

Numbers of Forest Dependent Poor People in Nepal

DfID
Forestry Research Programme

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1 - Introduction

1.1- Terms of Reference

The purpose of the engagement involved: The location and quantification of FRP categories of forest dependent poor in Nepal, and if time permits, India.

Following research into existing estimates of FDP, it has been found that research into the topic has been rare, and that available estimates specify neither the location of FDP within a specific country, nor under which FRP category of FDP they fall in.

“Remarkably, there are still almost no complete, accurate, and up-to-date country-specific demographic and related social science studies of rural people living in or directly dependent on forest, marine, and pastoral areas.” (Lynch 1992)

Hence, this research study has focused both on finding existing sources, as well as alternative sources from which more detailed, and therefore more useful, data can be extrapolated.

These alternative sources are based both on GIS data, and on data relating to Forest User Groups (FUGs)

Due to time constraints, estimates for India have been found relating to existing data only.

The time allocated to this research was 4 weeks, which coincided with the political turmoil in Nepal following the shooting of the King and other members of the Royal family in June 2001. The reduced activity in the ministries in Nepal has therefore meant that contact with Nepali sources was not possible. This has been a setback in the range of sources available.

Contact with some key people (see section 3.3) has also failed given the short time span of the project and it coinciding with the summer holiday period. It has also been difficult to get hold of ODI's Nepal material due to their temporary inaccessibility.

1.2- Objectives and Aims

Reliable estimates of FDP are important for “those involved in community forestry, and projects-orientated NGOs and those who have adopted DFID's emphasis on Sustainable Livelihoods and poverty alleviation. For these groups, the people-forest relationship is key and establishing the numbers involved is seen as a useful tool for understanding groups of potential beneficiaries and setting priorities.” (FRP feasibility study)

FRP projects work with four categories of forest dependent poor people:

- Small-scale poor farmers
- Landless rural families
- Artisans and traders in forest products

· Urban and peri-urban poor

FRP defines "forest dependence" as being dependent on forest or tree resources for a significant part of livelihood, which cannot easily be substituted by other resources.

2 - Background to Nepal

2.1- Geography

The Kingdom of Nepal is located in Southeast Asia, bordering India to the South, East and West, and China to the North. Its geographic co-ordinates are 28 00 N, 84 00 E. There are five distinct geographical regions in Nepal which run from North to South. These are the High Himalayas, the High Mountains, the Middle Mountains, the Siwaliks and the Terai. These regions decrease in altitude from the North to the South of the country, the highest point being at an altitude of 8850m, and the lowest, 70m above sea level. Given this geographic range, climate and vegetation cover also differ widely between regions.

Table 1 - Forest cover per region

Region	Forest cover (million hectares)	Percent of total
High Himalayas	3.3	22.4%
High Mountains	3.0	20.5%
Middle Mountains	4.4	29.8%
Siwaliks	1.8	12.8%
Terai	2.1	14.3%
Total	14.7	100%

Source: MPFS 1989

As can be seen from the table, the Middle Mountains region is the most forested. The Terai is less forested due to rapid migration from the hills to the plains following the eradication of malaria in the region in the 1950's and consequent deforestation for agricultural and settlement purposes.

There are 75 districts in Nepal, of which Kathmandu, the capital, is one. As well as geographic regions, Nepal is split into five development regions, which are both cultural and administrative entities. These run from East to West and are the Eastern, Central, Western, Mid-Western, and Far-Western development regions. The Eastern and Central development regions are more developed, while the Western regions, which are more rugged, are less developed and more poorly supplied with services and infrastructure. This trend is illustrated on map 3, which shows the HDI for each district.

Nepal's population during the 1991 census was 18.5 million, and the 2000 estimate is 24 million. Its population growth is estimated at 2.34% per annum. The rapid population growth alone makes estimating FDP numbers more difficult. This is due to less reliable population estimates in between the ten-year censuses, and population pressures resulting in processes such as urbanisation taking pace at high rates.

