinate with DFOs/circles and supervise & guide FCCUs	Full Time; From FD on deputation for minimum 3 years
2	Programme Manager (Monitoring, Safeguards & Publication)	Sr. Manager	1	Assist in monitoring and safeguards compliances, preparing quarterly and annual reports; preparing guidelines and manuals; project publicity and information dissemination, events/ workshops; develop knowledge material, publish newsletters, reports; coordinate with other stakeholders	Full Time; Open Market
3	Programme Manager (GIS, MIS and Website)	Sr. Manager	1	Assist in GIS based M&E, maintain GIS systems and equipment, software inventory & maintenance, procurement of imageries and spatial analysis, map production for planning & decision making, monitoring & reporting; establish GIS operations at all levels; coordinate with IT Cell of HPFD; coordinate for progress tracking and reporting; coordinate with other stakeholders	Full Time; Open Market/ Deputation
4	Project Technicians (GIS/ MIS)	Profession als	2	Assist in maintaining systems, GIS/ MIS operations at all levels, computer generated analytical GIS maps, MIS reports, website and digital repository, software inventory & maintenance; coordinate with other stakeholders	Full Time; Open Market
	Total Key Staff		18	Deputation/ Direct Hire	Full Time
	Total Support Staff		38	Outsourcing	Full Time
	Total PMU Staff		56		

Source: JICA Study Team (2017)

3.2 Proposed Structure of Forest Circle Coordination Unit (FCCU)

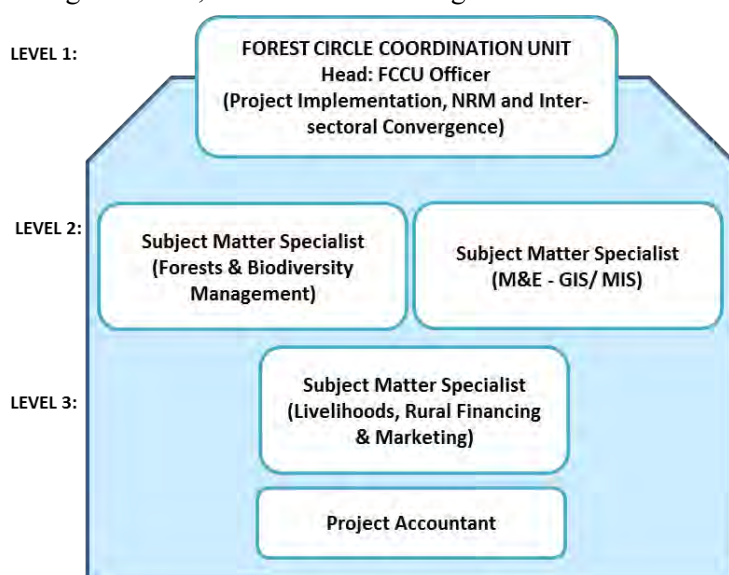
Forest Circle Coordination Unit (FCCU) will be created at district level where the Project would be implemented, and would function as the dedicated and extended wing of the PMU for project implementation and as a subordinate office of the autonomous society. FCCU would be headed by a DFO rank officer and would be designated as FCCU officer. S/he will coordinate and facilitate project implementation at the division level, and would extend all technical inputs and guidance on day-to-day basis both to the forest divisions and FTUs. The FCCU will coordinate with the

project divisions through an officer in the rank of ACF designed as ‘Division Nodal Officer’ who will also act as forestry expert. Officer Order/ Notification to effect this arrangement would be brought out by HPFD during implementation phase.

FCCU will receive funds for regular operation of FCCU as well as FTUs. FCCU will operate and report expenses to PMU, and will act as the controlling and supervising unit for the project implementation. In addition, FCCU would also be involved to channelize funds to GPs/ FWCs through as system of ‘Fund Advice Note’ to be prepared and recommended by FCCU officer to PMU for release of funds to GPs/ FWCs.

FCCU will also coordinate with the district administration for inter-sectoral convergence, participate in meetings at circle and district level, and extend support for planning, preparing estimates, monitoring, supervision and follow-ups, documentation and reporting the physical and financial progress. FCCU team will be guided by the Project Operation Manual as well as PMU.

FCCU officer will be supported by the subject matter specialists (SMSs) for supervising and guiding project implementation as well as the works carried out by NGOs and resource organisations, and facilitate convergence at the district level.



Source: JICA Study Team (2017)

Figure 3.2 Proposed Structure of FCCU

SMS (Forests & Biodiversity Management) would be responsible for extending assistance and guidance and supervision of forestry & biodiversity interventions, whereas SMS (M&E - GIS/ MIS) will be responsible for the data processing, coordination, supervision and guidance, monitoring, and support MIS/ GIS requirements, and SMS (Livelihoods, Rural Financing and Marketing) would be responsible for guiding and supervising livelihoods initiatives, coordinating

with financial institutions, product designing, packaging and marketing, facilitating licensing, etc. Project Accountant will coordinate with divisions and FTUs, and assist in maintaining the project accounts adopting double-entry accounting system using accounting software, and timely prepare SOEs for onward submission. Female candidates would be encouraged to join the Project at various positions. The structure of FCCU is given in **Figure 3.2**.

