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INDEX OF REGIONAL VARIATION

FOR NEPAL

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Introduction

Data collection is very difficult in Nepal, as in any developing country. Because of the geographic terrain, transport and communication problems can be almost overwhelming. People surveyed are likely to be illiterate and unable to work with numbers. The units of measurement used might differ even from village to nearby village. Enumerators may not be well trained and supervised. Much of the editing and some of the computation may be done by hand.

In the sixty research and reports examined, much of the data was collected for area specific studies, particularly for integrated rural development programs. National surveys are very expensive in terms of time and resources and so are infrequently done. Those that are conducted may be compiled by development region or geographic area but not usually both. It was hoped to be able to differentiate by Mountains/Hills/Terai, but so few studies of that type have been done that the categories of Mountains and Hills/Terai had to be used, along with the four Development Regions.

In general it is very important that data be used in a relative sense. For example, higher agricultural production in an area does not necessarily mean people are better off there, as there may be more land or more people or both in that area as compared to another. So calculating production/cultivated hectare or/person yields a better result in a relative sense.

One reason for constructing this Index of Regional Variation is to compare results geographically. Another reason is to compare results over time to see what kinds of changes have occurred. However, this is very difficult in Nepal because few statistics, except for agricultural and population and perhaps health, are collected repeatedly in a comparable form to the last time. Nevertheless this paper represents a one-time attempt to compile suitable secondary data into an Index of Regional Variation, with hopes that the exercise will be repeated in the future.

The study is arranged first of all by topic of index - industry, participation, transportation, employment, migration, income and expenditure, status of women, education, health, nutrition, population, and finally agriculture. It would have been desirable to include areas of clothing, housing, fuel, water and sanitation, and wealth, but appropriate data are not easily available.

In each section, areas by geography and development region are mentioned and mapped if they are particularly high or low. (Appendix Seven contains the detailed results for means, standard deviations, and confidence intervals.)

The technique used is that of indexing. In this case, each value is given a number between 1 to 100, the 1 being the least desirable and the 100, the most desirable. All other values will fall in between on a continuum. Indexing allows combining and comparing very different types of data. But weights must always be chosen when combining, and that decision is

necessarily a value judgment which may differ from person to person. In this paper, equal weights are given unless a footnote states to the contrary. Also, the original indices from which the combination comes are included, so anyone could choose any weighting system and calculate the resulting index.

In the last section on Nepal, the geographical and regional areas are examined individually. The Hills and Mountains are compared to the Terai, and the different Development Regions are ranked.

Some studies put districts in different geographical categories than others. And at time political changes are made which result in new boundaries. Appendix One lists the classification used in this study.

Although all computation were done twice and results were checked for inconsistencies, considering the mass of data involved and the number of calculations, no doubt some errors remain.

Industry

Gross output of manufacturing establishments per person is one method used as an indicator for industry, collected as a part of a census of manufacturing establishments. The Eastern and Far Western Hills and Mountains are relatively low while the Eastern Terai ranks high.

	Gross Output of Manufacturing Establishments Per Person (Rupees)	Index
Eastern Hills and Mountains	.08	1*
Eastern Terai	.44	100**
Eastern Development Region	.22	50
Central Hills and Mountains	.13	30
Central Terai	.30	68
Central Development Region	.22	50
Western Hills and Mountains	.02	5
Western Terai	.22	50
Western Development Region	.07	16
Far Western Hills and Mountains	.00	3*
Far Western Terai	.24	55
Far Western Development Region	.06	14
Hills and Mountains	.05	11
Terai	.28	64
Nepal	.15	34

*Low
**High

Source: Central Bureau of Statistics, Census of the Manufacturing Establishments 1972-73 (Kathmandu: National Planning Commission Secretariat, 1973), page 75.

NEPAL: Industry

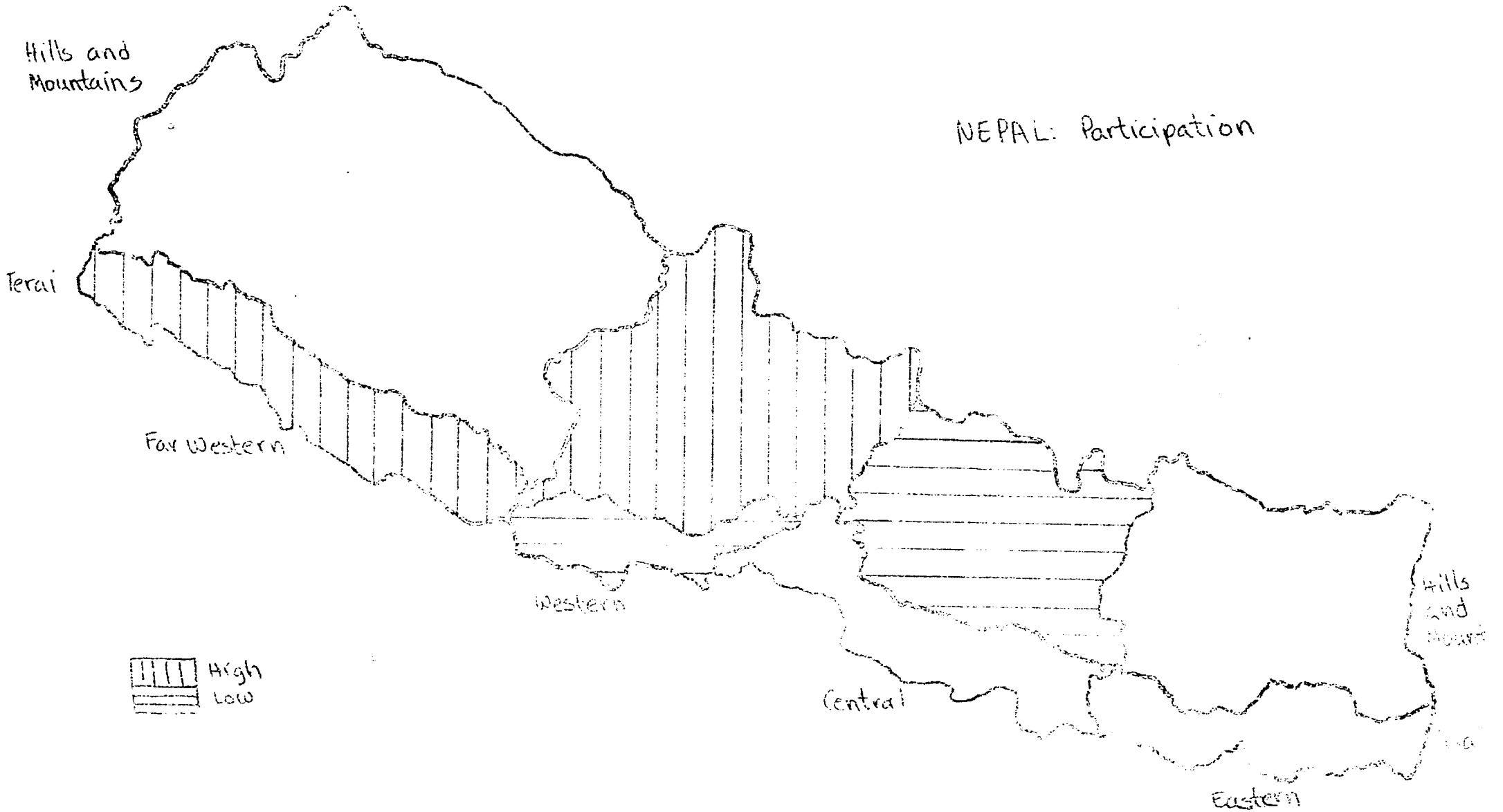
Participation

The data for participation come from a general health review from one of the questions asking if the households contributed any labor, money or materials to a health service project. The Central Hills and Mountains and the Western Terai are significantly lower while the Western Hills and Mountains and the Far Western Terai are significantly higher.

	Percentage of Households Contributing to Health Service Project (%)	Index
Eastern Hills and Mountains	24	55
Eastern Terai	12	27
Eastern Development Region	17	39
Central Hills and Mountains	4	9*
Central Terai	16	36
Central Development Region	7	16
Western Hills and Mountains	44	100**
Western Terai	0	1*
Western Development Region	43	98**
Far Western Hills and Mountains	23	52
Far Western Terai	36	82**
Far Western Development Region	27	61
Hills and Mountains	16	36
Terai	18	41
Nepal	16	36

*Low
**High

Source: Ministry of Health, Mid Term Health Review 2035 (Kathmandu: His Majesty's Government, 1979), page 14.22.


NEPAL: Participation
Hills and Mountains
Terai
Far Western
Western
Central
Eastern
Hills and
High
Low

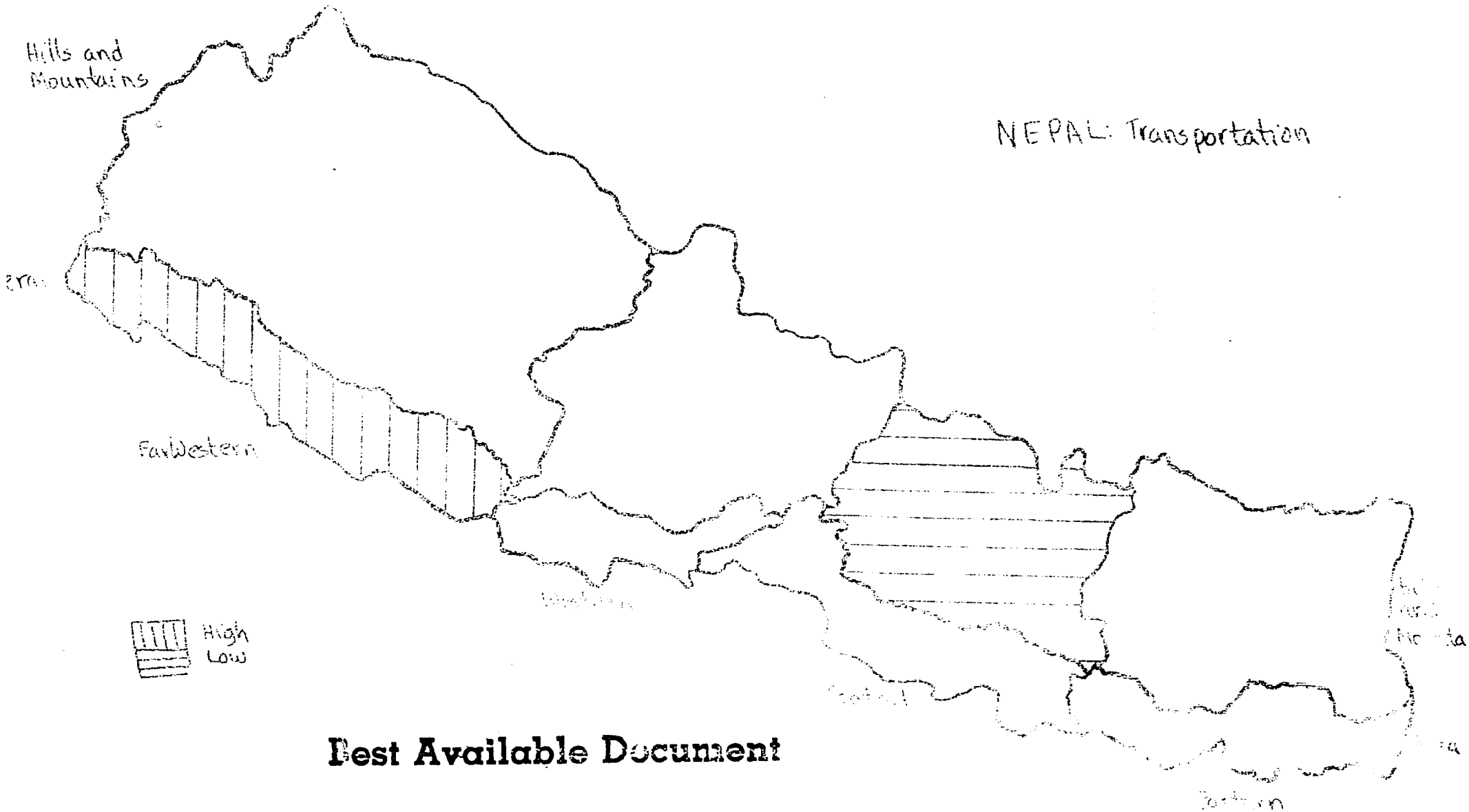
Transportation

Population per air field is used as an indicator of transportation. It would be useful to have figures on roads or trails also, as the latter certainly are the most important means of movement for most of the people in the country. The Central Hills and Mountains fall in the low range and the Far Western Terai falls in the high range.

