

Table 2.2: Temporal Changes in Population: 1891 - 1991

Annex I

Year	Male	Female	Total	Sex ratio (females per 1000 males)	Decadal % age	Density of population
1891	11589 (52.32)	10563 (47.68)	22152 (100.00)			
1901	39795 (57.43)	29358 (42.57)	69153 (100.00)			
1911	45038 (51.25)	42851 (48.75)	87889 (100.00)			
1921	41492 (50.77)	40229 (49.23)	81721 (100.00)	970		
1931	55826 (50.84)	53983 (49.16)	109809 (100.00)	967	34.37	15
1941	83289 (52.08)	78234 (47.92)	121523 (100.00)	936	25.42	17
1951	72210 (52.43)	65515 (47.57)	137725 (100.00)	907	13.34	19
1961	85193 (57.53)	63965 (47.47)	149158 (100.00)	904	17.78	23
1971	112662 (53.69)	97181 (46.31)	209843 (100.00)	863	23.38	30
1981	172440 (54.82)	143048 (45.18)	315488 (100.00)	836	50.76	46
1991	216427 (53.25)	190030 (46.75)	406457 (100.00)	878	28.43	52

Source: (i) Census of India, 1981 Series, Sikkim: General Population Tables and Primary Census Abstracts, Part II/A and Part II/B.

(ii) Census of India, 1991 Series, Sikkim: General Population Tables and Primary Census Abstracts.

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Table 2.2: Temporal Changes in Population: 1891 - 1991

Year	Male	Female	Total	Sex ratio (females per '000 males)	Decadal % age variations	Density of population
1891	11589 (52.32)	10563 (47.68)	22152 (100.00)	912		
1901	39795 (67.43)	28219 (32.57)	59014 (100.00)	709	166.40	8
1911	45059 (51.25)	42861 (48.75)	87920 (100.00)	951	48.98	12
1921	41492 (50.77)	40229 (49.23)	81721 (100.00)	970	-7.05	12
1931	55825 (50.84)	53983 (49.16)	109808 (100.00)	967	34.37	15
1941	63289 (52.08)	58231 (47.92)	121520 (100.00)	935	25.42	17
1951	72210 (52.43)	65515 (47.57)	137725 (100.00)	907	13.34	19
1961	85193 (52.53)	76996 (47.47)	162189 (100.00)	904	17.76	23
1971	112662 (53.69)	97181 (46.31)	209843 (100.00)	863	29.38	30
1981	172440 (54.50)	143945 (45.50)	316385 (100.00)	835	50.76	45
1991	216427 (53.25)	190030 (46.75)	406457 (100.00)	878	28.48	57

Source: (i) *Census of India, 1981 Series, Sikkim: General Population Tables and Primary Census Abstracts, Part II A and Part II B.*

(iii) *Census of India, 1991 Series, Sikkim: General Population Tables and Primary Census Abstracts, Part II A and Part II B.*

Note: Figures in Parentheses are percentages

Table 2.3: Demographic Features: 1991

Particulars	Male	Female	Total
1. Population	216427	190030	406457
Per cent of total population	53.25	46.75	100.00
Rural	195277	174174	369451
Per cent of total population	90.23	91.66	90.90
Urban	21150	15856	37006
Per cent of total population	9.87	8.34	9.10
2. Population above 6 years	178433	163377	331810
Per cent of total population	81.63	82.44	85.97
3. Population below 6 years	37984	26653	74647
Per cent of total population	18.37	17.56	14.03
4. SC populations	5.74	6.14	5.93
5. ST populations	21.95	22.84	23.36

Source: *Sikkim: A Statistical Profile, 1979 - 80 to 1991 - 92, Bureau of Economics and Statistics, Department of Planning, Govt. of Sikkim, Gangtok*

Table 2.4 Changes in Vital Statistics: 1980 - 81 to 1993 - 94

Year	Birth rate	Death rate	Infant mortality
1980 - 1981	31.00	8.90	-
1990 - 1991	24.40	7.40	45
1993 - 1994	23.70	6.40	45

Source: *Same as Table 2.2*

Table 2.5: Changes in Literacy Rates: 1951 to 1991 (per cent)

Year	Male	Female	Total
1951	11.19	1.20	6.59
1961	19.50	4.20	12.30
1971	25.37	8.90	17.74
1981	43.95	22.20	34.05
1991	54.16	37.74	46.48

Source: *Same as Table 2.2*

Table 2.6: Temporal Changes in the Occupational Structure by Sex: 1971 to 1991

No.	Sectors	1971			1981			1991		
		M	F	Total	M	F	Total	M	F	Total
1.	Cultivators	74.53	92.28	81.00	50.16	79.52	60.10	50.96	71.74	57.84
2.	Agricultural labourers	4.12	3.16	3.77	3.45	3.06	3.31	8.04	7.37	7.81
3.	Livestock, forestry, hunting, Fishing and plantation orchards and allied	0.60	0.48	0.55	1.93	0.92	1.59	2.99	1.58	2.53
4.	Mining and quarrying	0.09	0.00	0.05	0.17	-	0.11	0.30	0.05	0.22
5.	Manufacturing, processing, Servicing and repairing									
	(a) Household industries	0.50	0.04	0.34	1.25	0.74	1.08	0.99	0.33	0.77
	(b) Other than household Industries	1.31	0.26	0.93	3.14	1.29	2.51	3.94	1.88	3.26
6.	Construction	4.85	0.87	3.40	10.47	4.98	8.62	8.84	3.54	7.09
7.	Trade and commerce	3.09	0.48	2.14	5.08	1.00	3.70	6.79	2.08	5.23
8.	Transport, storage and communication	2.27	0.42	1.59	1.55	0.07	1.05	2.62	0.24	1.82
9.	Other services	8.64	2.01	6.23	22.80	8.42	17.93	14.53	11.19	13.43
	Total workers	100.00 (70933)	100.00 (40644)	100.00 (111577)	100.00 (97508)	100.00 (49928)	100.00 (147436)	100.00 (109994)	100.00 (54398)	100.00 (164392)
	Per cent of main workers to total Population	62.97	41.82	53.17	56.55	34.69	46.60	50.82	28.63	40.45