The proposed composition of FCCU is presented in **Table 3.3**.

Table 3.3 Proposed FCCU Staffing (Deputation/ Direct Hire/ Outsourcing)

Level	Rank	Position	Number	Source	Mode	Engagement
Key Staff						
Level 1	DFO	FCCU Officer	1	State Forest Department	Deputation	Full Time
Level 2		Subject Matter Specialist	3	Open Market	Contract	Full Time
Level 3		Project Accountant	1	Open Market	Contract	Full Time
Total Key Staff			5			
Supporting Staff						
Level 4		Computer Operator	1	Open Market	Outsourcing	Full Time
Level 5		Driver	1	Open Market	Outsourcing	Full Time
Level 6		Peon	1	Open Market	Outsourcing	Full Time
Total Support Staff			3			
Total FCCU Staffing			8			

Source: JICA Study Team (2017)

Tentative responsibilities for the key staff positions in FCCU is given in **Table 3.4**.

Table 3.4 Responsibilities of Key Staff in FCCU

	Position	Rank	Nr	Key Responsibilities	Remarks
	Key staff				
1	FCCU officer	DFO	1	Overall technical, financial and administrative, annual plan, SOEs, project reviews; coordination with the project divisions, facilitate inter-sectoral convergence at district level, monitoring & reporting and capacity building	Full Time; From FD on deputation for minimum 3 years or more
2	Subject Matter Specialist (Forests & Biodiversity Management)		1	Assist in annual plan and implementation; guidance and supervision of forestry and biodiversity interventions, data compilation, reporting and capacity building; coordinate with other stakeholders	Full Time; Open Market
3	Subject Matter Specialist (M&E – GIS/ MIS)		1	Assist in monitoring annual plan; MIS/ GIS data compilation, progress monitoring based on MIS and GIS, reporting and capacity building; coordinate with other stakeholders	Full Time; Open Market
4	Subject Matter Specialist (Livelihoods, Rural Financing and Marketing)		1	Assist in annual plan and implementation; guide on livelihoods; small business/ enterprise plan, inter-sectoral convergence; assist in value chain and market analysis, rural financing, support cluster development, extend support to leverage funds, monitoring & reporting and capacity building; coordinate with other stakeholders	Full Time; Open Market
5	Project accountant		1	Assist in fund management & releases, expenditure tracking, utilization certificates, SOEs, tax filing, audits etc.; coordinate with divisions and FTUs for financial progress reporting	Full Time; Open Market
	Total key staff		5	Deputation/ Direct Hire	Full Time
	Total support staff		3	Outsourcing	Full Time
	Total FCCU staff		8		

Source: JICA Study Team (2017)

3.3 Proposed Structure of Field Technical Unit (FTU)

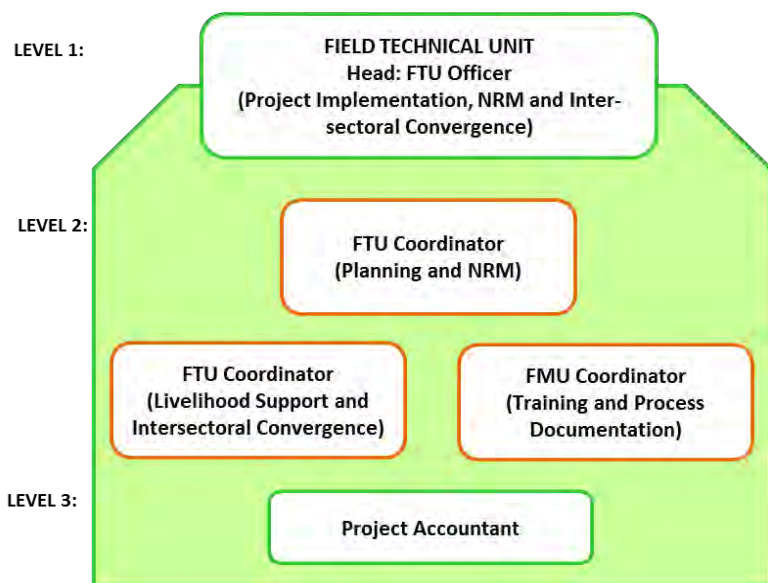
Field Technical Unit (FTU) will be created as an extended arm of PMU and as a part of the autonomous society, and could be housed within the range office. FTU would be headed by a deputy ranger rank officer/ block officer on deputation from the Forest Department, and would be designated as FTU officer. S/he will facilitate project implementation at the range level, and would

extend all technical inputs and guidance at field level on day-to-day basis. FTU will be guided and supported by FCCU, and will coordinate with the project ranges through an officer in the rank of deputy ranger/ ranger designed as ‘Range Nodal Officer’ who will also act as forestry expert. Officer Order/ Notification to the effect this arrangement would be brought out by HPFD during implementation phase.

FTU will operate and report expenses to FCCU that will act as the controlling and supervising unit for the project implementation. FTU would not be involved to channelize funds to GPs/ FWCs, however ‘Fund Advice Note’ for release of funds would be prepared and recommended by FTU officer.