The employment breakdown for Nepal is as follows:

Agriculture forestry and fishing: 81%
Services : 16%

Industry.....: 3%

Source: The World Factbook 2000

2.2- Brief Forestry History

Prior to 1976, Nepal's forests were under state control. The 1976 National Forestry Plan transferred control over the common lands from the state to the village communities.

The Plan provided a policy base for initiating forestry development in Nepal, especially the Middle Hills. This legislation and the rules and regulations which have followed reinforce the rights of local users. These local users are now called FUGs. They are groups of people residing around forest vicinities, who manage, conserve, develop and use the forest resources. Income generated from the sale of forest products is used to build village facilities and improve quality of life.

By 1998, there were 6,020 FUGs, and 403,688 hectares of forests were handed over from HMGN to rural people. There are thousands of User Groups awaiting official registration, and the number could be as high as 40,000 FUGs, involving millions of forest dependent people. The potential area for community forestry in Nepal is as large as 3.5 million hectares. (Tamrakar and Nelson)

3 - Sources for estimates of FDP

3.1 - Lynch and Talbot

One of the most often quoted estimates was obtained from the following two reports:

Lynch O.J. 1992

Securing Community-based tenurial rights in the tropical forests of Asia: an overview of current and prospective strategies.

WRI, Washington D.C.

And,

Lynch, Owen J; Kirk Talbot 1995

Balancing acts: Community-based forest management and National Law in Asia and the Pacific.

WRI, Washington D.C.

The estimates are as follows:

	Number of People directly dependent on tropical forests (million)	Number of people living on land classified as “public” forests (million)
Nepal	18	8.5
India	275	100

Based on Lynch and Talbot, 1995, World Resources Institute, Washington D.C

These estimates were made by non-governmental organisations and individuals.

In terms of which category of FDP these numbers fit into, the only reference made in the report is the following: “The estimates include a dwindling number of hunter-gatherers and pastoralists. The hunter gatherer population probably ranges in the hundreds of thousands. The largest number of pastoralists is in India, where they make up 6 percent of the national population, or approximately 45 to 50 million people”(Lynch, 1992). The section about numbers of hunter-gatherers refers to 7 Southeast Asia countries, including India, Indonesia, Philippines, Thailand, Myanmar (Burma), Papua New Guinea, Bangladesh, and Nepal.

It should be noted however, that Lynch’s quote regarding the numbers of pastoralists and hunter-gatherers was adapted from Anil Agarwal, Human-Nature Interactions in a Third World Country, London, Fifth World Conservation Lecture, WWF-UK, 1985. These figures are therefore dated and would not still hold today.

“The definition of “dependent” used in this paper (Lynch, 1992) is limited to mean people extracting timber or other forest products for personal consumption or for direct sale. It excludes people who purchase forest products extracted by others. It also

excludes people employed by timber companies or wood processing industries and who do not directly extract forest resources for consumption or sale. Degrees of dependence obviously vary a great deal and in many instances increase or decrease on a seasonal basis.”

Apart from the above definition implying a degree of self-sustainability, the estimate does not specify the level of poverty of FDP.

3.2 - Banerjee, Ajit Kumar

The following is a different source also providing an estimate of FDP for Nepal and India. The estimate, though having a more recent date, is the same as that provided by Lynch, and Lynch and Talbot. This suggests that either there has been little change in the number of FDP, or that further research has not taken place.

Banerjee, Ajit Kumar (1997): Decentralization and Devolution of Forest Management in Asia and the Pacific, in: Asia -Pacific Forestry Sector Outlook Study, Working Paper APFSOS/WP/21, FAO, Rome and Bangkok. (IRE-File)

3.3 - Fisher. R.J., Srimongkontip. S., Veer. C.

The following source provides a guesstimate of FDP numbers:

Fisher.R.J., Srimongkontip.S., Veer. C. (1997), People and Forests in Asia and the Pacific: Situation and Prospect. FAO Working Paper no. APFSOS/WP/27, Rome

The guesstimate is as follows:

	People directly dependent on forests (millions)	People living in forests classified as public including national parks and protected areas (millions)
Nepal	15	2
India	250-300	100

India: The Guesstimate for the number of people directly dependent on forest is within the same range as Lynch’s estimate, and the guesstimate for those living in forests is exactly the same as that proposed by Lynch.