Source: (i) Census of India, 1971 Series, Sikkim: General Population Tables and Primary Census Abstracts, Part II A and Part II B
(ii) Census of India, 1981 Series, Sikkim: General Population Tables and Primary Census Abstracts, Part II A and Part II B
(iii) Census of India, 1991 Series, Sikkim: General Population Tables and Primary Census Abstracts, Part II A and Part II B

Note: Figures in Parentheses are the total number of workers

Table 2.7: Changes in the Land Utilisation Pattern, 1976 - 77 - 1990 - 91 (hectares)

Particulars	1976 - 77	1980 - 81	1990 - 91
1. Total geographical area	709600 (100.00)	709600 (100.00)	709600 (100.00)
2. Forest including area under miscellaneous trees and groves	269380 (37.96)	261983 (36.92)	298000 (42.00)
3. Barren land	204010 (28.75)	180250 (25.40)	180000 (25.37)
4. Land put to non-agricultural uses including permanent pastures and grazing land	157148 (22.15)	158299 (22.31)	120299 (16.95)
5. Area under current fallow	501 (0.07)	4428 (0.62)	3906 (0.55)
6. Other uncultivated land excluding fallow land	4925 (0.69)	4560 (0.64)	10830 (1.53)
7. Fallow other than current fallow	944 (0.13)	9474 (1.34)	9204 (1.30)
8. Land not available for cultivation	6613 (0.93)	11604 (1.64)	14300 (2.01)
9. Cultivable waste land	1153 (0.16)	681 (0.09)	9807 (1.38)
10. Net sown Area	64926 (9.15)	78321 (11.04)	63254 (8.91)

Source: Sikkim State, Annual Plan, 1996-97, Vol I. Planning and Development Department, Government of Sikkim, Gangtok

Note: Figures in parentheses are percentages

Table 2.8: Temporal Changes in the Cropping Pattern: 1975 - 76 to 1995 - 96 ('000 hectares)

Sr. No.	Crops	1975 - 76	1980 - 81	1985 - 86	1990 - 91	1995 - 96
1.	Rice	11.40 (16.92)	14.80 (16.15)	15.50 (12.56)	16.05 (12.13)	15.94 (11.46)
2.	Wheat	0.15 (0.22)	7.00 (7.64)	7.40 (5.99)	7.82 (5.91)	8.42 (6.05)
3.	Maize	28.50 (42.32)	30.20 (32.95)	39.00 (31.62)	39.90 (30.14)	39.94 (28.71)
4.	Finger millet	4.80 (7.13)	5.00 (5.46)	4.80 (3.89)	4.90 (3.70)	5.00 (3.59)
5.	Barley	0.90 (1.34)	0.58 (0.63)	1.00 (0.81)	0.90 (0.68)	1.08 (0.78)

Table 2.8: Temporal Changes in the Cropping Pattern: 1975 - 76 to 1995 - 96 ('000 hectares)

Sr. No.	Crops	1975 - 76	1980 - 81	1985 - 86	1990 - 91	1995 - 96
6.	Buckwheat	1.50 (2.23)	2.76 (3.01)	2.00 (1.62)	1.72 (1.30)	2.19 (1.57)
	Total Cereals	47.25 (70.16)	60.34 (65.84)	69.70 (56.49)	71.29 (53.86)	72.57 (52.16)
7.	Urd	1.55 (2.30)	4.00 (4.36)	3.90 (3.16)	4.01 (3.03)	4.44 (3.19)
8.	Other Pulses	0.15 (0.22)	0.12 (0.13)	1.60 (1.30)	2.12 (1.60)	2.29 (1.65)
	Total Pulses	1.70 (2.52)	4.12 (4.49)	5.50 (4.46)	6.13 (4.64)	6.73 (4.84)
9.	Rape seed and Mustard	0.50 (0.74)	1.70 (1.85)	2.70 (2.19)	3.10 (2.34)	5.84 (4.20)
10.	Soyabean	1.00 (1.48)	2.30 (2.51)	3.70 (3.00)	3.62 (2.73)	3.81 (2.74)
11.	Other Oil Seeds	-	-	0.30 (0.24)	0.07 (0.05)	0.08 (0.06)
	Total Oilseeds	1.50 (2.22)	4.00 (4.36)	6.70 (5.43)	6.79 (5.13)	9.73 (7.00)
12.	Orange/Citrus	1.40 (2.08)	2.62 (2.86)	4.60 (3.73)	6.00 (4.53)	6.60 (4.74)
13.	Other Fruits	1.50 (2.23)	3.08 (3.36)	4.45 (3.62)	5.50 (4.15)	2.60 (1.87)
	Total Fruits	2.90 (4.31)	5.70 (6.22)	9.05 (7.34)	11.50 (8.68)	9.20 (6.61)
14.	Vegetables	1.00 (1.48)	0.84 (0.92)	3.80 (3.08)	5.15 (3.89)	5.80 (4.17)
15.	Potatoes	2.40 (3.56)	1.90 (2.08)	5.00 (4.05)	5.36 (4.05)	5.50 (3.95)
16.	Large Cardamoms	10.00 (14.86)	14.00 (15.28)	20.90 (16.94)	22.00 (16.62)	23.50 (16.89)
17.	Ginger	0.50 (0.74)	0.64 (0.70)	2.30 (1.86)	3.00 (2.27)	4.50 (3.23)
18.	Other Tuber and Rhizomatic crops	0.10 (0.15)	0.10 (0.11)	0.42 (0.34)	1.15 (0.87)	1.60 (1.15)
	Total	13.00	16.64	28.62	31.51	35.10
	Miscellaneous	(19.31)	(18.17)	(23.20)	(23.80)	(25.22)
	Total Cropped Area	67.35 (100.00)	91.64 (100.00)	123.37 (100.00)	132.37 (100.00)	139.13 (100.00)
	Cropping Intensity	103.73	117.01	-	134.57	141.44