	Population Per Air Field (1000)	Index
Eastern Hills and Mountains	176	97
Eastern Terai	463	61
Eastern Development Region	254	87
Central Hills and Mountains	966	1*
Central Terai	484	99
Central Development Region	644	39
Western Hills and Mountains	374	72
Western Terai	595	45
Western Development Region	411	68
Far Western Hills and Mountains	229	90
Far Western Terai	148	100**
Far Western Development Region	202	93
Hills and Mountains	273	85
Terai	440	64
Nepal	330	78

*Low
**High

Source: World Health Organization, Country Profile Nepal (Kathmandu: World Health Organization, 1979), page 44.



Best Available Document

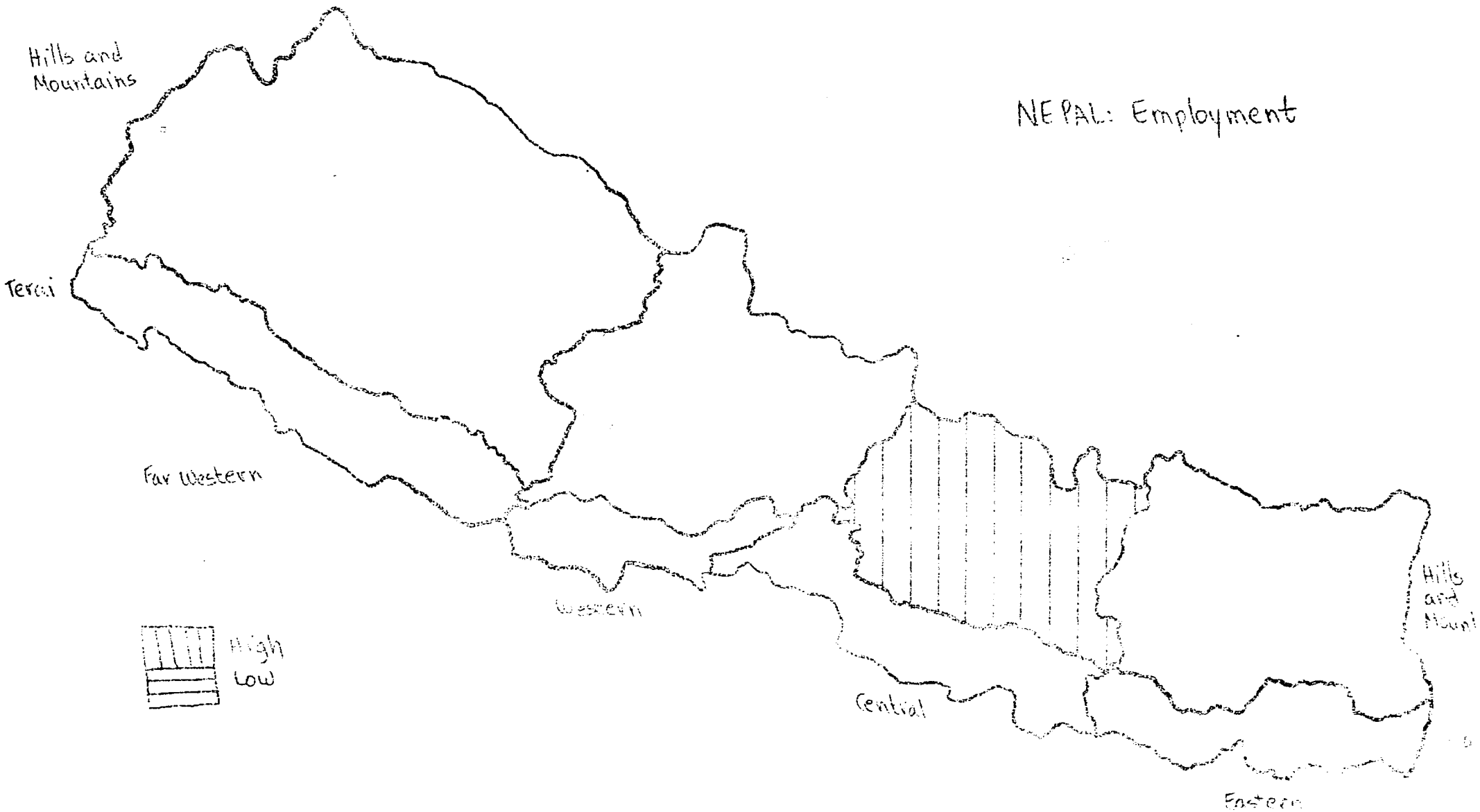
Employment

Two measures are used for employment, both from the census. One is the proportion of the population that is economically active. The other is the proportion of the economically active population that is employed in agriculture, forestry and fishing. As a country develops, the first measure would be expected to increase. And the second should decrease as a move towards industrialization begins. The Central Hills and Mountains are relatively advanced, probably because the capital city of Katmandu is located in that area.

	Percent of Population Ten Years of Age and Over Economically Active (%)	Index	Percent of Economically Active Population Ten Years of Age and Over Agriculture, Forestry, and Fishing (%)	Index	Weighted Index for Employment
Eastern Hills and Mountains	60.30	58	97.91	1	30
Eastern Terai	51.80	11	89.40	99	55
Eastern Development Region	56.15	35	94.08	45	40
Central Hills and Mountains	63.97	78	89.33	100	89**
Central Terai	49.73	1	93.46	53	27
Central Development Region	56.94	39	91.11	80	60
Western Hills and Mountains	68.04	100	97.31	8	54
Western Terai	54.77	28	94.05	46	37
Western Development Region	64.83	82	96.64	16	49
Far Western Hills and Mountains	62.55	70	98.04	1	36
Far Western Terai	56.39	36	93.57	51	44
Far Western Development Region	61.09	62	97.06	11	36
Hills and Mountains	63.96	78	95.41	30	54
Terai	51.90	12	92.33	66	39
Nepal	59.33	52	94.37	42	47

**High

Source: Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume I, Part I, pages 19-01 to 30 and 21-01 to 62.


NEPAL: Employment
Hills and Mountains
Terai
Far Western
Western
Central
Eastern
Hills and Mount
High
Low

Migration

The proportion born and living in the same area from the census gives some idea of the stability of the population, though no direct information about outflows. Estimated migration rates have been calculated, though, and are presented. The Eastern and Far Western Hills and Mountains are at the low end of the scale while the Eastern and Far Western Terai are at the high end. More opportunities exist for land ownership in the Terai, and that is one important reason why people migrate down from the densely populated Hills and Mountains.

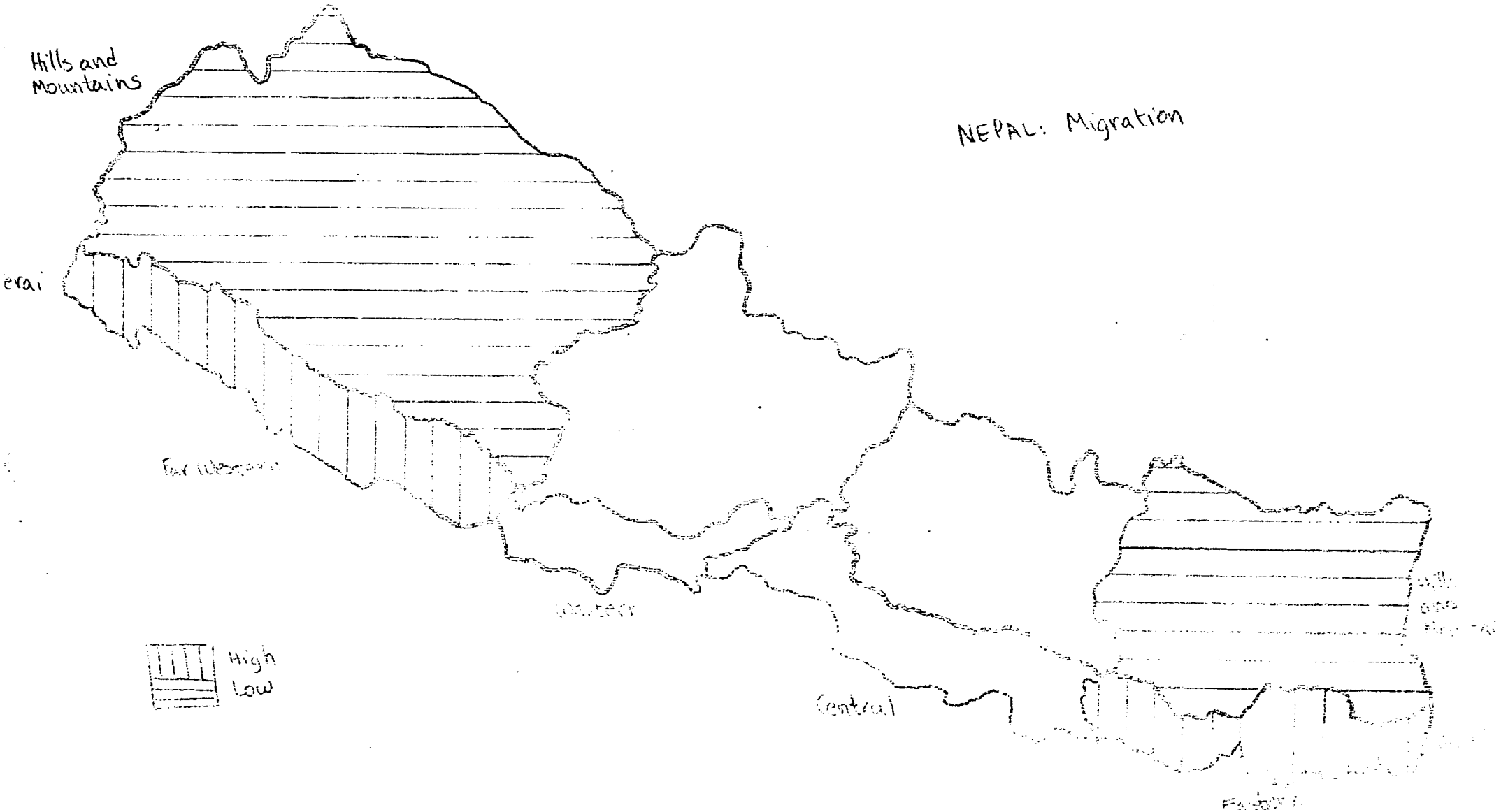
	Persons Born and Living in Same Area (1)	Index	Average Annual Net Migration Rate (2)	Index	Weighted Index for Migration
Eastern Hills and Mountains	99.08	5	- 1.08	1	3*
Eastern Terai	88.21	96	+ 1.53	100	98**
Eastern Development Region	93.89	48	+ 0.28	52	50
Central Hills and Mountains	97.92	14	- 0.27	31	22
Central Terai	90.89	73	+ 1.15	85	79
Central Development Region	94.51	43	+ 0.48	60	52
Western Hills and Mountains	99.64	1	0.00	41	21
Western Terai	89.94	81	+ 1.06	82	82
Western Development Region	97.51	18	+ 0.24	51	34
Far Western Hills and Mountains	99.61	1	- 1.04	2	2*
Far Western Terai	87.68	100	+ 1.44	97	98**
Far Western Development Region	96.76	24	- 0.47	23	24
Hills and Mountains	99.05	5	- 0.56	20	12
Terai	89.51	85	+ 1.29	91	88
Nepal	95.48	35	+ 0.38	48	42

*Low
**High

Source: Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume II, Part I, pages 10-01 to 61.