Nepal: The guesstimate for the number of people directly dependent on forests is 20% lower than that provided by Lynch. However the guesstimate for those living in forests is more significantly lower, having dropped by 76%.

Unfortunately, it has not been possible to make contact with the authors of the report, and therefore it is not known how the numbers were obtained, and what guidelines were used in obtaining them.

The definition of "People directly dependent on forest resources for livelihood" used in the report is as follows: "people partially or wholly dependent on forests for subsistence or cash income. It does not include people who simply use purchased forest products (more or less the rest of the regional population). It does not include people dependent on tree products from small private or village plots. The phrase partial dependency is used here to refer to dependency greater than a national twenty per cent. But this is, itself, difficult to define and measure."

4 - Alternative Sources

4.1 - Using FUG figures

As mentioned in Section 2.2, by 1998, there were 6,020 FUGs, and 403,688 hectares of forests were handed over from HMGN to rural people. Given that members of FUGs are forest dependent people, it should be possible to estimate the number of FDPs using the number of FUGs, and their average membership number.

However there are several problems with this method:

- Only a fraction of potential FUGs have been formed. Those formed would have to act as a sample from which the total number is estimated.
- FUG membership varies greatly, with numbers ranging from about one hundred to thousands.
- A single family can be a member of more than one FUG.

Due to these points, an estimate in the scope of this report would be inaccurate.

However, many donor agencies within Nepal are carrying out their own research based in the districts they work in. The Livelihoods and Forestry Programme (LFP) is producing a project working document on the topic of the numbers of FDPs (based on FUGs), and their locations within seven districts in Nepal. It will be published in August 2001. The document is based on a survey of the seven districts; four districts of the Koshi Hills: Dhankuta, Bhojpur, Sankhuwa-Sabha and Terhthum; and three of the Dhaulagiri Hills: Parbat, Baglung and Myagdi.

The Nepal Swiss Community Forestry Project is also researching the location and number of forest dependent poor people with whom they work in their project areas: Dolakha, Ramechhap, Okhaldunga.

4.2 - GIS Estimates

The use of GIS in producing estimates of numbers of FDP is based on the ability to overlay a range of maps for a variety of indicators. These maps would include forest cover, and population distribution, as well as any of a number of social indicators. An estimate of the numbers of FDP could then be made by finding the population which falls under all the required categories.

The use of GIS for this purpose has been made to a certain extent by WCMC. They have produced maps for five Southeast Asia countries including Nepal, indicating forest cover and a range of social indicators. The maps are intended to help identify, for example, potential project areas, or threats to forests, and are going to be made available on the Internet. However, the site does not have the facilities to estimate the numbers of FDP. The maps are expected to be accessible on an IMS. The web-site is currently under development and will be accessible through the WCMC-UNEP website shortly:
<http://www.unep-wcmc.org/>

WCMC's GIS data for Nepal is available for the 75 districts. By using available figures, and calculating more workable figures, it has been possible to come up with an estimate of FDP and an indication of their poverty and level of dependence of the forests using HDI and Forest area per Person.

Table 1 below shows WCMC data for Nepal, which was used to produce their GIS maps. The last three columns (% Forested, Forest Population and Forest per Person in KM²) were not provided by WCMC, but extrapolated using available figures.

% Forested: This column was created by dividing the forest area by the total area for each district.

Forest Population: This column was created by multiplying the % forested by the total population of each district. The total for this column is the estimate for the number of FDP in Nepal. This calculation is based on a number of assumptions:

- 1- That population distribution is evenly spread. This will not be the case for all districts given the mountainous nature of the terrain and varying geography, such as urban centres and the availability of resources.
- 2- That FDP all reside within forests. This will exclude urban and peri-urban forest users. It may also exclude those who migrate to forests for part of the year, and farmers who use forest goods but do not live within forest areas.
- 3- That forest area and population are stable. This is not the case due to deforestation and plantations affecting the forest area, and rapid population growth, urbanisation and migration affecting rural populations.
- 4- That everyone living in forests is dependent on them.