Source: Department of Agriculture, Government of Sikkim, Gangtok

Note: The figures in parentheses are percentages

Table 2.9: Temporal Changes in the Production of Major Crops: 1975 - 76 to 1995 - 96 ('000 tonnes)

Sr. No.	Crops	Years				
		1975-76	1980-81	1985-86	1990-91	1995-96
1.	Rice	10.00	10.63	17.05	22.04	21.88
2.	Wheat	0.15	10.30	11.22	13.08	15.30
3.	Maize	16.50	28.93	49.25	57.60	56.56
4.	Finger Millet	3.20	3.84	4.30	4.62	4.75
5.	Barley	0.50	0.46	1.30	1.18	1.57
6.	Buckwheat	0.80	1.38	1.38	1.42	1.74
	Total Cereals	31.15	55.54	84.50	99.94	101.80
7.	Urd	0.60	2.92	2.90	3.05	3.23
8.	Other Pulses	0.10	0.10	1.70	2.38	2.70
	Total Pulses	0.70	3.02	4.60	5.43	5.92
9.	Rape Seed and Mustard	0.20	0.90	2.30	2.65	4.39
10.	Soyabean	0.50	1.81	3.10	3.02	3.21
11.	Other Oil Seeds	-	-	0.15	0.04	0.04
	Total Oilseeds	0.70	2.71	5.55	5.71	7.63
12.	Orange/Citrus Fruits	3.60	7.35	12.10	15.45	8.70
13.	Other Fruits	1.10	3.00	6.10	8.05	3.30
	Total Fruits	4.70	10.35	18.20	23.50	12.00
14.	Vegetables	5.00	3.40	23.90	35.00	28.00
15.	Potatoes	8.00	6.64	26.40	34.97	24.00
16.	Large Cardamons	2.30	3.50	3.90	3.60	3.60
17.	Ginger	2.00	3.20	10.90	16.00	29.00
18.	Rhizomatic Crops	0.10	0.20	1.10	3.00	1.60
	Total Miscellaneous	12.40	13.54	42.30	57.57	58.20

Source: Department of Agriculture, Government of Sikkim, Gangtok

Table 2.10: Average Yields of Different Crops: 1975 - 76 to 1995 -96
(kg/hectare)

Sr. No.	Crops	Years				
		1975-76	1980-81	1985-86	1990-91	1995-96
1.	Rice	877.19	718.24	1100.00	1373.21	1372.61
2.	Wheat	1000.00	1471.43	1516.22	1672.63	1817.60
3.	Maize	578.95	957.95	1262.82	1443.61	1416.01
4.	Finger Millet	666.67	768.00	895.83	942.86	950.00
5.	Barley	555.56	793.10	1300.00	1311.11	1451.48
6.	Buckwheat	533.33	500.00	690.00	825	790.97
	Total Cereals	659.26	920.45	1212.34	1401.88	1402.75
7.	Urd	387.10	730.00	743.59	760.60	724.10
8.	Other Pulses	666.67	833.33	1062.50	1122.64	1179.04
	Total Pulses	411.76	733.01	836.36	885.81	878.90
9.	Rape Seed and Mustard	400.00	529.41	851.85	854.84	750.00
10.	Soyabean	500.00	786.96	837.84	834.25	841.10
11.	Other Oil Seeds	-	-	500.00	571.43	500.00
	Total Oilseeds	466.67	677.50	828.36	890.94	784.58
12.	Orange/Citrus Fruits	2571.43	2805.34	2630.43	2575.00	1318.18
13.	Other Fruits	733.33	974.03	1370.79	1463.64	1269.23
	Total Fruits	1620.69	1815.79	2011.05	2043.48	1304.35
14.	Vegetables	5000.00	4047.62	6289.47	6796.12	4827.59
15.	Potatoes	3333.33	3494.74	528.00	6524.25	4363.64
16.	Large Cardamons	230.00	250.00	186.60	163.64	153.19
17.	Ginger	4000.0	5000.00	4739.13	5333.33	5333.33
18.	Rhizomatic Crop	1000.00	2000.00	2619.05	2608.70	1000.00
	Total Miscellaneous	953.85	813.70	1477.99	1827.04	1658.12

Source: Department of Agriculture, Government of Sikkim, Gangtok

Size Class (ha)	1-2	2-4	4-10	10 & Above	Total	Chil Rabi
1985-96	10820	7043	1428	4285	21531	21531
1990-91	10820	7043	1428	4285	21531	21531
1995-96	10820	7043	1428	4285	21531	21531

Table 2.11: Yields of Selected Crops in Special Category Mountainous States: A Comparative View (average of 1990 - 91 to 1992 - 93) tonnes/hectares