Asian Regional Team for Employment Promotion, The Challenge for Nepal (Bangkok: International Labour Organization, 1974), Appendix 1, page 3.

NEPAL: Migration



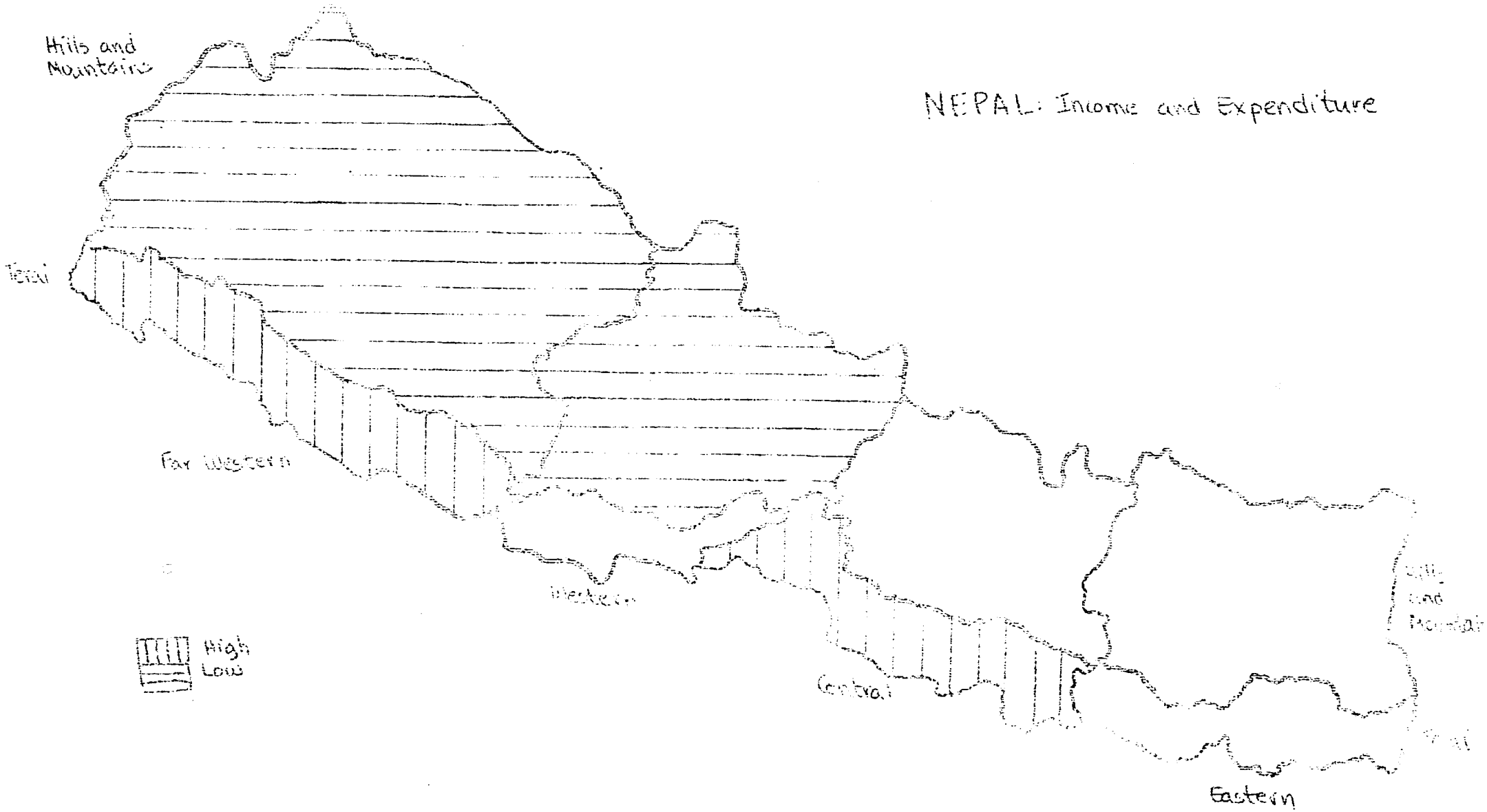
Income and Expenditure

A national study on the impact of development on people's lives collected information on both income and expenditure. (Details can be found in Appendix Two.) In addition, Gross Domestic Product per person was calculated on a geographical and regional basis. The Western and Far Western Hills and Mountains are generally depressed while the Central and Far Western Terai are elevated for income and expenditure.

	Weighted Index for Family Income and Expenditure	Gross Domestic Product Per Person (Rupees)	Index	Weighted Index for Income and Expenditure
Eastern Hills and Mountains	100	45	6	53
Eastern Terai	40	1371	100	70
Eastern Development Region	53	909	52	53
Central Hills and Mountains	29	752	36	32
Central Terai	85	1084	70	78**
Central Development Region	48	918	52	50
Western Hills and Mountains	24	397	1	12*
Western Terai	30	1177	80	55
Western Development Region	28	586	19	24
Far Western Hills and Mountains	8	426	3	6*
Far Western Terai	60	1374	100	80**
Far Western Development Region	20	668	27	24
Hills and Mountains	28	519	12	20
Terai	44	1223	85	64
Nepal	34	785	40	37

*Low
**High

Source: Asian Regional Team for Employment Promotion, The Challenge for Nepal (Bangkok: International Labour Organization, 1974), pages IV - 5 and 9.


NEPAL: Income and Expenditure
Hills and Mountains
Terai
Far Western
Western
Central
Eastern
High
Low

Status of Women

The data for women comes from the census. In all cases the interest is not solely in the absolute status of women, but rather in their condition relative to that of men. So a ratio is used to compare the status of women to that of men. For example, the percent of females who are literate divided by the percent of males who are literate is calculated. Fewer women than men now know how to read and write, so the closer this ratio is to one, the more nearly equal is the condition of women and men.

One section has to do with marriage. Legally, child marriage is prohibited in Nepal, but actually in the villages arranged marriages can occur at a very early age. So the proportion of young males who are married is compared to that of young females.

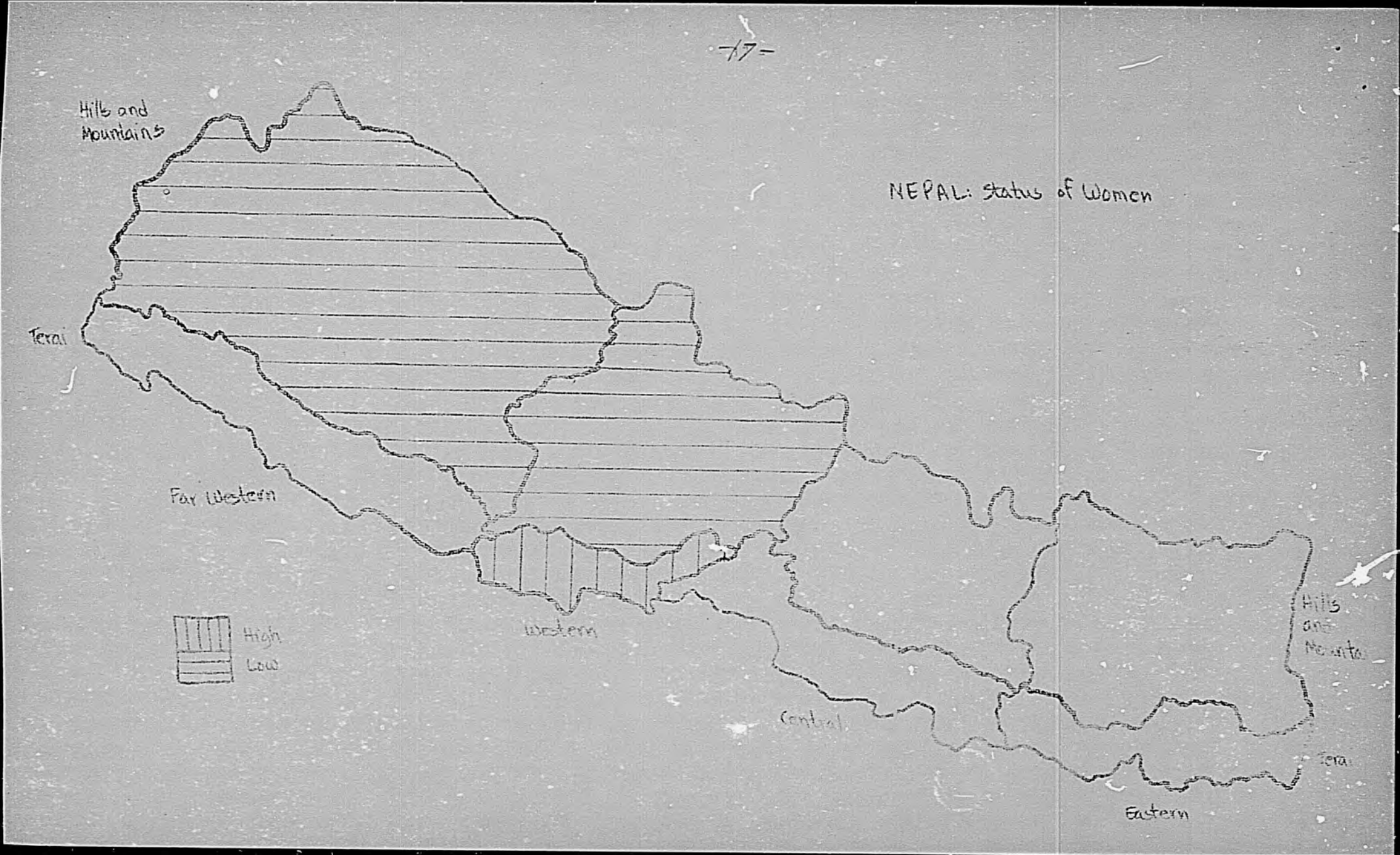
The second part concerns education, covering literacy, school enrollment, and whether or not primary school or above has been completed. The last section deals with employment and includes the percentage who are economically active, and of those who are economically active, the proportion who are professional/technical workers, farm/fish workers or unpaid family workers. (Details for the last two parts are in Appendix Three.)

Using all these indicators, the status of women in the Western and Far Western Hills and Mountains is quite low while in the Western Terai it is quite high.

	Percent Males Age Six to Fourteen Years Married/ Percent Females (%)	Index	Weighted Index for Education	Weighted Index for Employment	Weighted Index for Status of Women
Eastern Hills and Mountains	55	68	34	68	57
Eastern Terai	51	58	95	36	63
Eastern Development Region	53	63	61	46	57
Central Hills and Mountains	45	42	92	55	63
Central Terai	46	45	61	40	49
Cetral Development Region	47	47	79	46	57
Western Hills and Mountains	29	1	27	63	30*
Western Terai	67	100	69	49	73**
Western Development Region	56	71	31	56	53
Far Western Hills and Mountains	34	13	1	54	23*
Far Western Terai	45	42	77	58	59
Far Western Development Region	37	21	15	53	30*
Hills and Mountains	38	24	40	61	42
Terai	52	61	64	38	54
Nepal	50	55	56	49	53

*Low
**High

Source: Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume II, Part II, pages 15-01 to 37.