FTU will coordinate and support forest range units involved in the Project as well as guide and facilitate the GPs/ FWCs and community institutions for planning, preparing estimates, monitoring, supervision and follow-ups, documentation and reporting the physical and financial progress. FTU team will be guided by the project operation manual as well as FCCU/ PMU.

FTU officer will be assisted by three FTU coordinators specializing in areas like – Planning and NRM, Livelihood Support and Inter-sectoral Convergence, Training and Process Documentation, and support staff to manage project activities. Female candidates would be encouraged to join the Project at various positions. FTU would be further supported by NGO particularly, for community mobilization and social processes.



Source: JICA Study Team (2017)

Figure 3.3 Proposed Structure of Field Technical Unit (FTU)

FTU coordinator (Planning and NRM) will be responsible for facilitating Forest & Ecosystems Management Plan (FEMP), and will also be responsible for progress monitoring and reporting including data compilation and ensuring the Project GIS and survey requirements. FTU coordinator (Livelihood Support and Inter-sectoral Convergence) will guide the NGOs and resource organisations during planning and IGAs initiatives, and facilitate preparation of Community Development and Livelihood Improvement Plan (CD&LIP). FTU coordinator (Training and Process Documentation) will act as a resource person for village and community institutions for institutional capacity building as well as facilitate or execute the training activities for the village/ community institutions. S/he would also coordinate with fellow FTU coordinators as well as NGOs to understand specific training needs, and accordingly plan for capacity development initiatives. Project Accountant will coordinate with the forest range offices as well as village institutions to

maintain the project accounts adopting double-entry accounting system using accounting software, and timely prepare SOEs for onward submission as well as look after project MIS requirements. The structure of FTU is given in **Figure 3.3**.

The proposed composition of FTU is described in **Table 3.5**.

Table 3.5 FTU Staffing (Proposed – Deputation/ Direct Hire/ Outsourcing)

Level	Rank	Position	Number	Source	Mode	Engagement
Key staff						
Level 1	Deputy Ranger	FTU officer	1	State Forest Department	Deputation	Full Time
Level 2		FTU coordinator	3	Open Market	Contract	Full Time
Level 3		Project accountant	1	Open Market	Outsourcing	Full Time
Level 4		Computer operator	1	Open Market	Outsourcing	Full Time
Total key staff			6			

Source: JICA Study Team (2017)

Tentative responsibilities for the key staff positions in FTU is given in **Table 3.6**.

Table 3.6 Responsibilities of Key Staff in FTU

	Position	Rank	Nr	Key Responsibilities	Remarks
	Key Staff				
1	FTU officer	Dy. Ranger/ Block Officer	1	Overall technical, financial and administrative, annual plan, SOEs, and project reviews & reporting, facilitate inter-sectoral convergence at block level	Full-Time; From FD on deputation for minimum 3 years or more
2	FTU coordinator (Planning and NRM)		1	Assist in annual planning; supervise and guide implementation, afforestation, pasture and NTFP interventions, GIS and assist in assessment surveys, monitoring & reporting; coordinate with other stakeholders	Full Time; Open Market
3	FTU coordinator (Livelihood Support and Inter-Sectoral Convergence)		1	Assist in annual planning and implementation; guide and facilitate microplanning, livelihood; small business/ enterprise plans, inter-sectoral convergence; cluster promotion; capacity building, monitoring & reporting; coordinate with other stakeholders	Full Time; Open Market
4	FTU coordinator (Training and Process Documentation)		1	Assist in annual planning and implementation; execute capacity building plan, gender mainstreaming; assist to develop partnerships & networks, act as resource for institutional capacity building; monitoring & reporting; coordinate with other stakeholders	Full Time; Open Market
	Total key staff		4	Deputation/ Direct Hire	Full Time
	Total support staff		2	Outsourcing	Full Time
	Total FTU staff		6		

Source: JICA Study Team (2017)

3.4 Other Implementing/ Facilitating Institutions

(1) Circle Offices of HPFD

Circle offices of HPFD having their jurisdiction in the project divisions will supervise and review the project implementation along with their respective regular and designated overseeing responsibilities, and would provide vital link between the Project and regular departmental

activities. The circle offices will also be responsible for cross-checking project works vis-à-vis financial and physical progress reporting, and would participate in project events. Circle offices would also be nodal for Grievance Redressal under the Project as per the project M&E system. PCCF (HoFF) through an office order would instruct these offices to supervise and support project activities in routine manner within their jurisdictions.

(2) Project Management Consultants (PMC)

As a part of the project design and institutional arrangements, PMC team will be deployed at state level to assist PMU in managing the Project and extend required technical guidance for limited number of years. The team composition of PMC would carry skill set and experience to complement and supplement PMU initiatives, provide technical support in preparing guidelines and procedures as well as provide an independent view on project implementation.

(3) Specialized Agencies/ Resource Organisations

Skill training required for SHGs and cluster level enterprises would be undertaken by the specialized and credible organisations having proven history of delivering the technical training programmes to the similar type of community institutions.