States	Rice	Wheat	Maize
Sikkim	1.30	1.60	1.41
Assam	1.29	1.26	0.64
Arunachal Pradesh	0.73	1.73	0.46
Himachal Pradesh	1.28	1.59	2.00
Jammu & Kashmir	2.00	1.23	1.64
Manipur	1.50	-	0.96
Meghalaya	1.16	1.31	0.74
Mizoram	1.30	-	0.63
Nagaland	1.26	3.23	0.37
Tripura	1.83	1.89	0.41
All India	1.74	2.33	1.53

Source: *Interstate Economic Indicators, 1994, Plan Finance and Resource Division, Planning Department, Government of Karnataka*

Table 2.12: Temporal Changes in the Area under High-yielding Varieties: 1975 - 76 to 1995 - 96 (ha)

Crops	1975 - 76	1980 - 81	1985 - 86	1990 - 91	1995 - 96
Rice	100 (0.88)	4000 (27.03)	4970 (32.06)	7050 (43.93)	8775 (55.05)
Wheat	100 (66.67)	6940 (99.14)	7360 (99.46)	7670 (98.08)	8200 (97.39)
Maize	1510 (5.30)	8740 (28.94)	12090 (31.00)	16980 (42.55)	16720 (41.86)
Total	1710 (6.18)	19680 (39.47)	24420 (31.50)	31700 (49.71)	33695 (52.40)

Source: *Department of Agriculture, Government of Sikkim, Gangtok*

Note: *Figures in parentheses are percentages to the total area of respective crops under high yielding varieties*

Table 2.13: Consumption of Chemical Fertilizer in Nutrient Terms: 1990-91 to 1995-96

	Fertilizers (tonnes)		Per hectare (kg)	
	1990 - 91	1995 - 96	1990 - 91	1995 - 96
N	246	640	4.87	5.76
P	191	391	2.28	2.0
K	61	50	0.72	0.40
Total	398	1081	7.87	8.24

Source: Same as for 2.12

Table 2.14 Changing Distribution of Land Holdings and Area by Size Classes: 1976 - 77 to 1990 - 91

Size Class (Ha)	1976 - 77				1980 - 81				1990 - 91			
	Holdings		Area		Holdings		Area		Holdings		Area	
	No	%	Area (Ha)	Av. Size	No	%	Area	Av. Size	No	%	Area	Av. Size
Below 1	10660	34.32	5439	0.51	25535	45.44	11960	0.47	26119	49.56	11461	0.44
1 - 2	7843	25.25	11267	1.44	13076	23.27	18797	1.44	11162	21.18	19019	1.70
2 - 4	7438	23.95	21028	2.83	10926	19.44	30502	2.79	9065	17.20	27049	2.98
4 - 10	4285	13.80	25142	5.87	5788	10.30	33562	5.79	5102	9.68	31286	6.13
10 & Above	835	2.68	16186	19.38	873	1.55	14247	16.32	1249	2.38	22487	18.00
Total	31061	100.0	79062	2.55	56198	100.0	109068	1.94	52697	100.0	111302	2.11
Gini Ratio	0.5169				0.5273				0.5630			

Source: Agricultural Census Reports for 1976 - 77, 1980 - 81 and 1990 - 91, Bureau of Economics and Statistics, Government of Sikkim, Gangtok

Table 2.15: Per Capita Land Availability, 1971 to 1991 (hectare)

Particulars	1971	1981	1991
1. Net Cultivated Land	0.31	0.31	0.24
2. Operated Area for Agricultural Use	0.38	0.34	0.27
3. Land for Non-Agricultural Use	0.33	0.27	0.21
4. Pastures and Cultural Waste	0.40	0.23	0.18
5. Forest	1.26	0.83	0.65

Source: *Sikkim: A Statistical Profile, 1979-80 to 1991-92, Bureau of Economics and Statistics, Department of Planning, Government of Sikkim, Gangtok*

Table 2.16: Trends in the Livestock Population, 1976-77 to 1991-92

Sr.No.	Particulars	1976-77	1981-82	1986-87	1991-1992
1.	Cattles	75180 (29.38)	95392 (35.55)	98586 (34.16)	110727 (32.44)
2.	Bullocks	28282 (11.05)	27134 (10.11)	39806 (13.79)	44708 (13.10)
3.	Buffaloes	4050 (1.58)	4045 (1.51)	3088 (1.07)	2932 (0.86)
4.	Yaks	-	3470 (1.29)	5354 (1.86)	5439 (1.59)
5.	Sheep	13025 (5.09)	10817 (4.03)	10933 (3.79)	16268 (4.77)
6.	Goat	60998 (23.84)	96285 (35.89)	98210 (34.03)	114707 (33.60)
7.	Equines (Horses, Ponies, Mules & Donkeys)	2257 (0.88)	1093 (0.41)	1409 (0.49)	2082 (0.61)
8.	Pigs	72077 (28.18)	30093 (11.21)	31207 (10.81)	44477 (13.03)
	Total	255869 (100.00)	268329 (100.00)	288593 (100.00)	341340 (100.00)
	Poultry	135967	251859	277158	465751
	Total including Poultry	391836	520188	545751	807091

Source: *Agricultural Census Reports for 1976-77, 1981-82 and 1986-1987 and 1991-92, Bureau of Economics and Statistics, Department of Planning, Government of Sikkim, Gangtok*

Note: (i) Figures for 1991-92 are provisional and are, therefore, indicative only
(ii) Figures in parentheses are percentages

Table 2.17: Changes in Livestock Production: 1980-81 to 1994-95

Sr. No.	Particulars	Unit	1980-81	1985-86	1990-91	1994-95
1.	Milk	'000 tonnes	10.95	19.00	27.00	31.00
2.	Eggs	million	1.25	3.50	12.00	15.00
3.	Wool	million kg.	0.02	002	0.03	0.03