NEPAL: Status of Women
Hills and Mountains
Terai
Far Western
Western
Central
Eastern
Hills and Mountains
Terai
High
Low

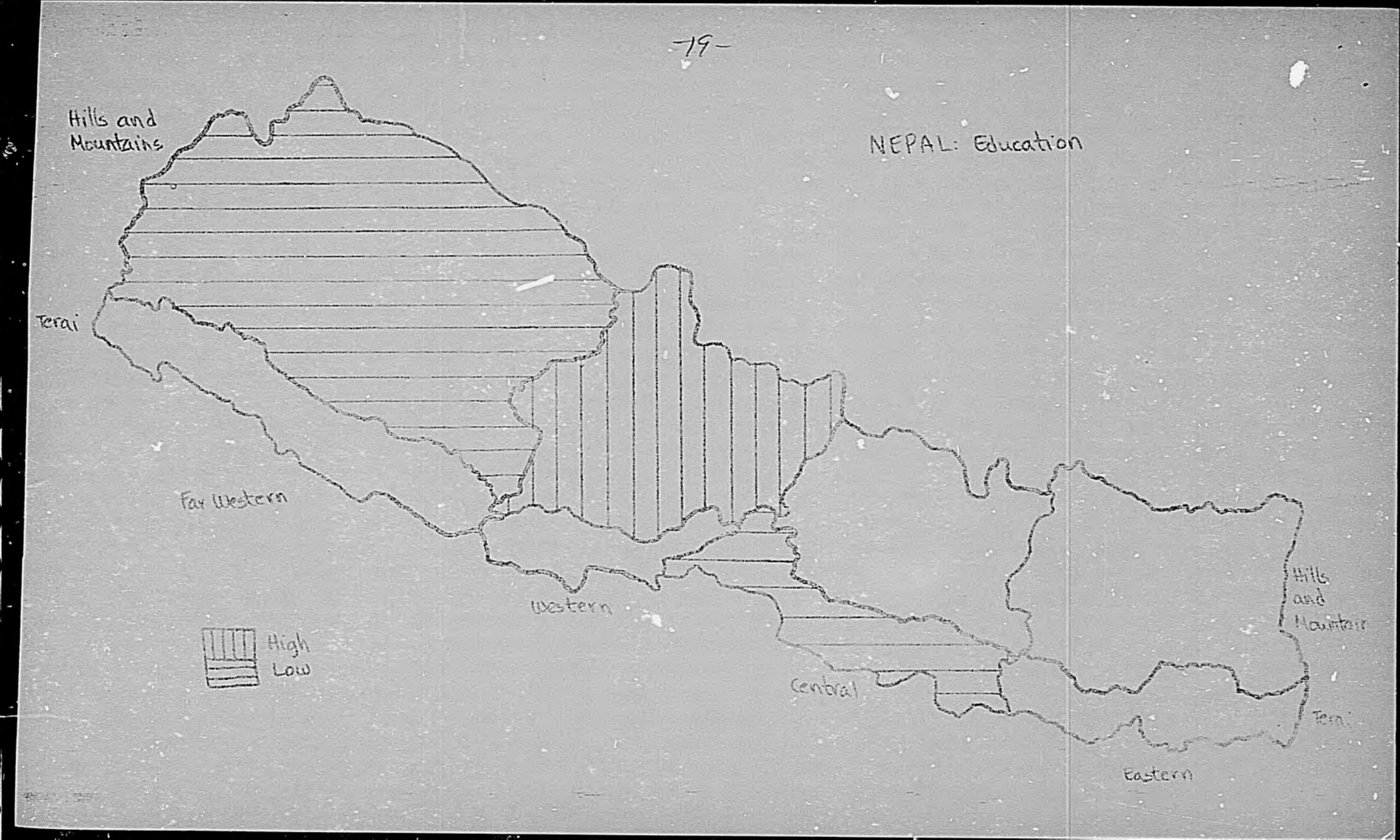
Education

The statistics gathered for education come from the census. The language spoken in the home, literacy, enrollment in school, and whether primary school was completed were all used as important indicators. The Central Terai and Far Western Hills and Mountains are low in range while the Western Hills and Mountains are high.

	Percent with Mother Tongue Nepali		Percent of Population Six Years of Age and Over Literate		Percent of Population Six Years of Age and Over Enrolled in School		Percent of Population Fifteen Years of Age Over Completing Primary or Above		Weighted Index for Education
	(%)	Index	(%)	Index	(%)	Index	(%)	Index	
Eastern Hills and Mountains	59.23	55	13.38	54	5.93	42	2.94	2	38
Eastern Terai	21.42	10	17.21	100	8.42	100	6.38	88	74
Eastern Development Region	40.47	33	15.25	76	7.15	71	4.65	45	56
Central Hills and Mountains	56.44	52	16.39	90	7.19	72	4.02	30	61
Central Terai	15.69	5	11.94	36	5.13	24	3.95	28	23*
Central Development Region	36.05	27	14.19	64	6.17	48	3.98	28	42
Western Hills and Mountains	80.51	81	17.21	100	8.35	98	5.77	73	88**
Western Terai	13.48	1	14.54	68	6.83	64	6.84	100	58
Western Development Region	64.33	61	16.57	92	7.99	90	6.04	80	81**
Far Western Hills and Mountains	96.46	100	8.92	1	4.09	1	2.84	1	26*
Far Western Terai	30.26	20	9.48	7	4.18	2	3.71	22	51
Far Western Development Region	84.32	85	9.05	2	4.11	1	3.04	5	23*
Hills and Mountains	73.80	73	14.07	62	6.45	55	3.96	28	54
Terai	19.08	7	13.58	56	6.25	50	5.04	55	42
Nepal	52.45	47	13.89	60	6.37	53	4.38	38	50

*Low
**High

Source: Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Vol II, Part II, pages 14-01 to 39 and 16-01 to 28 and 17-01 to 68 and 18-01 to 68.


NEPAL: Education
Hills and Mountains
Terai
Far Western
Western
Central
Eastern
Hills and Mountain
Terai
High
Low

Health

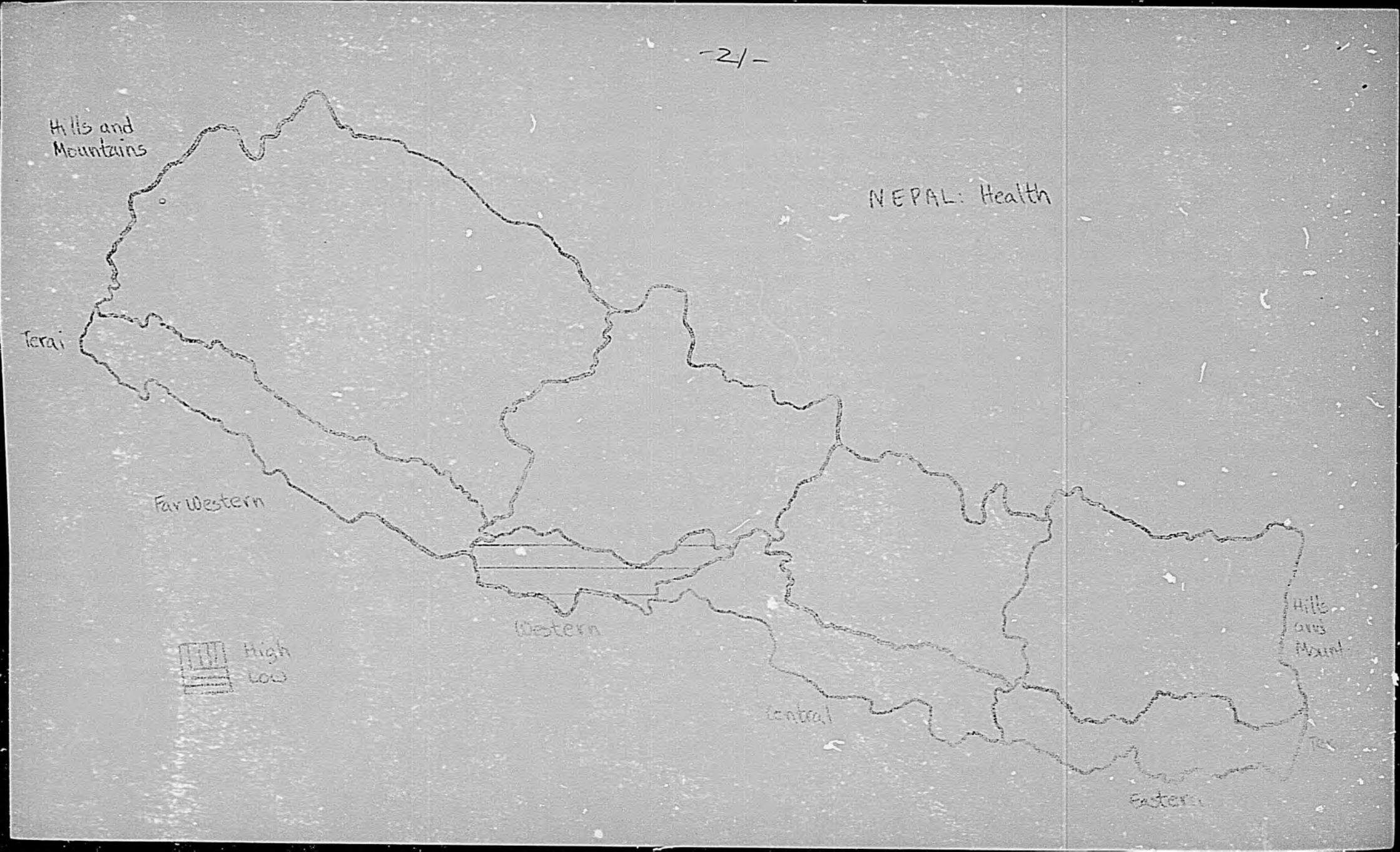
An annual review of the government's attempt to move towards an integrated health care system provided the figures for health. One series is the population per health post in each of the geographic and regional areas to show access to services. Another is the population per arm circumference measurement, a means of evaluating work in the field of nutrition. A third series is a combination of population per sterilization and population per regular pill and condom acceptor, a measure of the effectiveness of encouraging family planning. The fourth is an aggregation of population per primary smallpox vaccination, DPT I vaccination and DPT II and III vaccinations. (Details for the last two are in Appendix Four.) Only the Western Terai ranks quite low.

	Population per Health Post (1000)	Index	Population per Arm Circumference Measurement	Index	Weighted Index for Family Planning	Weighted Index for Vaccinations	Weighted Index for Health
Eastern Hills and Mountains	23.11	82	23.02	68	61	70	70
Eastern Terai	26.66	67	13.16	83	91	99	85
Eastern Development Region	24.76	75	16.79	77	84	98	84
Central Hills and Mountains	27.60	63	7.15	92	84	97	84
Central Terai	26.86	66	1.57	100	100	100	92
Central Development Region	27.22	65	2.58	98	96	100	90
Western Hills and Mountains	21.25	90	10.82	86	92	97	91
Western Terai	42.51	1	68.77	1	44	1	12*
Western Development Region	24.17	78	13.59	82	90	96	86
Far Western Hills and Mountains	18.91	100	15.30	80	42	99	80
Far Western Terai	20.45	93	2.59	93	81	100	93
Far Western Development Region	19.26	99	7.14	92	59	100	88
Hills and Mountains	19.84	96	10.05	87	84	98	92
Terai	31.65	45	3.38	97	94	100	84
Nepal	23.93	79	5.28	94	90	100	91

*Low

Source: Ministry of Health, Annual Report Integrated Community Health Project 2034-35 (1977-78) (Kathmandu: His Majesty's Government 1978), pages 28-29.

Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume I, pages 01-01 to 03.


NEPAL: Health
Hills and Mountains
Terai
Far Western
Western
Central
Eastern
Hills and Mount
Tera
High
Low

Nutrition

The per capita consumption of various cereal grains is one measure for nutrition, since that food provides the bulk of the diet for most Nepalese. Actual calculations have been made for calories produced as a percentage of calories needed. The production per capita of cereal grains and potatoes is also used. A national survey of the country collected information on age, weight, height and arm circumference of children and put the data together in different combinations to indicate nutrition status. (Details for the last two indexes can be found in Appendix Five.) The Far Western Hills and Mountains are depressed while the Western and Far Western Terai are elevated, as far as nutrition is concerned.

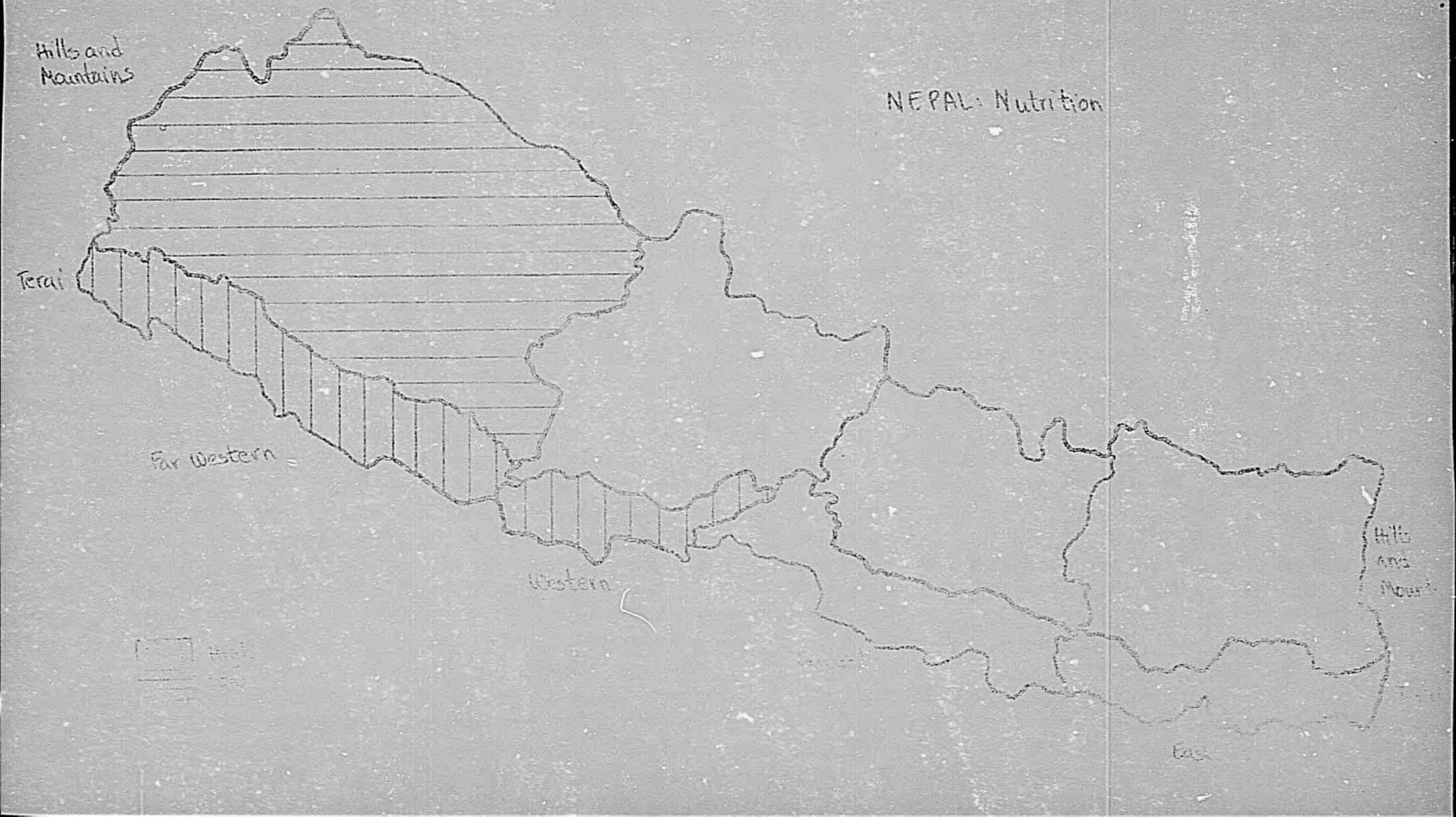
	Per Capita Consumption of Various Cereal Grains (Kg.)	Index	Calories Produced/ Calories Needed (%)	Index	Production Per Capita of Cereal Grains and Potatoes (Kg.)	Index	Weighted Index for Nutrition Status	Weighted Index for Nutrition
Eastern Hills and Mountains	116	12	67	7	256.47	14	82	29
Eastern Terai	125	20	167	74	515.69	59	60	53
Eastern Development Region	120	15	117	40	395.13	36	73	42
Central Hills and Mountains	112	8	57	1	224.93	9	46	16
Central Terai	159	53	166	73	504.44	57	37	55
Central Development Region	135	30	107	34	364.77	33	42	35
Western Hills and Mountains	104	1	69	9	193.83	3	59	18
Western Terai	208	100	200	95	691.85	89	43	82**
Western Development Region	129	24	101	30	314.04	24	54	33
Far Western Hills and Mountains	144	38	66	1	174.53	1	18	14*
Far Western Terai	208	100	207	100	757.42	100	38	84**
Far Western Development Region	160	54	95	26	316.96	24	24	22
Hills and Mountains	134	29	82	4	203.01	5	49	22
Terai	138	33	177	80	587.22	71	44	57
Nepal	136	31	106	33	351.24	30	47	35

*Low
**High

Sources: Department of Food and Agriculture Marketing Services, Agricultural Statistics of Nepal - 1977 (Kathmandu: Ministry of Food, Agriculture and Irrigation, 1977), page 142.

Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume I, pages 01-01 to 03.

South Asia Projects Department, Nepal Agricultural Sector Review (World Bank, 1979), page 99.


Hills and Mountains
NEPAL: Nutrition
Terai
Far Western
Western
Hills and Mount
East

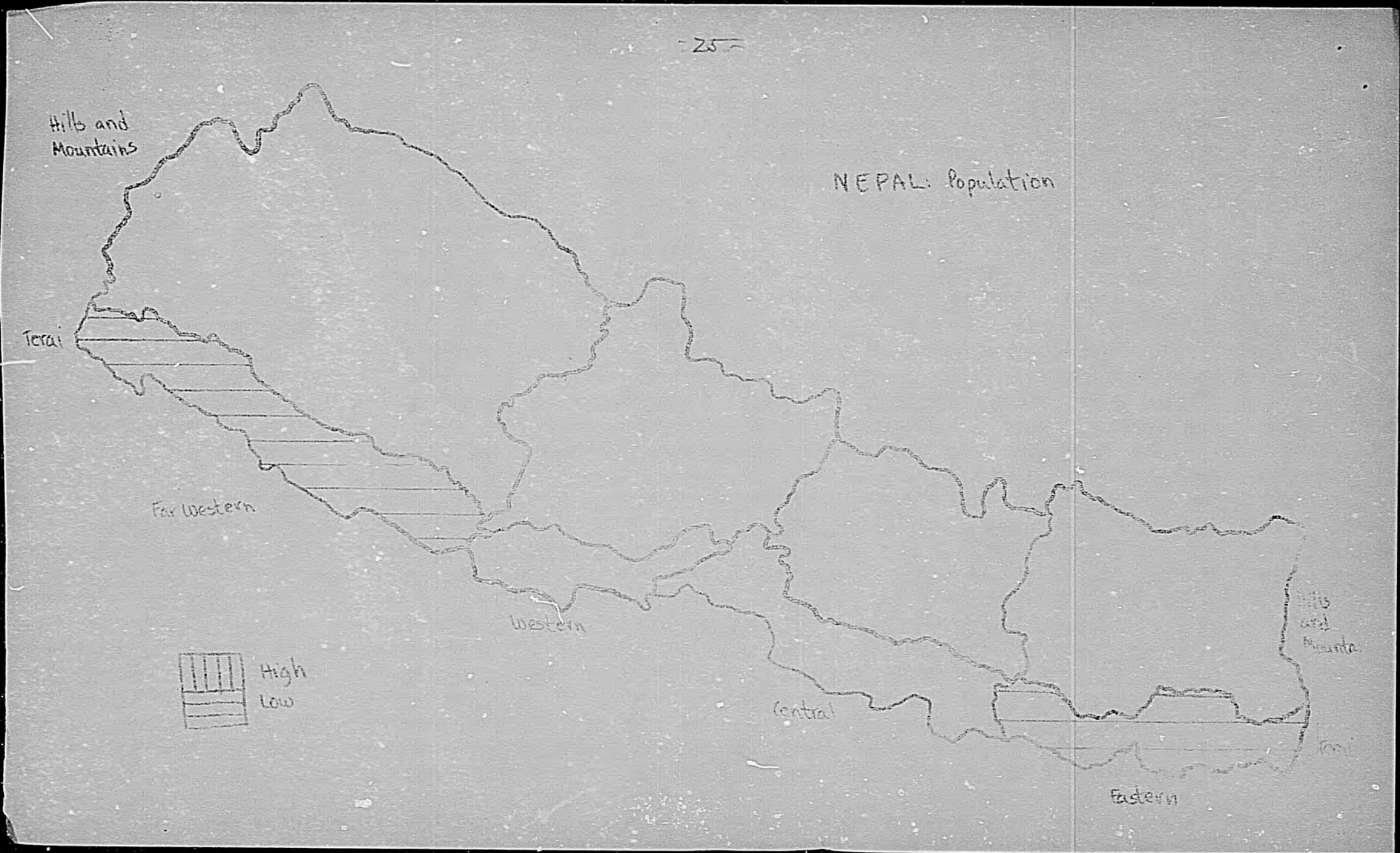
Population

The population growth rate from 1961 to 1971 is used as one indicator for population. In addition, four series from the census are included. One is the percentage of females fifteen years of age and over who have children. The second is the percentage of those same females who gave birth last year. Next comes the average number of children for females fifteen years of age and over. Last is the average family size for the different geographic and development regions. Only the Eastern and Far Western Terai are down on the scale.

