

Table S1. Van Panchayat information in Uttarakhand state.

Division	District	Total Area (km ²)	Population	Population Increase (%)	Literacy (%)	Total Forest Area (km ²)	Village Number	VP Number	VP Forest Area (km ²)	VP Total Revenue (Rp.)	VP / Village Number ratio (%)	VP Area/ Total Forest Area (%)	VP Area/ VP no. (km ²)	VP Revenue/ Number (Rp.)
Garhwal	Tehri	3,642	620,000	2.4	76.4	3,216	1,868	1,332	132	0	71.31	4.1	0.10	0
	Uttarakashi	8,016	330,000	11.9	75.8	7,217	710	644	73	660,000	90.70	1.0	0.11	1025
	Pauri Garhwal	5,329	790,000	-1.4	82.0	3,851	3,483	2,431	528	1,260,000	69.80	13.7	0.22	518
	Dehradun	3,088	1,700,000	32.3	84.3	2,018	771	215	77	0	27.89	3.8	0.36	0
	Rudraprayag	1,984	240,000	6.5	80.0	1,804	690	574	207	520,000	83.19	11.5	0.36	906
	Chamoli	8,030	390,000	5.7	82.7	5,061	1,252	1,082	1,884	5,790,000	86.42	37.2	1.74	5351
Kumaon	Haridwar	2,360	1,890,000	30.6	73.4	724	636	0	0	0	NR	NR	NR	NR
	Almora	3,139	620,000	-1.3	80.5	2,362	2,294	2,194	699	41,400,000	95.64	29.6	0.32	18870
	Bageshwar	2,246	260,000	4.2	80.0	1,102	948	822	388	12,690,000	86.71	35.2	0.47	15438
	Champawat	1,766	260,000	15.6	79.8	1,323	721	629	312	440,000	87.24	23.6	0.50	700
	Pithoragarh	7,090	480,000	4.6	82.3	2,053	1,678	1,666	871	1,650,000	99.28	42.4	0.52	990
	Nainital	4,251	950,000	25.1	83.9	2,982	1,160	495	281	8,800,000	42.67	9.4	0.57	17778
Udham Singh Nagar		2,542	1,650,000	33.5	73.1	938	708	0	0	0	NR	NR	NR	NR
Total		53,483	10,180,000	13.1	79.5	34,651	16,919	12,089	5,449	73,210,000	71.45	15.7	0.45	6056

Data compiled from VP Atlas 2007, Uttarakhand Forest Statistics 2014 and Census 2001; 2011.
Population increase percentage is compared by previous census at 2001.

Table S2. Data of selection: Interview with the *Sarpanch* (Van panchayat leader) at Uttarakhand (Field Survey 2011-2015; VP Atlas 2007)