Source: Draft Eighth Five Year Plan, Government of Sikkim, 1992, p 103

Table 2.18: Trade Flows from and into Sikkim, 1995-96 (metric tonnes)

Sr. No.	Commodities	Export	Import
1.	Spices		
(i)	Large Cardamom	2873.76	-
(ii)	Ginger	12784.30	-
	Total Spices	15658.06	-
2.	Vegetables		
(i)	Potatoes	431.11	-
(ii)	Peas	159.90	-
(iii)	French Beans	96.97	-
(iv)	Cabbage	93.81	-
(v)	Tomatoes	73.30	1101.98
(vi)	Chayote	62.62	-
(vii)	Bean Butter	4.36	-
(viii)	Radish	1.69	-
(ix)	Onion	-	1753.27
(x)	Cabbage	-	624.19
(xi)	Cauliflower	-	613.34
(xii)	Chillies (long)	-	300.35
(xiii)	Brinjal (Aubergine)	-	299.01
	Total Vegetables	955.40	8501.24
3.	Fruits		
(i)	Orange	1137.58	-
(ii)	Pears	86.28	-
(iii)	Guava	8.68	-
(iv)	Banana	-	292.73
(v)	Mangoes	-	214.12
(vi)	Apples	-	169.19
(vii)	Pineapple	-	-
	Total Fruits	1250.15	872.56
4.	Flowers		
	Cut Flowers	886.70	-
	Flower Bulbs	1569.60	-
	Total	2456.30	-

Source: Department of Horticulture, Government of Sikkim, Gangtok

Table 2.19: Procurement of Food Grains and Other Essential Items from the Central Pool: 1991-1995

Items	Unit	1991	1992	1993	1994	1995
Rice	Tonnes	5,40,00	5,40,00	5,40,00	5,40,00	5,76,00
Wheat	Tonnes	720	720	720	120	120
Sugar	Tonnes	1980	2156	2136	2056	2048
Palmolein Oils	Mts	100	100	100	100	110
Salt	Mts	5130	5130	5130	5130	5130

Source: Food and Civil Supplies' Department, Government of Sikkim, Gangtok

Table 2.20: Growth in the Net State Domestic Product: 1965-66 to 1991-92 (at 1980-81 prices)

Year	Net State Domestic Product			Percentage Share of Different Sectors		
	Total (US \$ Million)	Per Capita Sikkim	Per Capita All India	Primary	Secondary	Tertiary
1965-66	-	-	-	80.61	7.3	12.10
1980-81	14	55	47	51.60	18.10	30.30
1985-86	22	58	53	50.96	16.45	32.54
1990-91	38.9	96	63	46.49	12.97	40.54
1991-92	41.22	100	63	36.01	13.14	50.85

- Source: 1. Economic Survey of Sikkim, Bureau of Economics and Statistics, Dept. of Planning, Govt. of Sikkim, Gangtok, Sikkim
2. For 1965-66: Pradyumna P. Karan (1984), Sikkim Himalaya: Development in Mountain Environment, Institute for the Study of Languages and Cultures of Asia and Africa, p 23

- Note: 1. Primary Sector includes agriculture and allied and mining
2. Secondary sector includes manufacturing, construction, electricity, water supply, etc
3. Tertiary sector includes transport, communications, trade, hotels and restaurants, banking, insurance, public administration, etc

Table 2.21: Infrastructural Facilities: 1975-76 to 1994- 95

Particulars	Unit	1975-76	1979-80	1984-85	1990-91	1994-95
Power Generated	MkWh	2.25	23.11	29.34	38.89	58.54
Villagers Electrified	Per cent	-	11.11	27.45	100.00	100.00
Educational Institutions	Number	264	470	666	1235	1458
Enrollment in School	Number					
Boys	Number	13764	30852	50103	59971	-
Girls	Number	7195	19580	32528	50846	-
Total	Number	20959	50432	82631	1,10,813	1,28,253
Health Beds	Number	357	628	705	795	875
Hospital Dispensary	Number	31	52	105	163	173
Beds per 1,000 Pop.	Number	1.19	1.98	2.01	1.96	2.15
Water Supply	% of Village	24.04	-	-	-	81.30
Road length surfaced	km	-	1292	-	621	776
Unsurfaced		-	-	-	894	911
Total		-	1292	1391	1515	1727
Road length per 1,000 km	km	-	221.30	238.20	259.50	295.80
Post office including telegraph offices	Number	-	125	125	125	190
Banks	Number	-	10	-	55	66
Banks per ten thousand of population	Number	-	32.2	-	132.2	145.6

Source: Compiled from :

- 1) *Sikkim: A statistical profile, 1979-1980 to 1991-1992, Bureau of Economics and Statistics, Dept. of Planning, Government of Sikkim, Gangtok*
- 2) *Sikkim at a Glance, 1995, Bureau of Economics and Statistics, Dept. of Planning, Government of Sikkim, Gangtok*
- 3) *An Economic Survey of Sikkim, 1991-1992, Bureau of Economics and Statistics, Dept. of Planning, Government of Sikkim, Gangtok*

Table 2.22: Changes in Sectoral Outlays in Different Plans: First Plan to Eighth Plan (per cent)