Forest per person in KM²: This column was created by dividing the forest area for each district by that district's population.

Table 1

ADM NAME	POP_1998	Population density	HDI	AREA_KM ²	Forest Area_km ²	% Forested	Forest population	Forest per person in Km ²
Palpa	252936.817	184.222	0.337	1440.2406	1418.56903	98.495279	24913082.24	0.00560839
Arghakh-Anchi	199463.036	167.194	0.331	1105.4453	1067.49515	96.566985	19261544.03	0.00535184
Salyan	205983.384	140.892	0.250	1899.9202	1816.62873	95.616051	19695317.81	0.00881930
Baitadi	217350.868	143.088	0.256	1483.0662	1384.20348	93.333895	20286202.99	0.00636852
Syangja	309660.565	266.031	0.378	1171.9049	1091.51816	93.140507	28841941.88	0.00352489
Pyuthan	189111.641	144.470	0.323	1311.9216	1205.13478	91.860279	17371848	0.0063726
Dadeldhura	119230.167	77.523	0.265	1470.2480	1346.30656	91.570028	10917909.73	0.0112917
Dailekh	203549.030	135.519	0.246	1454.9167	1325.08735	91.076515	18538536.36	0.00650992
Lalitpur	324487.498	842.825	0.523	346.2264	314.91806	90.957256	29514492.4	0.00097051
Gulmi	288050.577	250.697	0.326	1215.5199	1102.31255	90.686510	26122301.57	0.00382680

Surkhet	279763.891	114.143	0.357	2541.7408	2294.03314	90.25441	25249924.67	0.00819989
Achham	207808.410	123.695	0.235	1753.3922	1582.28295	90.241242	18752888.99	0.00761414
Ilam	273217.512	160.433	0.380	1699.6397	1501.92461	88.367236	24143476.41	0.00549718
Tanahu	304523.142	196.975	0.384	1510.9850	1322.14714	87.502277	26646468.37	0.00434170
Parbat	155200.990	314.172	0.357	519.1341	442.67669	85.272114	13234316.52	0.00285228
Doti	177749.433	87.777	0.249	2056.0531	1751.07812	85.166969	15138380.42	0.00985139
Jajarkot	125477.247	56.268	0.210	2233.6642	1888.66659	84.554632	10609682.42	0.01505187
Sindhuli	257162.285	103.237	0.295	2548.3986	2096.50841	82.26768	21156144.7	0.00815247
Udayapur	277848.683	134.682	0.355	2039.8713	1672.80481	82.005407	22785094.32	0.00602056
Rolpa	188139.833	100.128	0.264	1919.5587	1573.81258	81.988251	15425255.93	0.00836512
Makwanpur	376486.436	155.188	0.309	2505.5576	1976.4129	78.881163	29697687.99	0.00524963
Dhading	305232.709	158.480	0.258	1889.9778	1455.45818	77.009277	23505750.15	0.00476836
Khotang	218372.992	137.255	0.318	1638.9253	1227.94556	74.923827	16361340.22	0.00562316
Nuwakot	279997.496	249.775	0.312	1148.5772	797.46238	69.430458	19440354.49	0.00284811
Chitwan	440903.246	198.784	0.370	2178.1271	1489.76838	68.396761	30156353.8	0.00337890
Baglung	245383.541	137.547	0.337	1813.9763	1206.95923	66.536659	16327000.88	0.00491866
Lamjung	154384.616	91.244	0.375	1678.8026	1065.45776	63.465340	9798072.213	0.00690132
Bajura	106513.034	48.681	0.173	2327.0530	1461.60546	62.809288	6690007.836	0.01372232
Bhojpur	203164.852	134.814	0.351	1555.9182	963.95354	61.953998	12586874.88	0.00474469
Sindhupal - Chok	283198.603	111.408	0.277	2539.8539	1564.73435	61.607260	17447090.01	0.00552522
Kanch- Anpur	346749.574	215.372	0.332	1653.6282	1006.435	60.862227	21103951.21	0.00290248
Bardiya	378101.725	186.717	0.304	1972.5910	1192.73638	60.465469	22862097.99	0.00315454
Kailali	585848.466	181.097	0.299	3261.2677	1945.01283	59.639778	34939872.59	0.00331100
Kavrepal- Anchok	336922.851	241.349	0.380	1413.0839	836.64534	59.207054	19948209.25	0.00248320
Parsa	450067.657	332.644	0.355	1378.9233	815.48187	59.139027	26616563.13	0.00181191
Rukum	174101.677	60.515	0.270	2928.7158	1728.40682	59.015861	10274760.29	0.00992757
Dang	432813.131	146.468	0.299	2911.5679	1665.28076	57.195327	24754888.5	0.00384757
Myagdi	103187.008	44.923	0.309	2310.1269	1209.48257	52.3556778	5402425.742	0.01172127
Kalikot	89631.134	51.483	0.177	1679.7386	865.64093	51.5342637	4619074.496	0.00965782
Nawal- Parasi	555511.084	256.943	0.300	2113.1917	1081.63147	51.1847307	28433685.22	0.00194709
Taplejung	119546.705	32.788	0.363	3486.9525	1721.5573	49.3714017	5902188.39	0.01440071
Gorkha	268534.114	74.386	0.308	3678.4428	1804.27479	49.0499625	13171588.23	0.00671898
Kaski	356523.228	176.759	0.450	2045.2737	950.73086	46.4842845	16572727.17	0.00266667
Bajhang	150728.009	44.047	0.201	3597.0243	1661.63377	46.1946779	6962831.823	0.01102405
Darchula	110564.819	47.616	0.286	2283.8615	1049.60554	45.9574952	5081282.142	0.00949312
Kapilvastu	465025.715	267.564	0.286	1667.8982	759.85034	45.5573561	21185342.08	0.00163400
Bhaktapur	182823.721	1536.33	0.393	106.1893	47.78103	44.9960745	8226349.764	0.00026135
Sankhu- Wasabha	151355.706	43.493	0.365	3589.6456	1601.56635	44.6162809	6752928.691	0.01058147
Rasuwa	42111.395	27.274	0.246	1447.1643	591.02974	40.8405420	1719852.197	0.01403491
Banke	359826.351	153.969	0.309	1943.5701	753.97668	38.7933885	13958883.42	0.00209539