District	Almora										Chamoli										Tehri Garhwal									
VP	Q	U	K	G	A	S	D	V	DH	T	K	M	T	N	SR	S	TM*1	GDKP	*2	G	D	M	B	S	K					
Household number	22	60	48	22	71	65	30	208	NA	750	750	Population: 223 (OC:33, SC:9)	35	72	42	85	22	153	165; 128; 140; 128	200 (OC:184, SC:16)	51 (OC: 19; SC: 32)	40	85 (OC: Brahmin 60%, Rajput 40%, SC: 1)	42 (OC: 37; SC: 5)	140					
Population: 130	450	population (No SC)	118 population SC: 4	population: 426	111 Population: (No SC)	208	NA	750	750	Population: 223 (OC:33, SC:9)	35	72	42	85	22	153	165; 128; 140; 128	200 (OC:184, SC:16)	51 (OC: 19; SC: 32)	40	85 (OC: Brahmin 60%, Rajput 40%, SC: 1)	42 (OC: 37; SC: 5)	140							
Altitude(m)	1050	1000	1300	1900-2100	1700-2100	1800	1250	1978	1820-1940	1700-1850	1450-1650	1400-2030	1350	1300	1250	1300	1400	1600	1200	1300	1800	2003	NA	NA	2005					
VP established year	~15 years ago	2001	2004	1907	1936	1933	1948	1978	1999	1995	1972	1963	1946	1946	1962	2001	1963	1949	1948	1993	2005	2005	2005	2005	2005					
Type of forest	Chir Pine (<i>Pinus roxburghii</i>) dominated forest	Chir Pine and broad-leaved forest trees	Dominated by broad-leaved forest	Dominated by Oak, others are pines dominated with brass, bunal	Ranji Oak (<i>Lacostichophora</i>) dominated	Chir pine dominated and Oak dominated forest	Chir pine, Matrica, Coddar, mixed forest	Chir Pine forest	Dominated Pine (<i>P. roxburghii</i>) forest	Dominated Pine (<i>P. roxburghii</i>) forest	Mixed forest dominated, Oak dominates forest	Ranji dominated, Mixed forest, planted forest	Ranji oak dominated	Ranji oak dominated	Ranji, Blans, Ranji, Blans, Chir... mixed forest	Ranji oak dominated	Ranji dominated, Chir Pine forest, mixed forest	Ranji dominated, forest with some patches of Chir pine (<i>Pinus roxburghii</i>)	Oak (<i>Quercus</i> spp.) dominated forest with some patches of Chir pine (<i>Pinus roxburghii</i>)	Some broad-leaved forest trees and Chir Pine	Oak	ND	ND	ND						
Codition of forest	Slightly fair (some was damages by forest fire)	Fair	Fair	Super Fair	Fair	Fair	Fair	Fair	Fair	Fair	Pretty Fair	Pretty Fair	Fair	Not fair	Fair	Fair	Fair	Fair	Fair	Fair	Slightly fair (less trees)	Fair	Slightly fair (less trees)	ND	ND					
Woman's self-supporting organization group	No	Jalkali Maa SHG	NA	Jai Durga SHG	Bindrarashani SHG	Yes(SHG)	Yes(SHG)	Yes(SHG)	Atri SHG, Pushp SHG, Vinay SHG	Krishna SHG	Woman welfare G (100p/HH) self help G (50p/HH)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes (Nagariya Samiti and "Saita Samu")	No	No	No	No					