The services of the Specialized Agency/ Resource Organisations will be procured by PMU through a local competitive bidding process, conforming to the applicable procurement guidelines. Quality and cost based selection (QCBS) method will be adopted by PMU.

(4) District Planning Committee (DPC)

Inter-sectoral linkages would be ensured through the existing institutions in place at state, district and block level. The 74th Constitutional Amendment Act mandated the establishment of District Planning Committees (DPCs) for consolidating plans prepared by Village Panchayats and Municipalities in the district into the draft district plan.

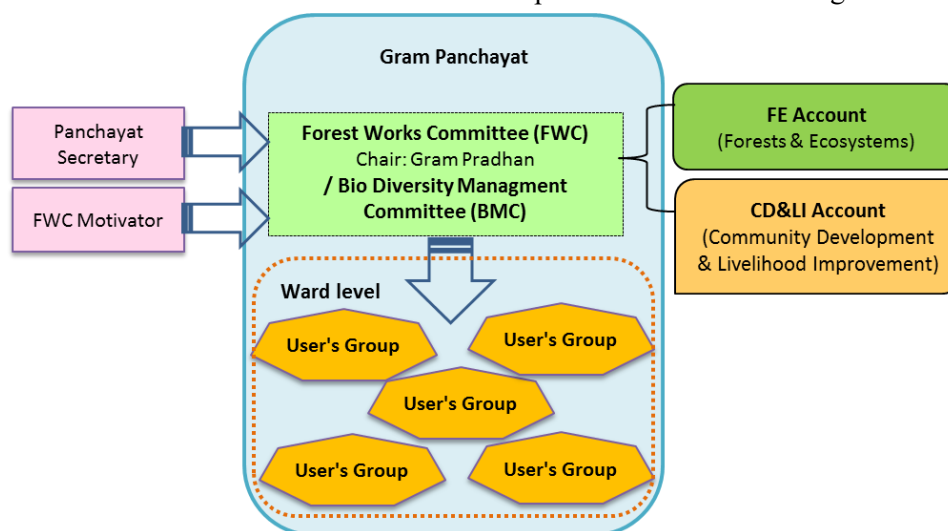
The idea is to strengthen existing institutional mechanism rather creating an additional system at district. DFO in a division is already coordinating with district administration on regular basis for issues related with Forest Conservation Act (FCA), Forest Rights Act (FRA), forests related issues, MGNREGS programme etc.

Adopting the system in place for inter-sectoral linkages, PMU at state level will coordinate with the Planning Department, whereas at the district level FCCU officer will assist and coordinate with the steering committee chaired by district collector. The steering committee is created to assist DPC for preparing draft district plan considering the development plans prepared by each Block Level Planning Committee for all Panchayat Samities within their jurisdictions. Similarly, FTU officer will assist and coordinate with Block Level Planning Committee whose Member-Secretary is block development officer.

4 Proposed Community Implementation Organisation: Gram Panchayat

4.1 Overview

The key institution to be engaged in the Project would be Gram Panchayats (GPs) (**Attachment II.4.1.2**). As the main community level implementing body for the purpose of the Project, Gram Panchayat through its resolution (sample resolution presented in **Annex 1**) would create a sub-committee in name of ‘Forest Works Committee (FWC)’ comprising 7~9 members having representation from all wards of a Gram Panchayat, and key members elected in a Gram Panchayat. The creation of the sub-committee must be reported to the PRI authorities by Gram Pradhan as per requirement under the Panchayati Raj Act, 1994. At the same time, wherever required and if possible under the Biological Diversity Act, 2002 provisions, the Project will take advantage of Biodiversity Management Committee (BMC), engaging for works in and around protected areas. The FWC would act as executive committee for the beneficiaries who would directly participate in the Project or get benefited in short/ long-term in some way due to project interventions. Ward-wise list of such direct beneficiaries (one adult member from each household) would be created at first place, and will be kept with the Gram Panchayat Secretary as ‘Membership Register’. Out of this membership list, User’s Groups will be created at ward level for executing the site-specific works for the Project. Furthermore, the user’s groups to be targeted in the Project are intended to include similar functions as well as roles of VFDS depicted in the HP PFM Regulations 2001.



Source: JICA Study Team (2017)

Figure 4.1 Proposed Institutional Arrangements at Gram Panchayat

Indicative proposed institutional arrangements for FWC is presented in **Annex II**.

Annex I: Sample Resolution by Gram Panchayat

Constitution of Forest Works Committee (FWC) for HPFEM&LIP

Proposal No.: _____ Date: _____

Name of Gram Panchayat _____

Block: _____ District: _____

Today, _____ (date) at _____ (time) and at _____ (place/ venue) in the meeting chaired by Gram Pradhan of the Gram Panchayat, and with the consent of the members as per the attendance of the meeting, hereby constitutes the Forest Works Committee (FWC) for a period of **two** years following the government notification no. _____ dated _____. This committee shall be reconstituted prior to expiry of tenure.