	Population Growth Rate, 1961 to 1971		Percent of Females Fifteen Years of Age and Over with Children		Percent of Females Fifteen Years of Age & Over with Births Last Year		Average Number of Children for Females Fifteen Years of Age and Over		Average Family Size		Weighted Index for Population
	(%)	Index	(%)	Index	(%)	Index		Index		Index	
Eastern Hills and Mountains	7	100	64.47	100	7.42	100	2.16	1	5.60	79	75
Eastern Terai	45	28	72.10	1	8.48	1	2.09	21	5.44	89	28*
Eastern Development Region	23	70	68.13	52	7.93	52	2.12	12	5.52	84	54
Central Hills and Mountains	20	75	66.99	67	7.48	94	2.04	35	5.63	77	70
Central Terai	93	51	70.61	20	7.78	66	1.90	76	5.27	100	63
Central Development Region	26	64	68.79	43	7.63	80	1.97	56	5.44	89	66
Western Hills and Mountains	18	79	66.98	67	7.77	67	2.14	6	5.40	92	62
Western Terai	42	34	68.72	44	7.73	71	1.82	100	5.39	92	68
Western Development Region	23	70	67.38	62	7.76	68	2.06	29	5.40	92	64
Far Western Hills and Mountains	8	98	68.12	52	8.17	29	1.97	56	5.68	73	62
Far Western Terai	60	1	69.87	29	7.85	59	2.03	38	6.81	1	26*
Far Western Development Region	17	81	68.51	47	8.09	37	1.99	50	5.92	58	55
Hills and Mountains	14	87	66.79	70	7.73	71	2.07	26	5.62	77	66
Terai	42	34	70.70	18	7.99	46	1.96	59	5.49	86	49
Nepal	23	70	68.26	50	7.83	61	2.03	38	5.54	82	60

*Low

Source: Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume IV, pages 32-01 to 25 and 34-01 to 25 and Volume 1, pages 01-01 to 03.


NEPAL: Population
Hills and Mountains
Terai
Far Western
Western
Central
Eastern
Hills and Mountains
High
Low

Agriculture

Since Nepal's economy is an agricultural one, much data is available and this section is the most complete one. Calculation of the final index is from seven series. First is the cultivated area per person, a measure of land availability. Second is the percentage of the population economically active in agriculture, which should decline as industrialization begins. Next is the balance of foodgrains per capita, negative in the hills and mountains and for all of Nepal. Fourth comes the weighted index for net profit/total cost of production. (Details for paddy and wheat are in Appendix Six.) Then follows the percentage of gross domestic product from agriculture by geographic area and development region.

Sixth is a weighted index for productivity. This index was derived from three sets of data - agriculture gross domestic product per hectare cultivated for productivity of land, agriculture gross domestic product per economically active population in agriculture for productivity of labor, and a weighted index of yield rates. (Details for both indices are in Appendix Six.) For the latter, paddy, maize, wheat, millet, barley and potatoes - the staples of most Nepalese diets - are included.

Seventh is a weighted index for agricultural inputs and marketing. This is comprised of the percentage of cultivated land that is perenially irrigated and the population economically active in agriculture per co-op society. Also, the cultivated area per Junior Technical Assistant and the cultivated area per total seed distributed (paddy, wheat and maize). In addition, a part of the index is fertilizer use per hectare and existing as a proportion of proposed storage capacity. (All these parts are included in Appendix Six.)

The Eastern and Far Western Hills and Mountains fall in the low range of the agricultural index and the Far Western Terai in the high range.

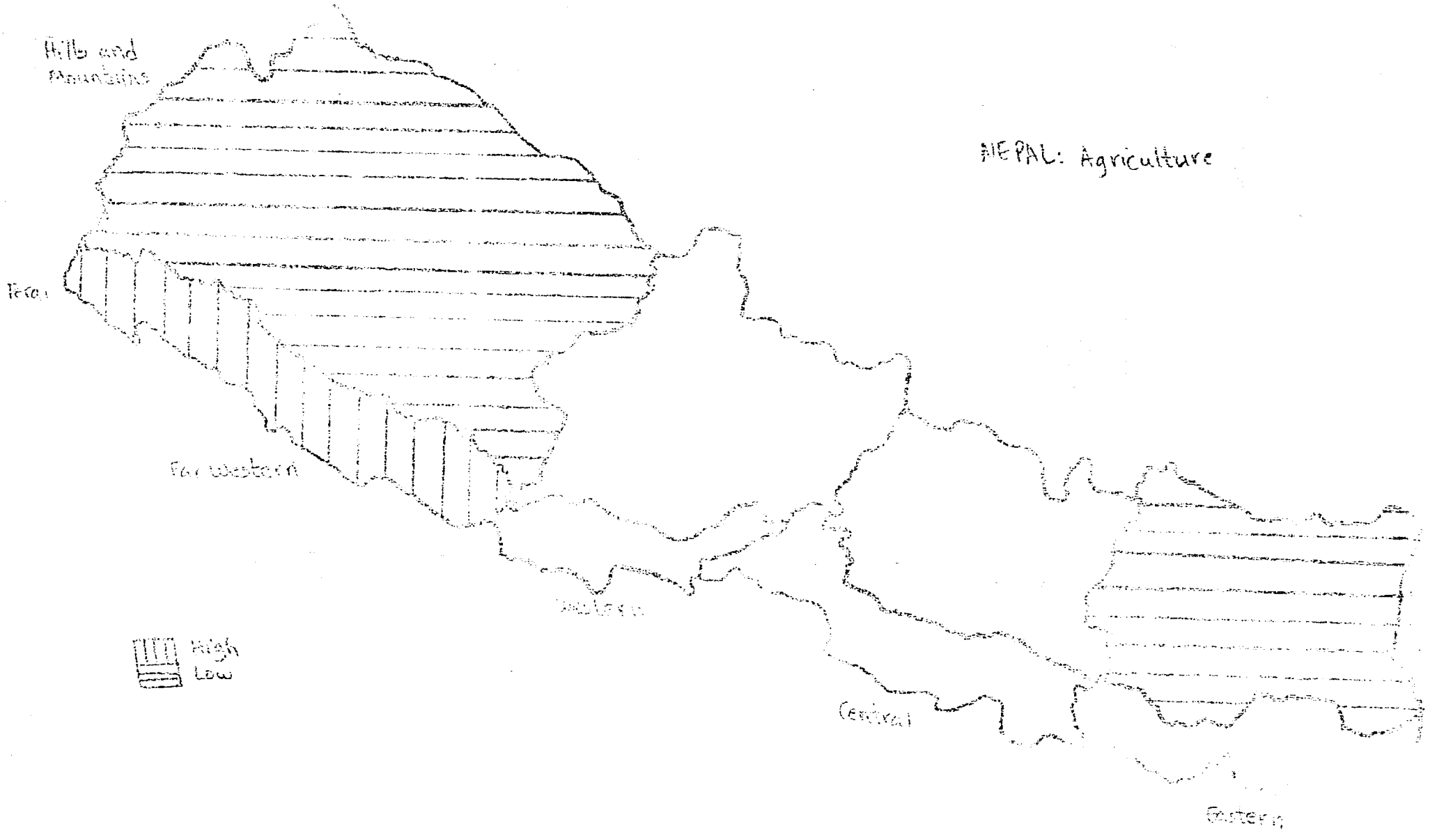
	Cultivated Area Per Person (Hectares)	Index	Percentage of Population Economically Active in Agriculture (%)	Index	Balance of Foodgrains Per Capita (Metric Tons)	Index	Weighted Index for Net Profit/ Total Cost of Production 1/	Percentage of Gross Domestic Product from Agriculture (%)	Index	Weighted Index for Productivity	Weighted Index for Inputs and Marketing	Weighted Index for Agriculture
Eastern Hills and Mountains	.15	24	42	35	.054	11	51	67	1	25	21	24*
Eastern Terai	.29	72	32	94	.061	55	10	56	86	34	46	57
Eastern Development Region	.22	48	37	65	.003	35	30	64	64	2	41	44
Central Hills and Mountains	.08	1	41	41	.064	2	1	51	100	62	72	43
Central Terai	.27	66	31	100	.037	46	4	65	61	55	29	49
Central Development Region	.16	28	37	85	.017	23	3	58	81	22	52	40
Western Hills and Mountains	.08	1	48	1	.081	1	95	83	11	43	30	30
Western Terai	.33	86	37	65	.175	100	17	68	52	35	29	55
Western Development Region	.14	21	45	18	.019	24	56	75	33	29	44	34*
Far Western Hills and Mountains	.09	3	44	24	.075	2	16	84	8	40	52	21**
Far Western Terai	.37	100	36	71	.078	42	95	76	31	47	24	61
Far Western Development Region	.16	28	42	33	.038	12	29	80	19	32	30	27
Hills and Mountains	.09	3	44	24	.069	5	29	70	47	43	52	29
Terai	.30	76	33	88	.069	59	23	64	64	36	32	54
Nepal	.17	31	40	47	.017	25	27	67	56	30	40	37

1/ .9 for Paddy
.1 for Wheat
* Low
** High

Sources: Asian Regional Team for Employment Promotion, The Challenge for Nepal (Bangkok: International Labour Organization, 1976), page IV-5 and 6.

Shrestha, G.K., Foodgrain Distribution System in Nepal (Kathmandu: Nepal Food Corporation, 1978), page 6.

Food and Agriculture Marketing Services Department, Production Costs and Return (Kathmandu: Ministry of Food, Agriculture and Irrigation, 1978).



NEPAL: Agriculture

Nepal

For Nepal as a whole, the twelve indices are combined, but with different weights. Eleven are multiplied by .05 for a total of .55 and agriculture, since it is such an important sector, is given a weight of .45 for a grand total of 1.00. Of course, if different weights had been chosen the results might very well be changed. As it is, the Far Western Terai comes out highest, and it is highest in the components of participation, transportation, migration, income and expenditure, nutrition, and agriculture and low only for population. The Far Western Hills and Mountains are the lowest, since they are down for industry, migration, income and expenditure, status of women, education, nutrition and agriculture. Certainly this is a strong argument for concentrating many development efforts in that area.

The Western Terai is low in participation and health but high for status of women and nutrition. The Western Hills and Mountains are down for income and expenditure and status of women but up for participation and education.

The Central Terai shows depressed education and an elevated income and expenditure. By contrast the Central Hills and Mountains are low in participation and transportation but elevated for employment.

The Eastern Terai excels in industry and migration but not for population. The Eastern Hills and Mountains are low for industry, migration and agriculture.

Looking at the geographic areas

Hills and Mountains	38
Terai	57

the Hills and Mountains reach only about two-thirds the level of the index for the Terai, so the Hills and Mountains are where emphasis should be given, particularly for industry, migration, income and expenditure and nutrition.