Support from NGO / Government	No	Irrigation for agriculture/CHEA since 2008 for plantation and soil improvement	No	Irrigation for agriculture/CHEA since 2008 for plantation and soil improvement	CHEA	No	No	No	CHEA	CHEA	CAMPA	JFM CAMPA	No	No	No	No	No	NA	CAMPA	Bamboo project from Uttarakhand FD	Campa (government)	Government agriculture scheme to Gram Panchayat	No project	Microplan from Agbica (NGO)	Microplan from Agbica (NGO)					
Area of VP (ha)	39.832	32	23.8	87	145	110.8	2.4	24.4	58ha	109ha	56ha	45	65.5	41.06	RF-250ha (VP-118ha) VP-40	20ha(+C/S forest)	48	876	185.6	21 ha	29 ha	8 ha	11.8 ha	18.5 ha						
Distance to VP (km)	0.5km	0.5km	0.5km	0.1km	0.5km	1.5km	NA	NA	NA	NA	0.5km	0.3km	0.5km	1km	NA	NA	1km	1km	NA	NA	0.5 km	2-3 km	0.5 km	4-5 km						
Area of plantation (ha)	NA	NA	NA	NA	0.5km	1.5km	NA	NA	NA	NA	15ha	15ha	15ha	15ha	200p/ha	NA	NA	NA	NA	NA	15 ha (Bamboo, 10 ha Oak, 5 ha)	8 ha	10 ha	10 ha						
Sarpanch (VP leader)	Male	Male	Male	Female	Male	Male	Male	Male	Male	Male	Male	Male	Male	Male	Male	Male	Male	Male	Male	Male	Male	No	No	No	No					
Chowkidar (Forest Guard)	No	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Male	Male	Female	Female	Male					
Managed before the VP	NA	No Rules	NA	Civil/Squand land, there were no rules	Civil/Squand land, there were no rules	NA	NA	NA	NA	NA	Civil/Squand land, there were no rules	NA	NA	Reserved Forest	C/S forest	NA	NA	NA	NA	NA	Civil/Squand land/Forest Department	ND	ND	JFM 1999-2003						
MC (gender)	Male:5 (no female)	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	NA	NA	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4	Male:3; Female:4					
MC (caste)	GC:5 (no caste)	GC:2, SC:2 (male:1; female:1)	NA	GC:6; SC:3	OC:8; SC:1	NA	NA	NA	GC:6; SC:3	GC:7; SC:2	GC:9	GC:9	GC:3	GC:3	GC:3	GC:3	GC:3	GC:3	GC:3	GC:3	GC:3	GC:3	GC:3	GC:3	GC:3					
Land holding	NA	land less 0, 10-50hect 0, 50-200hect 40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	230ha with reserved forest	Landless: 0	Landless: 0	Landless: 0	Landless: 0						
VP account (Rp.)	0	156613	0	0	34035	28664	0	200	0	426479	6880	0	2707	2261	2871	0	0	35994	10990	NA	NA	NA	NA	NA	NA					
Microplan	No	Yes	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes at Forest department in Ranikhet	NA	NA	Yes at Forest department in Ranikhet	NA	No	NA	Working report	Yes	No	No	Yes	Yes					
Reason for VP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Demand from community	Demand from community	Demand from community	NA	Gram Sabha	Demand from community	NA	NA	NA	Demand from community	ND	Request from Gram panchayat	Proposal from Uttarakhand FD	Demand from community						