Details of the members of the Forest Works Committee (FWC)

No.	Member Category	Name	Father's Name	Aadhar No.	Ward No.	Contact No.	Signature
1	Head						
2	Women						
3	Women						
4	SC/ ST						
5	SC/ ST						
6	Ward						
7	Ward						
8	Ward						
9	Ward						
10	Panchayat Secretary						
11	Member Secretary						

Following would be the key functions of the above constitute committee:

- Shall function as envisaged in the guidelines and manual of the project.
- Shall collectively prepare plan of action and execute the same for each financial year with community participation.
- Shall manage the funds efficiently, maintain proper financial records, and timely submit statement of expenditures every month/ quarter.
- Shall facilitate and provide all required records and information to the audit teams.
- Shall follow the instructions issued by the project authorities from time-to-time.

(Signature & Stamp)
Gram Pradhan Name

(Signature)
Member-Secretary Name

(Signature & Stamp)
Panchayat Secretary Name

Annex II: Proposed Institutional Arrangements of FWC

(1) Composition of FWC

Gram Sabha would be organized for constituting the committee. FWC will be headed by Pradhan (or any other eligible Panchayat member) and will have two representing SC/ ST community or weaker section of the society as decided in the Gram Sabha. Women shall constitute 50% or more number of members in a committee. The Pradhan as head of FWC will be assisted by educated and knowledgeable person to be identified from within the village panchayat. The person should be willing to participate and can provide time for guiding and supervising project interventions, as well as also facilitate community action, meetings, events, trainings and other associated activities. This person would be called as 'FWC Motivator', and will act as Member-Secretary to the FWC. The tenure of the committee will be for two years, and need to be reconstituted prior to expiry. The composition would be as follows:

Table 1 Composition of the Forest Works Committee (FWC)

No.	Member Category	Members	Remarks
1	Head of Committee	1	Pradhan or eligible Panchayat member (as decided in Gram Sabha)
3	ST/ SC	2	Literate/ educated; if possible, one from each category; else as applicable
4	Wards	2~4	Representing participating wards
6	Panchayat Secretary	1	Will be member with no voting rights
5	Member Secretary	1	FWC Motivator
Total Members		7~9	

Source: JICA Study Team (2017)

(2) User's Group under FWC

The works would be executed on ground by FWC through User's Groups. Depending on the number of site specific activities User's Group would be formed at Ward-level under FWC out of the Membership Register. User's Group would be represented by one member per family. No other members from the same family could be included in other User's Group. Also, no member of a User's Group could also be a member in other User's Group. The decision of formation of User's Group would be taken in an open meeting called by Gram Pradhan, and attended by no less than 1/5th of adult members in a Gram Sabha.

(3) Bank Accounts for Implementing Project Interventions

Two bank accounts would be opened in nearest service area bank branch or post office, viz., a) Forests & Ecosystem Management (FE account), and b) Community Development & Livelihood Improvement (CD&LI account). These accounts would be operated by joint signatory as per the provision made in the Panchayati Raj Act, 1994.

(4) Office Space

Office space for operation of FWC would be provided by the Gram Pradhan within the Panchayat office space for the project period, and shall notify about the allocation of space to the project authorities. Strengthening of the FWC office would be supported by the Project.

(5) Notification by the Panchayati Raj Department

A Government Order (GO) need to be issued by the Panchayati Raj Department to effect the provisions of creation of sub-committee for the Project, opening of bank accounts to receive project funds, procedure of fund utilization and reporting, providing work space in the Panchayat building, sign MoU with the FD for executing forestry works as per project norms, and for operation and maintenance of asset created under the Project, etc.

(6) Project Planning

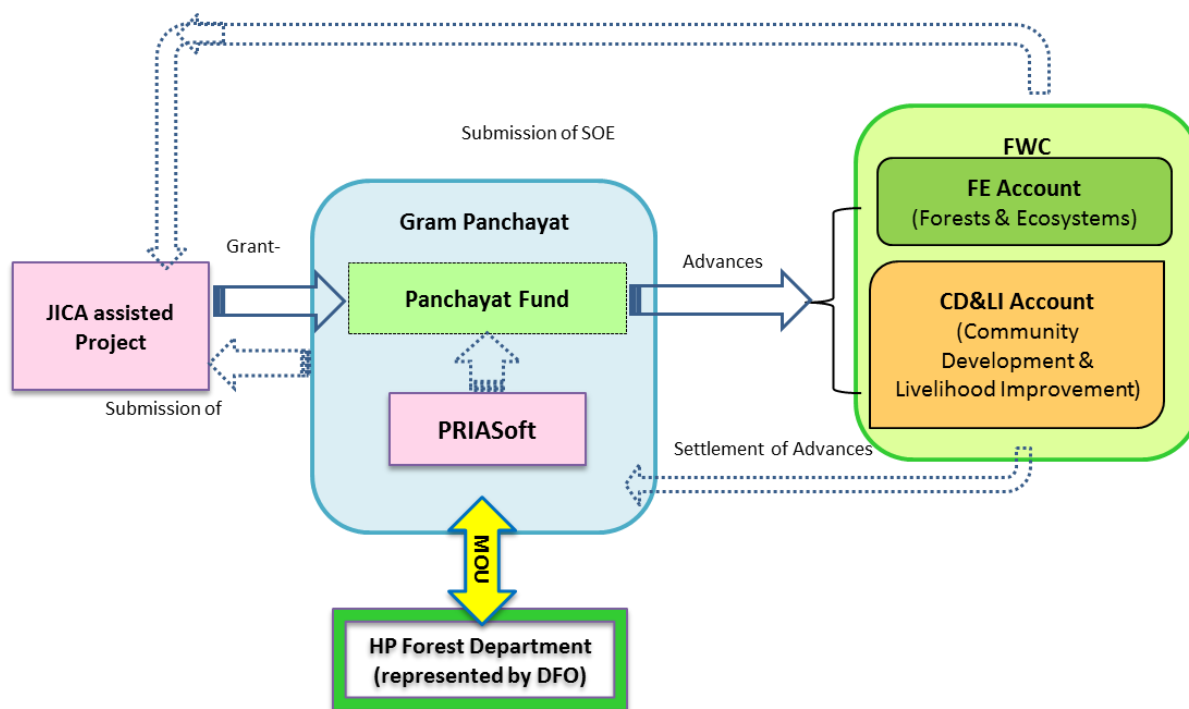
Following the participatory planning processes and with involvement of community as well as the forest department, FWC will prepare two plans, viz., a) Forest Ecosystems Management Plan (FEMP), and b) Community Development and Livelihood Improvement Plan (CD&LIP). These plans would first be approved by the Gram Sabha. The tenure of these plans would be 3 years or more, if required. Annual Implementation Plans (AIPs) would be prepared for every financial year for each of these plans.