Sectors	First plan	Second plan	Third plan	Fourth plan	Fifth plan	Sixth plan	Seventh plan	Eighth plan
Agriculture and allied	16.40	16.00	14.09	16.90	27.72	28.37	23.17	13.61
Rural Development	-	-	-	-	-	-	1.71	2.37
Irrigation and Flood Control	-	-	-	-	0.94	0.38	4.77	2.41
Power	9.20	8.40	7.30	5.80	9.69	8.43	17.24	24.91
Industries and Mines	5.60	1.90	8.10	9.76	6.52	4.69	3.67	3.85
Transport & Communications	48.20	48.00	47.60	41.30	27.40	24.38	19.28	16.67
Education	7.10	12.40	7.90	8.70	7.31	7.00	12.08	11.83
Health	7.10	7.20	9.40	3.90	3.70	3.13	2.51	9.67
Other Sectors	6.40	6.10	5.61	13.60	16.71	23.62	15.57	14.68
Total (Million US \$)	100.00 (0.93)	100.00 (1.83)	100.00 (2.78)	100.00 (5.36)	100.00 (16.57)	100.00 (45.71)	100.00 (66.20)	100.00 (154.29)

Source: (1) The expenditures for the sixth, seventh, and eight five-year plans have been compiled from respective plan documents, Department of Planning, Government of Sikkim, Gangtok

(2) The sectoral outlays for the first five year plan have been taken from the sixth five year plan, 1980-85, Department of Planning, Government of Sikkim, Gangtok, p11

Note: Figures in parentheses are total plan outlays in million US \$

Table 2.23 : Growth in Plan and Non-plan Expenditure (million US \$)

Year	Non-plan expenditure	Plan expenditure	Total
1979-80	4.95 (46.02)	5.81 (53.98)	10.76 (100.00)
1980-81	5.47 (45.08)	6.67 (54.92)	12.14 (100.00)
1981-82	5.59 (44.68)	6.93 (55.32)	12.52 (100.00)
1982-83	6.45 (48.83)	6.77 (51.17)	13.22 (100.00)
1983-84	7.80 (55.04)	8.11 (44.96)	15.91 (100.00)
1984-85	8.44 (39.88)	12.73 (60.12)	21.17 (100.00)
1985-86	12.21 (41.68)	17.09 (58.32)	29.30 (100.00)
1986-87	13.45 (41.63)	18.86 (58.37)	32.31 (100.00)
1987-88	17.71 (45.82)	20.95 (54.18)	38.66 (100.00)
1988-89	22.14 (48.60)	23.41 (51.40)	45.55 (100.00)
1989-90	21.55 (46.59)	24.70 (53.41)	46.25 (100.00)
1990-91	24.96 (48.91)	26.07 (51.09)	51.03 (100.00)
1991-92	29.16 (45.77)	34.61 (54.23)	63.77 (100.00)
1992-93	35.16 (50.56)	34.38 (49.44)	70.04 (100.00)
1993-94	39.51 (51.61)	37.04 (48.39)	76.55 (100.00)
1994-95	42.87 (52.08)	39.43 (47.92)	82.30 (100.00)

Source: Report on study of the financial position of the government of Sikkim on the 31st March, 1994,
Government of Sikkim, Gangtok

Note: Figures in parentheses are percentages

**Table 2.24: Growth in the Tax and Non-tax Sources of State Revenues:
1979-80 to 1994-95 (million US \$)**

Year	Tax revenue	Non tax revenue	Grants in aid	Total
1979-80	0.81 (8.65)	1.07 (11.36)	7.50 (79.99)	9.38 (100.00)
1980-81	0.83 (7.13)	1.57 (13.51)	9.24 (79.36)	11.64 (100.00)
1981-82	1.01 (9.03)	1.37 (12.27)	8.79 (78.70)	11.17 (100.00)
1982-83	1.10 (8.52)	2.18 (16.90)	9.63 (74.58)	12.91 (100.00)
1983-84	1.36 (8.51)	2.25 (14.02)	12.41 (77.47)	16.02 (100.00)
1984-85	1.73 (7.82)	3.05 (13.82)	17.29 (78.36)	22.07 (100.00)
1985-86	2.18 (8.32)	3.05 (11.81)	20.91 (79.87)	26.18 (100.00)
1986-87	2.78 (8.59)	4.17 (12.87)	25.47 (78.54)	32.42 (100.00)
1987-88	3.32 (8.86)	5.14 (14.25)	27.77 (76.89)	33.23 (100.00)
1988-89	4.32 (10.12)	6.54 (15.31)	31.84 (74.57)	42.70 (100.00)
1989-90	4.54 (11.84)	5.87 (15.30)	27.95 (72.86)	38.36 (100.00)
1990-91	4.37 (9.59)	7.63 (16.73)	33.58 (73.68)	45.58 (100.00)
1991-92	4.41 (8.46)	8.18 (15.70)	39.53 (75.84)	52.12 (100.00)
1992-93	4.65 (7.77)	8.83 (14.77)	46.32 (77.46)	59.80 (100.00)
1993-94	5.97 (9.31)	7.87 (12.25)	50.43 (78.44)	64.27 (100.00)
1994-95	5.43 (7.21)	8.42 (11.18)	61.50 (81.61)	75.35 (100.00)

Source: Report on study of financial position of the Government of Sikkim as of the 31st March, 1994, Government of Sikkim, Gangtok

Note: Figures in parentheses are percentages

Annex II

Tables Depicting Livelihood Options in Sikkim

Table 4.1: A Comparative View of Range of Livelihood Options Adopted by Farm Families