Solukh-Umbu	104003.888	31.402	0.354	3463.6690	1337.54756	38.6164949	4016265.614	0.01286055
Panchthar	191986.450	154.703	0.328	1153.0921	429.15085	37.2173957	7145235.685	0.00223532
Bara	500432.508	420.532	0.309	1165.7930	419.15531	35.9545222	17992811.71	0.00083759
Dolakha	191097.859	87.219	0.340	2275.6838	800.21349	35.1636495	6719698.141	0.00418745
Ramech-Hap	209267.804	135.361	0.315	1509.8019	507.58989	33.6196360	7035507.402	0.00242555
Jumla	81420.666	32.169	0.218	2514.8088	819.9954	32.6066694	2654856.735	0.01007110
Mugu	31972.016	9.044	0.147	3382.4742	1049.74442	31.03481	992245.41	0.03283323
Okhal-Dhunga	140743.153	131.046	0.340	1072.7211	318.21474	29.664257	4175041.048	0.00226096
Rupandehi	653322.385	480.384	0.361	1287.8968	357.45352	27.7548257	18132848.9	0.00054713
Sarlahi	571524.045	453.951	0.327	1170.6122	322.46391	27.5466038	15743546.42	0.00056422
Terhathum	110851.829	163.257	0.393	683.6841	181.44814	26.5397630	2941981.273	0.00163686
Rautahat	482649.178	428.640	0.308	1107.3907	283.62612	25.6121092	12361663.43	0.00058764
Dhanusha	638019.671	540.695	0.329	1106.4209	279.77694	25.2866653	16133389.89	0.00043851
Morang	794237.172	428.160	0.421	1725.7133	393.24186	22.7872072	18098446.97	0.00049512
Kathmandu	938209.653	2375.21	0.603	452.9160	94.45616	20.855118	19566473.03	0.00010068
Mahottari	505608.048	504.599	0.322	988.9475	202.51315	20.4776438	10353661.48	0.00040053
Saptari	537821.687	394.587	0.374	1242.5199	148.81405	11.9767937	6441379.397	0.00027670
Dhankuta	159258.068	178.741	0.401	879.2491	104.41988	11.8760294	1891353.49	0.00065567
Manang	4441.340	1.977	0.306	2348.1874	257.99767	10.9870989	48797.44166	0.05809005
Humla	49715.551	8.791	0.244	6108.6991	633.20711	10.3656621	515334.6015	0.0127366
Sunsari	570346.646	453.736	0.382	1216.6877	120.33955	9.89075061	5641156.434	0.00021099
Siraha	531829.840	447.668	0.350	1150.7323	105.74085	9.18900520	4886987.167	0.00019883
Jhapa	689293.115	429.199	0.421	1436.8529	118.64187	8.25706468	5691537.834	0.00017212
Dolpa	27327.024	3.464	0.218	7978.1253	629.23849	7.88704696	215529.5217	0.02302624
Mustang	15329.894	4.290	0.316	3371.5896	13.61525	0.40382287	6190.561788	0.00088815
Total	21561036.0			147261.74	74625.2331		1078506784	