The process of preparing these plans afresh will be initiated 6 months prior to the expiry. For the project implementation MoU would be signed between the GP (FWC) and the Forest Department. The activities planned in these plans shall be financed through two separate accounts to keep track of the financial transaction and transparency. The flow of the fund is given in **Figure 1**. The outline of the FEMP and CD&LIP are given in **Part II Chapter 3 (Section 3.8.2)**.

(7) Fund Flow to FWC

The funds would flow to respective village level institutions (FWCs) for executing the plans. The funds from the project would be first received by the Gram Panchayat in the 'Panchayat' fund, and from the 'Panchayat Fund' the requisite funds will be given as advance to FWC in respective bank accounts viz., 'FE account' and 'CD&LI account'. FWC would make expenditures as prescribed in the approved plans following project norms, and will also report the expenditures to the Gram Panchayat to set-off the advances.

These financial transactions would be captured in PRIASoft (an accounting software for PRIs - refer **appendix 1**) as well as in accounting software of the Project. Through its institutional arrangements, the Project would also extent accounting and data-entry support at the Panchayat level.



Source: JICA Study Team (2017)

Figure 1 Fund Flow to the Gram Panchayat under the Project

The funds according to the AIP formulated for each financial year referring the approved FEMP would be received in the 'FE account', whereas the funds for community development & livelihood improvement allocated as per the approved CD&LIP in similar manner would be received in the 'CD&LI account'.

The funds could be given to the village institutions only after beneficiary share in terms of 'membership fee' is collected as per the Membership Register and deposited in the FE account, and reported by the Pradhan as head of FWC.

The membership fee could be collected from all recognized houses falling in a Gram Panchayat as far as possible to build in the stakes of the large set of community as well as to equitably spread the benefits from the project. The fee is basically realization of a minimal cost up-front for receiving the benefits from the target forest areas or ecosystem or in other words it is PES by the first users, and would be utilized to create a Corpus Fund.

Table 2 Funds for Implementation

No.	Items	Share/ Contribution	Remarks
1	Beneficiary Share	Rs.200 per household – one time (or decided by Gram Sabha)	Contribution to Corpus fund
2	Project Fund	Matching Contribution – one time	Contribution to Corpus fund
3	Project fund	As per approved FEMP	For implementation of FEMP
4	Project fund	As per approved LIP	For implementation of LIP

Source: JICA Study Team (2017)

The funds collected as beneficiary share along with the Project contribution to the Corpus would be fix deposited in a nationalized bank or post office as 'Corpus Fund'. This corpus fund would act as security for the village institution in future, and could be utilized for maintenance of forests and ecosystems after cycle of interventions gets over during the project period and/or beyond the Project.

(8) Method of Executing Project Works

The funds through the Project are available for executing works adopting PFM mode and Department mode. These works would be executed directly by the FWC or the department respectively. Some of the activities would also be executed by the FD by engaging FWC members/ User's Groups as per MoU. **Table 3** depicts category of works and method of executing these works.

Table 3 Method of executing Project Works by FWC

No.	Mode	Responsibility	Method of Executing Works	Category of Works
1	PFM	FWC/ GP	Direct through User's Group/ SHGs as per LIP	Planning, small structures, EPA, in-situ training, livelihood improvement works, NTFP Cultivation on private lands/ clusters etc.
2	Department	FD	MOU between GP/ FWC and DFO as per FEMP	Plantations and forestry operations, nurseries, SMC & SWC/ DLT works, pasture management, protection – plantation and forest fire etc.