Number of options	% of Farmers			Large Farmers			All Farmers		
	% of All	HH Income (US\$)	Per capita Income (US\$)	% of HHs	HH Income (US\$)	Per capita Income (US\$)	% of HHs	HH Income (US\$)	Per capita Income (US\$)
Cardamom-dominated system									
I	3.33	1150	296				2.50	1150	296
II	10.00	850	472				7.50	850	172
III	26.67	1043	204	50.00	2192	304	32.50	1050	248
IV	46.67	1542	251	50.00	2005	514	47.50	1087	330
V	13.33	1718	222				10.00		222
All options	100.00	1391	233	100.00	2888	411	100.00		281
Maize-potato dominated system									
I	2.50	160	92	0.33	345	48	3.92		57
II	55.53	356	140	25.00	1057	144	31.37		121
III	53.85	709	131	38.33	1473	156	51.90		140
IV	10.26	2012	724	8.67	1801	200	9.81		235
All options	100.00	775	141	100.00	1305	154	100.00		145

Source: Field survey, 1992

Table 4.1: A Comparative View of Range of Livelihood Options Adopted by Farm Families

Number of options	Small Farmers			Large Farmers			All Farmers		
	% of HH	HH income (US\$)	Per capita income (US\$)	% of HH	HH income (US\$)	Per capita income (US\$)	% of HH	HH income (US\$)	Per capita income (US\$)
Cardamom-dominated system									
I	3.33	1150	288	-	-	-	2.50	1150	288
II	10.00	858	172	-	-	-	7.50	858	172
III	26.67	1083	201	50.00	2192	304	32.50	1509	248
IV	46.67	1542	251	50.00	3805	514	47.50	2137	330
V	13.33	1718	222	-	-	-	10.00	1718	222
All options	100.00	1361	233	100.00	2998	411	100.00	1771	281
Maize-potato dominated system									
I	-	-	-	-	-	-	-	-	-
II	2.56	198	99	8.33	315	45	3.92	256	57
III	33.33	556	113	25.00	1057	144	31.37	650	121
IV	53.85	704	131	58.30	1473	156	54.90	896	140
V	10.26	2012	224	8.37	1801	300	9.81	1970	235
All options	100.00	776	141	100.00	1300	154	100.00	899	145

Source: Field Survey, 1996

Note : 1. Livelihood options adopted by the households are (1) crop production; (2) large cardamoms; (3) livestock;

(4) agricultural labour; (5) non-agricultural labour; (6) service; and (7) business/shop

2. Household and per capita income are net incomes over cash variable expenses

3. HH = household

4. The exchange rate is one US \$ to Rs. 35

Table 4.2: Range-wise Livelihood Options and Their Contribution to Household Income, All Households:
Maize-Potato Dominated Farming System

Options/Range of Options	Per cent of households					Per cent of income				
	1	2	3	4	5	1	2	3	4	5
Crop production	-	100.0	100	100	100	-	27.06	21.69	12.91	24.75
Large cardamoms	-	-	37.50	92.86	100	-	-	19.23	15.84	4.97
Livestock	-	100.0	100	100	100	-	72.94	11.76	18.09	11.28
Agri-labour	-	-	43.75	57.14	80.00	-	-	23.58	16.81	7.14
Non-agri labour	-	-	6.25	7.14	20.00	-	-	3.96	3.01	4.18
Service	-	-	12.50	25.0	60.00	-	-	19.78	27.05	33.76
Business/shop	-	-	-	17.86	40.00	-	-	-	6.29	13.92

Source: Field Survey 1996

Table 4.3: Range-wise Livelihood Options and Their Contribution to Household Income, Small Households: Maize-Potato Dominated Farming System

Options/Range of Options	Per cent of households					Per cent of income				
	1	2	3	4	5	1	2	3	4	5
Crop production	-	100	100	100	100	-	8.99	28.19	14.44	21.59
Large cardamoms	-	-	30.76	90.48	100	-	-	17.60	11.60	11.40
Livestock	-	100	100	100	100	-	91.01	8.89	19.22	4.18
Agri-labour	-	-	53.85	66.67	75.00	-	-	33.92	22.96	3.62
Non-agri labour	-	-	7.69	4.76	25.00	-	-	5.70	2.32	5.11
Service	-	-	7.69	19.05	75.00	-	-	5.70	21.11	41.32
Business/shop	-	-	-	19.05	25.00	-	-	-	8.35	12.78

Source: Field Survey 1996

Table 4.4: Range-wise Livelihood Options and Their Contribution to Household Income, Large Households:
Maize-Potato Dominated Farming System

Options/Range of Options	Per cent of households					Per cent of income				
	1	2	3	4	5	1	2	3	4	5
Crop production	-	100	100	100	100	-	38.42	4.71	10.72	38.90
Large cardamoms	-	-	66.66	100	100	-	-	47.17	27.40	8.51
Livestock	-	100	100	100	100	-	61.58	12.54	11.01	10.71
Agri-labour	-	-	-	28.57	100	-	-	-	7.98	22.84
Non-agri labour	-	-	-	14.28	-	-	-	-	3.99	-
Service	-	-	-	14.28	100	-	-	-	3.32	19.04
Business/shop	-	-	33.33	42.86	-	-	-	35.58	35.58	-

Source: Field Survey 1996

EVIDENCE OF SU
MOUNTAIN AGRI

Annex III

HOI

Survey Questionnaire

Graphic Features

MICRO LEVEL EVIDENCE OF SUSTAINABLE MOUNTAIN AGRICULTURE: THE EXPERIENCES OF SIKKIM

HOUSEHOLD QUESTIONNAIRE

Name of household _____

Village _____

District _____

Ethnicity _____

Date of Interview _____

1. Demographic Features

No	Name of Head of the Family	Age	Sex	Education	Occupation				Remarks
					Main	Subsidiary Day/Month	Monthly Income	Place of Work	
1.									
2.									
3.									
4.									
5.									
6.									