Source for first 6 columns: WCMC

Using this method, it is estimated that there are about 10.8 million forest dependent people in Nepal. This figure includes those living in urban centres, therefore, considering that about 10% of Nepal is urban, then the figure excluding urban dwellers is about 9.7 million.

But three more questions still need to be answered: Where are the FDP? How forest dependent are they? And how poor are they?

Maps 1-4 show the 75 five districts of Nepal and four indicators which, seen together and compared, can give an idea of forest dependency and poverty. The number of FDP in each district can then be looked up in the table above.

The first map shows Forest Cover as a % of the Total forest area. This shows a central band, the Middle Mountains to have the most forest cover. The second map indicates the

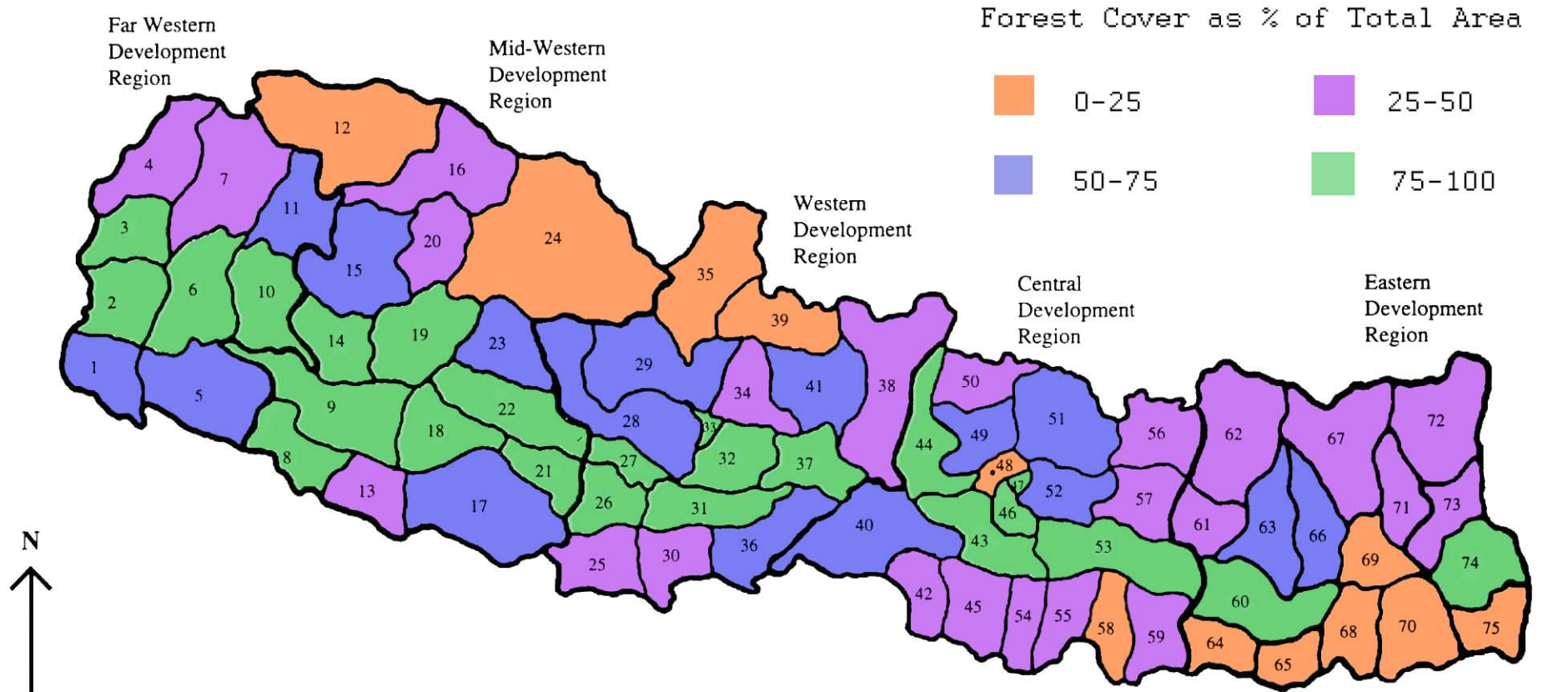
Forest Area per person in KM². This, on the other hand, shows that the Northern districts, and especially the ones in the North East, in the High Himalayas, have the largest Forest Area per Person, even though the forest cover is the least in Nepal. When compared to Map 4, showing population density, it can be seen that the low population density in these districts would account for the high forest area per person, and therefore that although forest cover is low, people may still be highly forest dependent.