Source: JICA Study Team (2017)

(9) MoU between FWC/ GP and HPFD

The Memorandum of Understanding (MoU) between FWC/ GP represented by the Gram Pradhan / President FWC on one hand and HPFD represented by DFO on other hand would act as an instrument for executing project works as per the FEMP as well as for joint management of forests and ecosystems. The MoU will spell out the roles, regulations, rights & responsibilities and rewards/ incentives for executing project works as well as sustainably manage forest resources/ ecosystems together with equitable sharing of usufructs. The approved FEMP will be attached and will form part of the signed MoU for records and monitoring purposes.

(10) Maintenance of FWC Records and Accounts

FWC Motivator would be responsible for maintaining membership register, project works register, proceeding register, expenditure bill book, complaint register and community development and livelihood promotion/ community institution loan register, whereas secretary with the Gram Panchayat with maintain cash book and payment register.

(11) Audit of FWC Accounts

PMU would conduct independent annual audits of the FWC accounts. In addition, concurrent audits – quarterly or semi-annually or as per the frequency indicated in the operation manual will also be conducted. Also, the GP would also be liable to the audits as spelt out in the Panchayati Raj Act, 1994.

(12) Mobile App based Updating of Project Progress and Accounting

FWC Motivator would update the project progress and accounting details (as per the cash book entries) on the mobile app to be developed by the Project. Project accountant at FTU level would be responsible to supervise and check the entries every month in a routine manner.

(13) Support to FWC

During project implementation, following support would be extended to the FWC created within Gram Panchayat to facilitate project implementation.

Table 4 Support to FWC under the Project

No.	Support Item	Description/ Provision	Remarks
1.	Office Furniture	One small Almira, Two Tables with chairs, four visitor's chairs, a Dari (carpet).	One-Time support; say 10,000 INR
2.	Annual Office Operation	Rs.60 per month or 720 INR to be given one-time at the start of the financial year	For meeting stationery, photocopy, hospitality etc.
3.	Mobility and Communication allowance	Pradhan – 1,500 INR per month Secretary – 1,000 INR per month	Towards mobility, communication and other expenses related to works.
4.	Honorarium	FWC Motivator – 4,500 INR per month	To facilitate project works, and for mobility, communication and other expenses related to works.
5.	Project Stationery	Membership Register/ Project Works Register/ Bill Book/ Cash Book/ Payment Register/ Proceeding Register/ Complaint Register/ Livelihood Promotion/ SHG Loan Register	To be printed by the project and provided to Gram Panchayat
6.	Smartphone	One quantity; Smartphone would be used to access mobile apps designed for updating project's physical and financial progress, capturing, geo-tagging and uploading site/ activity photographs, and to communicate with the project authorities using messaging tools like WhatsApp	One time cost; Rs.5000~Rs.6000
7.	Training	Training on computer applications/ office-automation aids, and GIS/ scientific approach based planning for Panchayat Secretary and Gram Pradhan/ other panchayat members	This request has been made by the Director, Panchayati Raj
8.	Social Audit	Project would support to conduct Social Audits by GP/FWC for the project interventions.	This request has been made by the Director, Panchayati Raj;
9.	Financial Audit	In addition to the Financial Audits to be conducted as per the Panchayati Raj Act, the project would also conduct annual financial audit as well as concurrent audits	Supported by the project

Source: JICA Study Team (2017)

Appendix 1 (of Annex 2): Panchayati Raj Institutions Accounting Software (PRIASoft)¹

About PRIASoft

PRIASoft aims to keep track of all the in-flow (Receipts) and out-flow (Expenditure) of the Panchayati Raj Institutions. The Application facilitate better financial management of Panchayati Raj Institutions (PRIs) by bringing about transparency and accountability in the maintenance of accounts thereby leading to better credibility and ultimately strengthening of PRIs. It is a centralized Accounting Software intended for use by all the three levels of Panchayati Raj namely Zilla, Block and Village Panchayat. Apart from making the process of accounting simple and easy (necessarily due to lack of trained manpower at this level), it ensures a better financial management, transparency and accountability at the Panchayat level.

PRIASoft features

- a) Strengthening Transparent Accounting By Panchayat
 - Web Enabled, Open Source Based e-Governance solution.
 - Complies with C&AG prescribed 4-tier accounting classification under Model Accounting Structure
- b) Helping You Get Most From Transactions
 - Follow Double-Entry And Cash-Basis system of Accounting.
 - Scheme Driven approach to record Receipt / Payment / Contra / Journal Vouchers.
 - Facilitates Bank/Treasury/Post Office Reconciliation and Period End Procedures
- c) Communication Made Easy
 - Provide Multilingual Support.
 - Adaptability to variations across states
- d) Providing Value Added Features
 - Facilitates Offline Voucher Entry.
 - Avail Important Reports on Mobile
- e) Download reports in Various Formats
 - Supports reports downloads in .pdf, .exl etc. formats as per user requirement and compatibility
- f) SMS/Email Based Alerts/Notification
 - Provides alerts and notification on email and SMS for any important process completion/failure in PRIASoft, allowing fast updates to users

¹ Source: http://panchayatonline.gov.in/viewappswindow.htm?OWASP_CSRFTOKEN=F1V3-EID8-TJXJ-NG6R-M71J-OCMR-DMYH-F7G7&appname=indexpriasoft