Code:

Education: ☐ Illiterate, 1. Primary, 2. Middle, 3. Matric, 4. Graduate, 5. Above, 6. School Going

Occupation: 1. Agriculture, 2. Service, 3. Shop/Business/Trade, 4. Agricultural Labour, 5. Non agricultural Labour, 6. Carpenter/Mason, 7. Other

2. Land Utilisation Pattern

1.	Total Land Owned	Acres	
2.	Land Leased Out		
3.	Land Leased In		
4.	Operated Land		
	<i>Khet*</i>		
	<i>Pakho (Bari)</i>		
5.	Grassland/Pasture		
6.	Fallow Land		
7.	Forests/Trees		
8.	Land Not Fit for Cultivation		
9.	No. of Fragments		

* *Khet* irrigated farmland
Pakho (Bari) unirrigated farmland

3. Livestock Inventory

	Livestock	No.	Present Value	Production	Fodder Month/Day	Concentrates Kg/days	Labour Hours/Day	Other
1.	Cows Local Improved							
2.	Young Stock							
3.	Bullocks							
4.	Pigs							
5.	Goat							
6.	Sheep							
7.	Poultry							
8.	Other							

4. Asset Inventory

	Particular	Present Value	
1.	Residential Houses		
2.	Cattle Sheds		
3.	Agricultural Assets		
	- Traditional		
	- Modern		
4.	Furniture		
5.	Television		
6.			

5. Consumption Pattern

Items	Quantity Per Month	Value (Rs)
A. <u>Food Grains</u>		
1. Maize		
2. Rice		
3. Wheat		
4. Finger Millet		
5. Potatoes		
6. Pulses		
7. Oil/Ghee		
8. Milk		
9. Sugar		
10. Meat/Eggs		
11. Beverages		
12. Fruits/Vegetables		
13. Other (wine/cigarettes)		
B. <u>Non-food</u>	<u>Total Yearly Value (Rs)</u>	
1. Clothing		
2. Education		
3. Health		
4. Transport		
5. Social Ceremonies		
6. Fuelwood		
7. Electricity/Kerosene Oil		
8. Other		

6. Some General Questions Relating to Livestock

6.1 Do you have grazing animals Yes/No

- If yes where
- (i) Forests
 - (ii) Wasteland
 - (iii) Pastures

6.2 Fodder requirements met from own land? Yes/No
If no, to what extent are they met from the forests?

6.3 Milk sold per day (kg)? _____

Price _____

6.4 Other Livestock products sold?

Quantity _____

Price _____

6.5. No. of animals sold during last year? _____

Price _____

7. Gender Issues

Who makes the household decisions?

Male _____

Female _____

Both _____

7.1 Wage Rates? Male _____

Female _____

7.2 Who owns the land? Male _____

Female _____

8. Some General Questions

8.1 For how many months is your home production sufficient? _____

8.2 From where do you buy food for the remaining months?

(1) Fair Price Shop _____

(2) Shop _____

(3) Landlords _____

8.3 Do you use modern inputs? Yes/No

If no, why?

(i) Not available in time _____

(ii) Do not have money _____

(iii) Harmful to soil _____

(iv) Other reasons _____

6. Some General Questions Relating to Livestock

8.4 How do you cure cardomoms?

(i) Traditional *bhatti*

(ii) Modern

Why don't you use a modern *bhatti*?

(i) Not convenient

(ii) Requires more fuel

(iii) Price

(iv) Other livestock products sold?

8.5 To whom do you sell cardomoms

(i) Village Traders

(ii) Merchants from

(iii) Directly to the market

8.6 Has there been any change in the varieties of Yes/No

large cardamoms for the last 10-15 years

8.7 What facilities have been provided by the government to increase its production?

(a)

(b)

(c)

8.8 Has the Spices' Board of India helped to increase its production? Yes/No

If yes, how?

(a)

(b)

(c)

- 8.9 Hold old is your plantation? _____
- 8.10 How much wood is required to cure one maund* of cardamoms

- 8.11 Why don't you switch over to other cash crops?
 (1) Not enough land
 (2) Production is risky
 (3) Good soil is not available
 (4) Marketing problems
 (5) _____
- 8.12 Is there any change in the water level in natural resources?

- 8.13 Have there been any increases in the intensity and frequency of landslides over the last two decades?

- 8.14 Is there any change in the rainfall patterns? _____
- 8.15 Are there any changes in the climate and crops grown in a particular place?

- 8.16. Time devoted to fetch field fodder twenty years ago? _____
 now? _____
- 8.17. Are there any increases in land and water related disputes? _____
- 8.18. Are there any changes in the availability of common land? _____
- 8.19. Are there any changes in the sustainability of common land? _____
- 8.20. Is there any abandoned land? _____
- 8.21. Has the diversity of crops grown increased or decreased?

* A maund is a measurement of weight varying locally - normally equivalent to a 37.32 kilogrammes.

9. Cropping Pattern/Labour Use

No	Crops	Area (Acres)	Production (Maunds)			Labour use (days)			Bullock (Labour Days)	FYM/ Compost (Kitta)	Chemical Fertilizers (Bags)	Seed (kg)	Others
			Total	Self Con	Sold (price)	Preparation of Land	Wee- ding	Harves- ting					
1.	Maize-Potato Local Improved												
2.	Maize-Pulse Local Improved												
3.	Maize-Ginger Local Improved												
4.	Paddy-Fallow Local Improved												
5.	Large Carda- mon-Agro-For												
6.	Ginger												
7.	Wheat												
8.	Barley												
9.	Millet												
10.	Potatoes												
11.	Oil Seeds												
12.	Pulses												
13.	Vegetables												