The third map shows HDI. This indicator was chosen to represent poverty, as it takes into account life expectancy, adult literacy and Gross National Product per capita. As can be seen from the map, there is a marked shift in development, with the Western districts having the lowest HDI, and the Eastern districts the highest. The most developed region is within the Kathmandu valley.

By looking at each region or district separately, comparing the variables, and perhaps considering lifestyle and employment breakdown, one can come to conclusions as to which districts have the poorest, most forest dependent populations. This cannot be accomplished within this assignment due to differing priorities, needs and interests of relevant organisations.

Map 1

DISTRICT MAP OF NEPAL

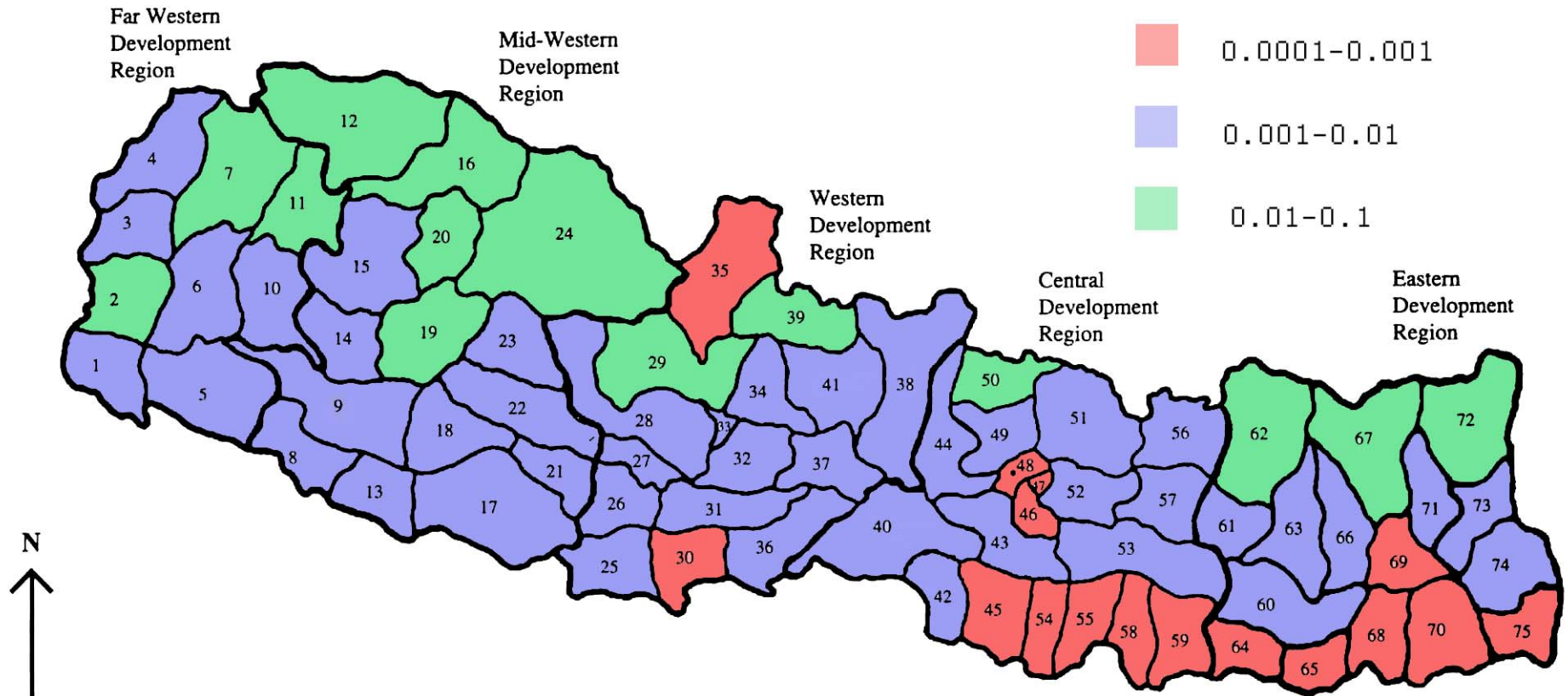
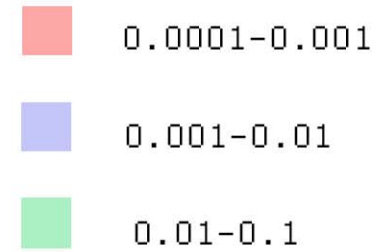


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|--------------|------------|-----------------|----------------|---------------|------------------|----------------|------------------|--------------|