For Development Regions,

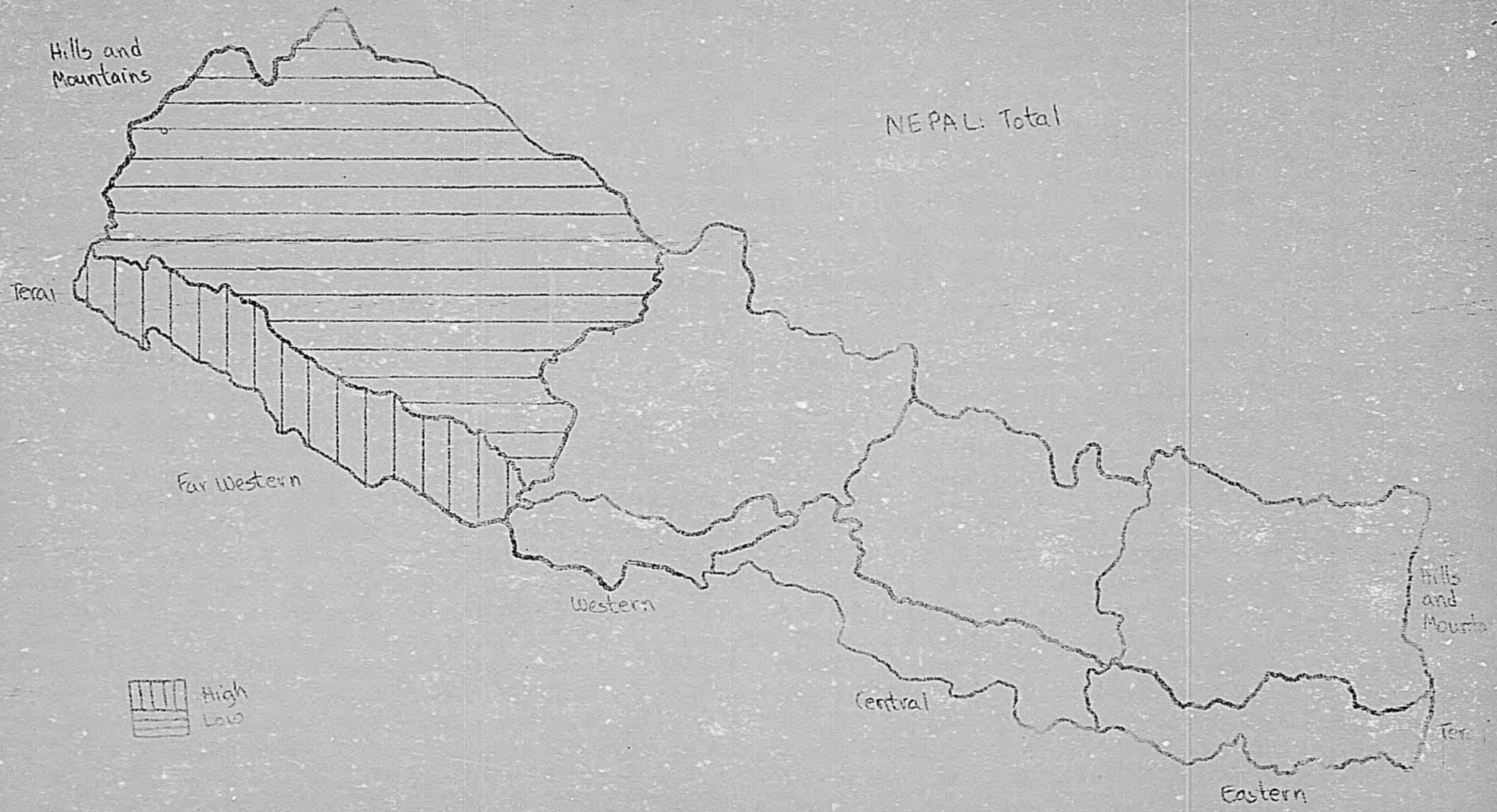
Far Western	36
Western	46
Central	46
Eastern	50

the index is highest in the East and falls off to the Far West. The West excels in participation and education but the Far West is low for the status of women and education. Much work remains to be done in many different geographical and topical areas.

	Index for Industry	Index for Participation	Index for Transportation	Weighted Index for Employment	Weighted Index for Migration	Weighted Index for Income and Expenditure	Weighted Index for Status of Women	Weighted Index for Education	Weighted Index for Health	Weighted Index for Nutrition	Weighted Index for Population	Weighted Index for Agriculture	Weighted Index for Nepal 1/
Eastern Hills and Mountains	1*	55	97	30	3*	53	57	38	70	29	76	24*	36
Eastern Terai	100**	27	61	55	98**	70	63	74	85	53	28*	57	61
Eastern Development Region	50	39	87	40	50	53	57	56	84	42	54	44	50
Central Hills and Mountains	30	9*	1*	89**	22	32	63	61	84	16	70	41	42
Central Terai	68	36	59	27	79	78**	49	23*	93	55	63	49	54
Central Development Region	50	16	39	60	52	50	57	42	90	35	65	40	46
Western Hills and Mountains	5	100**	72	54	21	12*	30*	68**	91	18	62	30	41
Western Terai	50	1*	45	37	82	55	73**	58	12*	82**	68	55	53
Western Development Region	16	98**	68	49	34	24	53	81**	86	33	64	34	46
Far Western Hills and Mountains	1*	52	90	36	2*	4*	23*	26*	80	14*	62	21*	29*
Far Western Terai	55	82**	100**	44	98**	80**	59	51	93	84**	26*	61**	66**
Far Western Development Region	14	61	93	36	24	24	30*	23*	88	32	53	27	35
Hills and Mountains	11	36	85	54	12	20	42	54	91	22	66	29	38
Terai	64	41	64	39	88	64	54	42	84	57	49	54	57
Nepal	34	36	78	47	42	37	53	50	91	35	60	37	45

*Low
**High

1/ .05 for all weight except agriculture which is .45.


Hills and Mountains
NEPAL: Total
Terai
Far Western
Western
Central
Eastern
Hills and Mountains
Terai
High
Low

Appendix One

- Districts by Development Region and Geographical Area

Eastern Hills and Mountains - Taplejung
Panchthar
Ilam
Sankhuwasabha
Terathum
Dhankuta
Bolukhumbu
Bhojpur
Khotang
Okhaldhunga
Udaipur

Eastern Terai - Jhapa
Morang
Sunsari
Saptari
Siraha

Central Hills and Mountains - Dolakha
Ramechap
Sindhuli
Sindhupalchowk
Rasuwa
Nuwakot
Dhading
Kavre Palanchowk
Bhaktapur
Kathmandu
Lalitpur

Central Terai - Dhanusha
Mahotari
Sarlahi
Makwanpur
Chitwan
Rautahat
Bara
Parsa

Western Hills and Mountains - Manang
Gorkha
Lamjung
Kaski
Parbat
Tanahu
Syangja
Palpa
Gulmi
Arghakhanchi
Mustang
Dolpa
Myagdi
Baglung

Western Terai - Nawalparasi
Rupendehi
Kapilvastu

Far Western Hills and Mountains - Rukum
Rolpa
Sallyan
Piuthan
Humla
Mugu
Tiarikot
Jumla
Jajarkot
Dailekh
Surkhet
Bajura
Bajhang
Accham
Doti
Darchula
Baitadi
Dandeldhura

Far Western Terai - Dang-Deukhuri
Banke
Bardia
Kailali
Kanchanpur

Appendix Two

Income and Expenditure

	Family Annual Income (Rupees)	Index	Family Annual Expenditure (Rupees)	Index	Weighted Index for Family Income and Expenditure
Eastern Hills and Mountains	6493	100	7700	100	100
Eastern Terai	4790	51	5714	30	40
Eastern Development Region	5121	61	4577	45	53
Central Hills and Mountains	3667	19	4226	39	29
Central Terai	5676	76	7368	94	85
Central Development Region	4532	44	4938	52	48
Western Hills and Mountains	3440	12	4057	36	24
Western Terai	3018	1	5440	60	30
Western Development Region	3300	8	4709	48	28
Far Western Hills and Mountains	3304	8	1999	1	4
Far Western Terai	6000	86	3915	34	60
Far Western Development Region	3697	20	3169	21	20
Hills and Mountains	3706	20	3978	35	28
Terai	4104	31	5306	58	44
Nepal	3933	26	4427	43	34

Source: National Planning Commission Secretariat, The Effects of the Impact of Development Programs on the Lives of People (Kathmandu: His Majesty's Government, 1977), Tables 10 and 12.

Appendix Three

Status of Women

	Percent Females Six Years of Age and Over Literate/ Percent Males (%)	Index	Percent Females Age Six to Fourteen Years Enrolled in School/Percent Males (%)	Index	Percent Females Fifteen Years of Age and Over Completing Primary or Above/Percent Males (%)	Index	Weighted Index for Education
Eastern Hills and Mountains	13	31	23	39	9	31	34
Eastern Terai	23	94	39	90	18	100	95
Eastern Development Region	18	62	32	68	12	54	61
Central Hills and Mountains	24	100	42	100	15	77	92
Central Terai	17	56	29	58	14	69	63
Central Development Region	21	81	38	87	14	69	79
Western Hills and Mountains	12	25	21	32	8	23	27
Western Terai	18	62	27	52	17	92	69
Western Development Region	13	31	21	32	9	31	31
Far Western Hills and Mountains	8	1	11	1	5	1	1
Far Western Terai	20	75	33	71	16	85	77
Far Western Development Region	10	12	17	19	7	15	15
Hills and Mountains	15	44	25	45	9	31	40
Terai	20	75	33	71	11	46	64
Nepal	17	56	29	58	12	54	56

Source: Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume II, Part II, pages 16-01 to 28 and 17-01 to 68 and 18-01 to 68.

	Percent Females Ten Years of Age and Over Economically Active/Percent Males		Percent Female Economically Active Ten Years of Age and Over Professional/ Technical Workers/Percent Male		Percent Male Economically Active Ten Years of Age and Over Farm/ Fish Workers/ Percent Female		Percent Male Economically Active Ten Years of Age and Over Unpaid Family Workers/ Percent Female		Weighted Index for Employment
	(%)	Index	(%)	Index	(%)	Index	(%)	Index	
Eastern Hills and Mountains	48	57	23	39	98	100	54	74	68
Eastern Terai	20	11	36	74	94	60	26	1	36
Eastern Development Region	35	36	24	42	95	70	39	34	46
Central Hills and Mountains	55	59	27	50	88	1	64	100	55
Central Terai	13	1	32	69	96	80	32	16	40
Central Development Region	34	34	30	58	92	40	46	53	46
Western Hills and Mountains	74	100	8	1	97	90	49	61	63
Western Terai	27	23	42	89	96	80	27	3	49
Western Development Region	63	82	12	11	96	80	46	53	56
Far Western Hills and Mountains	49	59	11	8	98	100	45	50	54
Far Western Terai	25	20	46	100	95	70	42	42	58
Far Western Development Region	46	51	16	23	97	90	45	50	53
Hills and Mountains	57	72	18	26	95	70	55	76	61
Terai	19	10	35	71	95	70	26	1	38
Nepal	42	48	21	34	95	70	43	45	49

Source: Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume III, Part I, pages 19-01 to 30 and 20-01 to 82 and Part II, pages 26-01 to 20.

	Population per Sterilization		Population per Regular Pill and Condom Acceptor		Weighted Index for Family Planning	Population per Primary Smallpox Vaccination		Population per DPT I Vaccination		Population per DPT II and III Vaccination		Weighted Index for Vaccinations
	(1000)	Index	(1000)	Index		(1000)	Index	(1000)	Index	(1000)	Index	
Eastern Hills and Mountains	5.07	44	.68	78	61	2.74	10	.62	100	1.81	100	70
Eastern Terai	2.08	85	.11	97	91	.10	97	.28	100	.55	100	99
Eastern Development Region	2.96	73	.20	94	84	.19	94	.39	100	.85	100	98
Central Hills and Mountains	3.07	71	.14	96	84	.19	94	2.43	100	9.61	98	97
Central Terai	.96	100	.03	100	100	.01	100	.11	100	.21	100	100
Central Development Region	1.46	93	.05	99	96	.02	100	.21	100	.41	100	100
Western Hills and Mountains	1.60	91	.23	93	92	.31	90	.33	100	.48	100	97
Western Terai	1.99	86	3.01	1	44	3.05	1	595.11	1	595.11	1	1
Western Development Region	1.68	90	.30	91	90	.40	8[illegible]	.44	100	.63	100	96
Far Western Hills and Mountains	8.26	1	.57	82	42	.07	98	2.36	100	3.64	99	99
Far Western Terai	3.28	68	.22	94	81	.01	100	2.37	100	2.25	100	100
Far Western Development Region	6.02	31	.41	87	59	.02	100	2.37	100	3.16	100	100
Hills and Mountains	2.73	76	.23	93	84	.15	95	.66	100	1.17	100	98
Terai	1.67	90	.07	99	94	.02	100	.23	100	.44	100	100
Nepal	2.12	84	.12	97	90	.03	99	.36	100	.66	100	100

Source: Ministry of Health, Annual Report Integrated Community Health Project 2034-35 (1977-78) (Kathmandu: His Majesty's Government, 1978), pages 28-29.