*1) There is another joint VP forest at Falkande Tali, referred to Rithiya VP;

*2) It is also a joint VP consisting of 4 villages: This field survey was examined in 2011-2015; Abbreviations: OC, other caste; SC, scheduled caste; NGO, non-government organization; JFM, joint forest management; FD, forest department; ND, not determined.

Table S3. Variation in data set of house hold (HH) numbers by interview at each VP. Source: prepared by the author based on the results of a structured interview of households.

Type	Village		D (N=42)	G (N=14)	K (N=31)	M (N=26)	Total (N=113)
I	1. Family profile	Total HH number	52	22	31	26	131
		Interviewed HH number	42	14	31	26	113
		Average number of family member	6.8	7	6	6.4	
		Work outside	40	7	17	NA	64
		Study outside	40	1	NA	NA	41
Type	Village		D (N=42)	G (N=14)	K (N=31)	M (N=26)	Total (N=113)
II	6. Forest condition after VP was formed	Highly improved	38	2	28	22	90
		Improved	4	3	3	3	13
		Remain	0	8	0	0	8
		Degraded	0	1	0	0	1
		Badly degraded	0	0	0	0	0

II	2. (MC)	No	34	8	23	19	84
		Yes	8	6	8	7	29
	3. Caste	SC	22	3	0	2	27
		OC	11	2	25:Rawat 6:Negi	1:Bisht 5:Rawat 18:Negi	68
		Brahmin	9	9	0	0	18
	4. Properties)*	TV	28	8	13	14	63
		Car	3	1	0	0	4
		Mobile telephone	39	31	30	23	123
		Refrigerator	3	2	3	1	9
		Dish TV	14	4	14	10	42
		Sawing machine	3	NA	14	1	18
		Washing machine	0	0	1	0	1
		Computer	1	0	2	1	4
		5. Infrastruc- ture)*	Clean water	42	14	31	26
	Electricity		41	13	30	24	108
	Firewood		42	13	30	25	110
	Solar light		1	0	11	0	12
	Kerosene		3	13	26	25	67
	LPG		24	4	22	3	53
	6. Main livelihood)*	Agriculture	27	5	6	22	60
		Livestock	2	0	1	1	4
		Forest activities	5	0	1	0	6
		Private work	5	9	0	1	15
		Government work	3	0	24	3	30
	7. House construction)*	Wood, mud & straw	2	0	5	2	9
		Wood & cement (wood mixed)	35	14	26	24	99
		Cement & Bricks (modern)	5	0	0	0	5
	8. Livestock's)*	Cow	34	14	13	23	84
		Bull	7	1	2	2	12
		Calf	6	5	2	1	14
		Goat	15	11	3	4	33
		Buffalo	22	2	19	8	51
		Ox	11	10	7	22	50
		Hen	0	1	0	4	5
	1. Distance to VPF (km)		0.37	0.49	0.43	0.72	0.50
	2. Collection of firewood	Yes	41	14	30	25	110
		No	1	0	1	1	3
	Hour (/week)		7.60	2.24	3.00	6.70	4.88
	3. Grazing animals	Yes	30	11	3	1	45
		No	12	3	28	25	68
	4. Firewood impact	Increased	38	10	28	25	101
		Same	4	4	3	1	12
		Declined	0	0	0	0	0
	5. Fodder impact	Increased	39	11	27	25	102
Same		3	1	4	1	9	
Declined		0	2	0	0	2	

III		NA	0	0	0	1	1
	7. Benefit of the VP)*	Forest recovery	32	11	NA	NA	
		Forest products	5	6	NA	NA	
		Village development	30	11	NA	NA	
		Employment	16	2	NA	NA	
		No idea	2	0	NA	NA	
	8. VP effect on the forest condition	Large positive	39	4	23	21	87
		Small positive	2	3	6	5	16
		No effect	1	5	2	0	8
		Small negative	0	2	0	0	2
		Large negative	0	0	0	0	0
		NA	0	0	0	0	0
	9. Expecta- tion before the VP was formed)*	Forest recovery	35	14	NA	NA	
		Benefit of forest product	12	1	NA	NA	
		Village development	33	1	NA	NA	
		Employment opportunity	33	1	NA	NA	
		NA	2	0	NA	NA	
	10. Impact after the VP)*	Increased forest product	29	7	NA	21	
		Regenerate forest	33	7	NA	21	
		Employment opportunity	29	0	NA	19	
		Social aspect change	27	6	NA	16	
		Forced by FD	2	1	NA	0	
		Others	3	1	NA	1	
	1.Name of VP leader	Known	38	10	31	25	104
		Not known	4	4	0	0	8
		NA	0	0	0	1	1
	2. Participa- tion of VP meeting	Yes	32	10	31	25	98
		No	10	4	0	0	14
		NA	0	0	0	1	1
	3. Participa- tion	Actual	4	4	12	12	
		Average	1.3	2.3	10.1	12.0	
	4. Attitude at meeting	Be present	15	4	2	1	22
		Ask opinion	2	0	4	4	10
Express opinions, taking initiatives		7	3	7	13	30	
Have voice, influenced decisions		4	4	8	6	22	
Ask to undertake specific tasks		1	3	10	1	15	
NA		13	0	0	1	14	
5.Microplan	Not know	28	3	26	19	76	
	Know	14	11	5	6	36	
	NA	0	0	0	1	1	
6. Participate in the microplan	No	30	3	31	21	85	
	Yes	12	11	3	4	30	
	NA	0	0	0	1	1	
7. Mer- it/Benefit of MC activity	No	39	8	29	20	96	
	Yes	3	6	2	5	16	
	NA	0	0	0	1	1	

*: Multiple answers allowed

Note:

I: Household's livelihood situation; II: Use and perception of the forest; and, III: Participation to management.

MC: Management committee; HH: Household; SC: Scheduled caste; TV: Television; PC: Personal computer; LPG: Liquefied petroleum gas; FD: Forest department; NA: Not available. *) Multiple answers allowed.