Attachment II.4.2.1 Roles and Responsibilities within Institutional Arrangements

Component	Roles and Responsibility
High Powered Committee (HPC)	<ul style="list-style-type: none"> • Highest decision-making authority over the Project • Approval of budget and annual plan of operations of the Project; and review the project performance every six-months • Approval of the Operation Manual (including Financial Rules/ procedures) for the Project; • Framing operational procedures for the Project for smooth and effective implementation; • Facilitating inter-departmental coordination for required synergy and convergence, and also to oversee to minimising duplication of efforts; • Taking up initiatives to resolve issues with GOI and JICA, if required.
Governing Body (GB)	<ul style="list-style-type: none"> • Highest decision-making body of the autonomous society • Providing authority to the PMU for day-to-day functioning; • Supporting the PMU in approval of budget and annual plan of operation, and other proposals of the project; • Rigorously review the project progress vis-à-vis annual plans at least once every quarter; monitor financial and physical progress • Facilitate budgets & release and monitor the fund disbursement status • Guide the PMU in the preparation of Operation Manual; • Prepare proposals for the HPC whenever necessary for the smooth implementation of the Project
Project Management Unit (PMU)	<ul style="list-style-type: none"> • Decision making body on day-to-day Project functioning and activities; will utilize autonomy to ensure smooth and timely implementation of the project • Will manage the budgets & releases and monitor the project activities • Keep track of the project implementation, and responsible to guide, issue instructions, prepare guidelines, execute capacity development plan, establish and operate M&E system, • Undertake field visits and provide-hand holding support in field in almost all respect for ensuring efficient implementation of the project • Collate and consolidate the expenditure statements from divisional and field offices and prepare Statement of Expenditures (SOEs) for getting reimbursement of claims • Organize annual planning and review workshop at state level, and also conduct AGM • Undertake statutory and internal/ concurrent audits
Circle Offices	<ul style="list-style-type: none"> • Will hold responsibilities for the regular overseeing project activities implemented through DFO offices • Conduct reviews and cross-check project works vis-à-vis financial and physical progress reporting • Conduct monthly meetings / hearings for Grievance Redressal • Chair and participate in Annual Planning and Review Workshop and other events organized at divisional level
Forest Circle Coordination Unit (FCCU)	<ul style="list-style-type: none"> • Established within the circle office and headed by CF/CCF rank officer • Coordination with project divisions (DMU) for smooth project implementation, and with district administration and line departments for convergence and synergies • Coordination with project Ranges (FTU) and Gram Panchayats through FTU. • Coordination with other key stakeholders viz. Resource Organizations, NGOs etc. • Extend technical guidance and support to the project divisions and ranges • Support project divisions in supervision, follow-ups, capacity development and information dissemination • Support project divisions is progress compilation, reporting and documentation • Facilitate funds flows and preparing project accounts for filing reimbursement claims

Component	Roles and Responsibility
Divisional Management Unit (DMU)	<ul style="list-style-type: none"> • Established within forest divisions and headed by a DFO as ex-officio • Assist the PMU in planning, fund management, work progress monitoring and documentation at the field level • Supervise, monitor, review and guide field functionaries and activities; and conduct monthly review meetings • Prepare physical and financial reports, and timely submit SOEs and utilization certificates • Maintain separate bank account and records for project funds, and facilitate audits • Organize annual planning and review workshop at divisional level, and execute capacity building plan • Provide budgets to VFDSs/ EDCs Prepare as per approved micro-plans/ annual implementation plans • Conduct monthly review meetings with key stakeholders
Range level: Field Technical Units (FTUs)	<ul style="list-style-type: none"> • Established within a range and headed by a range officer as ex-officio • Assist the project division (DMU) in planning, fund management, work progress monitoring and documentation at the field level • Facilitate micro-planning process, and support its implementation at community level • Take active roles at implementation of project related activities within the range • Maintain separate bank account and records for project funds, and facilitate audits • Prepare physical and financial reports, and timely provide utilization certificates for all annual releases to FTU and village institutions • Conduct monthly review meetings with key stakeholders
Community-level	<p>VFDS to be established at Ward Level as per PFM Regulations 2001</p> <ul style="list-style-type: none"> • Receive funds from the DMU in project account as per the annual implementation plan, and execute the actual work in the field as per prescribed rules, processes and guidelines; timely provide the utilization certificates • Responsible for planning, implementation, monitoring and reporting at the lowest level • Maintain separate bank account and records for project funds, and facilitate audits • Prepare physical and financial reports • Engage Animators, would be an educated person identified by community, to support their functioning <p>BMC established as per National Biodiversity Act 2002 will have the similar roles and responsibilities in respect to the community based biodiversity management of the Project.</p> <p>Sub-committees of BMC are proposed to be the community level implementation bodies at ward level.</p>
Project Management Consultants (PMC)	<ul style="list-style-type: none"> • Will provide technical and managerial support to PMU • Support PMU by a team of experts to augment various skills required for the project implementation

Source: JICA Study Team (2017)