Central Bureau of Statistics, Population Census - 1971 (Kathmandu: National Planning Commission Secretariat, 1975), Volume I, pages 01-01 to 03.

Appendix Five

Nutrition

	Production Per Capita of Paddy (Kilograms)	Production Per Capita of Maize (Kilograms)	Production Per Capita of Wheat (Kilograms)	Production Per Capita of Millet (Kilograms)	Production Per Capita of Barley (Kilograms)	Production Per Capita of Potatoes (Kilograms)	Production Per Capita of Cereal Grains and Potatoes (Kilograms)	Index
Eastern Hills and Mountains	73.13	109.86	6.20	20.78	2.29	64.21	256.47	14
Eastern Terai	455.70	10.81	27.67	3.32	.46	17.73	515.69	59
Eastern Development Region	262.89	60.73	16.85	12.12	1.28	41.16	395.13	38
Central Hills and Mountains	86.44	75.51	21.92	11.36	.73	28.97	224.93	9
Central Terai	361.39	63.66	48.39	5.24	1.75	24.01	504.44	57
Central Development Region	223.99	69.58	35.17	8.30	1.24	26.49	364.77	33
Western Hills and Mountains	55.20	83.34	9.61	26.25	2.17	17.26	193.83	3
Western Terai	508.75	62.74	85.86	3.79	2.77	27.94	691.85	89
Western Development Region	164.67	78.37	28.01	20.83	2.32	19.84	314.04	24
Far Western Hills and Mountains	56.63	60.07	25.52	12.05	6.27	13.99	174.53	1
Far Western Terai	529.59	141.58	53.07	6.74	.49	25.95	757.42	100
Far Western Development Region	172.20	79.99	32.25	10.75	4.86	16.91	316.96	24
Hills and Mountains	66.19	78.62	10.07	16.98	2.80	28.35	203.01	5
Terai	448.25	59.69	49.37	4.83	1.37	43.71	587.22	71
Nepal	209.87	71.50	28.39	12.41	2.26	26.61	351.24	30

Source: Department of Food and Agricultural Marketing Services, Statistical Information: Eastern, Central, Western and Far Western Development Regions (Kathmandu: Ministry of Food, Agriculture and Irrigation, 1976), pages 1-16.

	Below Eighty Percent of Height-for-Age Median		Below Eighty Percent of Weight-for-Height Median		Wasting and Stunting Children 6-72 Months		Below Eighty Percent Weight-for-Age Median		Below Eighty-Two and One Half Percent of Reference Arm Circumference-for-Height Median		Weighted Index for Nutrition Status
	(%)	Index	(%)	Index	(%)	Index	(%)	Index	(%)	Index	
Eastern Hills and Mountains	4.4	33	3.2	100	2.0	100	67.8	75	4.6	100	82
Eastern Terai	1.9	91	10.2	1	4.3	8	65.3	100	4.6	100	60
Eastern Development Region	3.4	56	6.0	60	2.9	64	66.8	85	4.6	100	73
Central Hills and Mountains	3.2	60	7.0	46	4.2	12	71.2	40	5.5	72	46
Central Terai	1.5	100	7.2	43	4.2	12	72.7	25	7.6	6	37
Central Development Region	2.4	79	7.1	44	4.2	12	71.9	33	6.5	41	42
Western Hills and Mountains	3.4	56	5.3	70	3.7	32	70.9	43	4.8	94	59
Western Terai	5.8	1	6.5	53	4.0	20	70.3	49	4.8	94	43
Western Development Region	4.2	37	5.7	64	3.8	28	70.7	45	4.8	94	54
Far Western Hills and Mountains	4.4	33	7.6	37	4.5	1	75.2	1	7.2	19	18
Far Western Terai	3.2	60	6.1	59	4.2	12	69.7	56	7.8	1	38
Far Western Development Region	4.0	42	7.1	44	4.4	4	73.3	19	7.4	12	24
Hills and Mountains	3.9	44	5.9	61	3.7	32	71.5	37	5.6	69	49
Terai	2.9	67	7.5	39	4.2	12	69.7	56	6.4	44	44
Nepal	3.5	53	6.5	53	3.9	24	70.8	44	5.9	59	47

Source: United States Department of Health, Education and Welfare, Nepal Nutrition Status Survey (Kathmandu: His Majesty's Government, 1975), pages 18, 21, 30, 56, 58.

Agriculture

Appendix Six

	Net Profit/Total Cost of Production Paddy		Net Profit/Total Cost of Production Wheat		Weighted Index for Net Profit/ Total Cost of Production	Agriculture Gross Domestic Product Per Hectare Cultivated		Agriculture Gross Domestic Product Per Economically Active Population in Agriculture		Weighted Index of Yield Rates	Weighted Index for Productivity
						(Rupees)	Index	(Rupees)	Index		
Eastern Hills and Mountains	2.14	51	1.09	48	51	2647	10	942	11	55	25
Eastern Terai	1.40	4	1.23	60	10	2648	10	2433	78	14	34
Eastern Development Region	1.76	27	1.19	57	30	2647	10	1579	40	31	27
Central Hills and Mountains	1.34	1	56	1	1	4897	100	924	11	74	62
Central Terai	1.38	3	.74	16	4	2624	9	2233	69	26	33
Central Development Region	1.37	2	.70	13	3	3206	32	3437	34	33	33
Western Hills and Mountains	2.90	100	1.12	50	95	4080	67	690	1	61	43
Western Terai	1.47	8	1.63	96	17	2400	1	2138	65	38	35
Western Development Region	2.36	65	1.34	70	66	3127	29	978	13	45	29
Far Western Hills and Mountains	1.58	15	.80	22	16	4149	70	825	6	44	40
Far Western Terai	2.81	94	1.67	100	95	2808	16	2911	100	25	47
Western Development Region	1.78	28	.94	34	29	3369	39	1263	26	32	32
Hills and Mountains	1.79	29	.82	26	29	3851	58	836	7	64	43
Terai	1.66	21	1.05	44	23	2629	9	2360	76	22	36
Nepal	1.74	26	.96	36	27	3050	26	1319	28	35	30

1/ .9 for Paddy
.1 for Wheat

Source: Food and Agriculture Marketing Services Department, Production Costs and Return (Kathmandu: Ministry of Food, Agriculture and Irrigation, 1978).

Asian Regional Team for Employment Promotion, The Challenge for Nepal (Bangkok: International Labour Organization, 1974), pages IV-5 and 9.

	Yield Rate of Paddy (Kilograms/ Hectare)	Index	Yield Rate of Maize (Kilograms/ Hectare)	Index	Yield Rate of Wheat (Kilograms/ Hectare)	Index	Yield Rate of Millet (Kilograms/ Hectare)	Index	Yield Rate of Barley (Kilograms/ Hectare)	Index	Yield Rate of Potatoes (Kilograms/ Hectare)	Index	Weighted Index of Yield Rates 1/
Eastern Hills and Mountains	2261	49	1829	93	954	1	1194	96	952	75	5142	8	53
Eastern Terai	1713	1	1253	35	1016	6	1007	51	771	25	6236	42	14
Eastern Development Region	1778	6	1756	86	1003	5	1165	89	952	75	5348	14	31
Central Hills and Mountains	2834	100	1050	15	1856	92	1101	73	927	68	6134	39	74
Central Terai	1923	19	1271	37	1285	34	934	33	698	5	6008	35	26
Central Development Region	2050	30	1153	25	1479	54	1042	59	755	21	6082	37	53
Western Hills and Mountains	2328	55	1898	100	1088	14	1211	100	977	82	4884	1	67
Western Terai	1854	13	1851	95	1199	25	796	1	809	36	8120	100	38
Western Development Region	1963	22	1889	99	1165	22	1185	94	923	67	5650	24	45
Far Western Hills and Mountains	2254	48	903	1	1931	100	1101	73	1043	100	4926	1	44
Far Western Terai	1913	18	1100	20	1609	67	888	22	678	1	6035	36	25
Far Western Development Region	1988	25	995	9	1832	88	1062	64	1030	96	5230	11	32
Hills and Mountains	2444	65	1463	56	1699	76	1165	89	1013	92	5291	13	64
Terai	1841	11	1287	39	1262	32	922	30	731	15	6351	45	22
Nepal	1935	20	1404	50	1430	49	1122	79	933	70	5589	22	35

1/ .33 for Paddy, .25 for Maize, .13 for Wheat, .03 for Millet, Barley and Potatoes.

Source: Department of Food and Agriculture Marketing Services, Statistical Information: Eastern, Central, Western and Far Western Development Regions (Kathmandu: Ministry of Food, Agriculture and Irrigation, 1976), pages 17, 18, 20 and 23.

Special Programming Mission to Nepal, Report to the International Fund for Agricultural Development (International Fund for Agriculture Development, 1979), page 196.

	Percentage of Cultivated Land that is Perenially Irrigated		Population Economically Active in Agriculture per Co-op Society		Cultivated Area per Junior Technical Assistant		Cultivated Area for Total Seed Distributed (Hectare/ Metric Ton)		Fertilizer Use (Kilogram/ Hectare)		Existing/Proposed Storage Capacity		Weighted Index for Inputs and Marketing
	(%)	Index	(1000)	Index	(Hectares)	Index		Index		Index	(%)	Index	
Eastern Hills and Mountains	.0	1	99	46	3098	38	4189	1	.72	1	151.72	41	21
Eastern Terai	3.8	100	14	1	4222	1	775	96	8.30	8	223.51	71	46
Eastern Development Region	2.5	66	28	8	3731	16	1074	87	5.71	5	212.94	66	41
Central Hills and Mountains	2.3	61	33	10	1227	100	1273	82	107.13	100	238.98	77	72
Central Terai	1.1	29	14	1	3162	35	918	92	15.51	14	56.33	1	29
Central Development Region	1.4	37	22	4	4252	66	989	90	38.96	36	104.80	21	42
Western Hills and Mountains	.5	13	68	29	1265	99	616	100	7.51	7	258.33	85	56
Western Terai	.7	18	18	2	3649	19	923	91	12.12	11	135.46	35	29
Western Development Region	.6	16	44	10	2009	74	760	96	10.12	9	173.33	50	44
Far Western Hills and Mountains	.2	5	200	100	1747	83	3412	22	.09	1	294.12	100	92
Far Western Terai	1.3	34	14	1	3561	22	1130	85	3.44	3	54.07	1	24
Far Western Development Region	.8	21	53	21	2482	58	1569	73	2.04	2	72.12	8	30
Hills and Mountains	.7	18	63	26	1657	86	1455	77	27.49	26	236.53	76	52
Terai	1.9	50	15	1	3584	21	896	92	10.69	10	94.16	17	32
Nepal	1.5	39	31	9	2558	56	1033	88	16.48	15	124.90	30	40

Source: Special Programming Mission to Nepal, Report to the International Fund for Agriculture Development (International Fund for Agriculture Development, 1979), pages 103-111.

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Appendix Seven

Mean, Standard Deviation and Confidence Interval

	Mean	Standard Deviation	68% Confidence Interval
Industry	39	36	3 to 75
Participation	45	34	11 to 79
Transportation	66	33	33 to 99
Employment	46	20	26 to 66
Migration	51	42	9 to 93
Income and Expenditure	48	29	19 to 77
Education	52	23	29 to 75
Health	76	27	49 to 103
Nutrition	44	29	15 to 73
Population	57	19	38 to 76
Status of Women	52	17	35 to 69
Agriculture	42	16	26 to 58
Nepal	48	13	35 to 61

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