| 1 Kanchanpur | 10 Achham | 19 Jajarkot | 28 Baglung | 37 Tanahu | 46 Lalitpur | 55 Sarlahi | 64 Siraha | 73 Panchthar |
| 2 Dadeldhura | 11 Bajura | 20 Jumla | 29 Myagdi | 38 Gorkha | 47 Bhaktapur | 56 Dolakha | 65 Saptari | 74 Ilam |
| 3 Baitadi | 12 Humla | 21 Pyuthan | 30 Rupandehi | 39 Manang | 48 Kathmandu | 57 Ramechhap | 66 Bhojpur | 75 Jhapa |
| 4 Darchula | 13 Banke | 22 Rolpa | 31 Palpa | 40 Chitwan | 49 Nuwakot | 58 Mahottari | 67 Sankhuwasabha | |
| 5 Kailali | 14 Dailekh | 23 Rukum | 32 Syangja | 41 Lamjung | 50 Rasuwa | 59 Dhanusha | 68 Sunsari | |
| 6 Doti | 15 Kalikot | 24 Dolpa | 33 Parbat | 42 Parsa | 51 Sindhupalchok | 60 Udayapur | 69 Dhankuta | |
| 7 Bajhang | 16 Mugu | 25 Kapilbastu | 34 Kaski | 43 Makawanpur | 52 Kabhre | 61 Okhaldhunga | 70 Morang | |
| 8 Bardiya | 17 Dang | 26 Arghakhanchi | 35 Mustang | 44 Dhading | 53 Sindhuli | 62 Solukhumbu | 71 Terhathum | |
| 9 Surkhet | 18 Salyan | 27 Gulmi | 36 Nawalparasi | 45 Bara | 54 Rautahat | 63 Khotang | 72 Taplejung | |

Map 2

DISTRICT MAP OF NEPAL

Forest area per person (KM²)

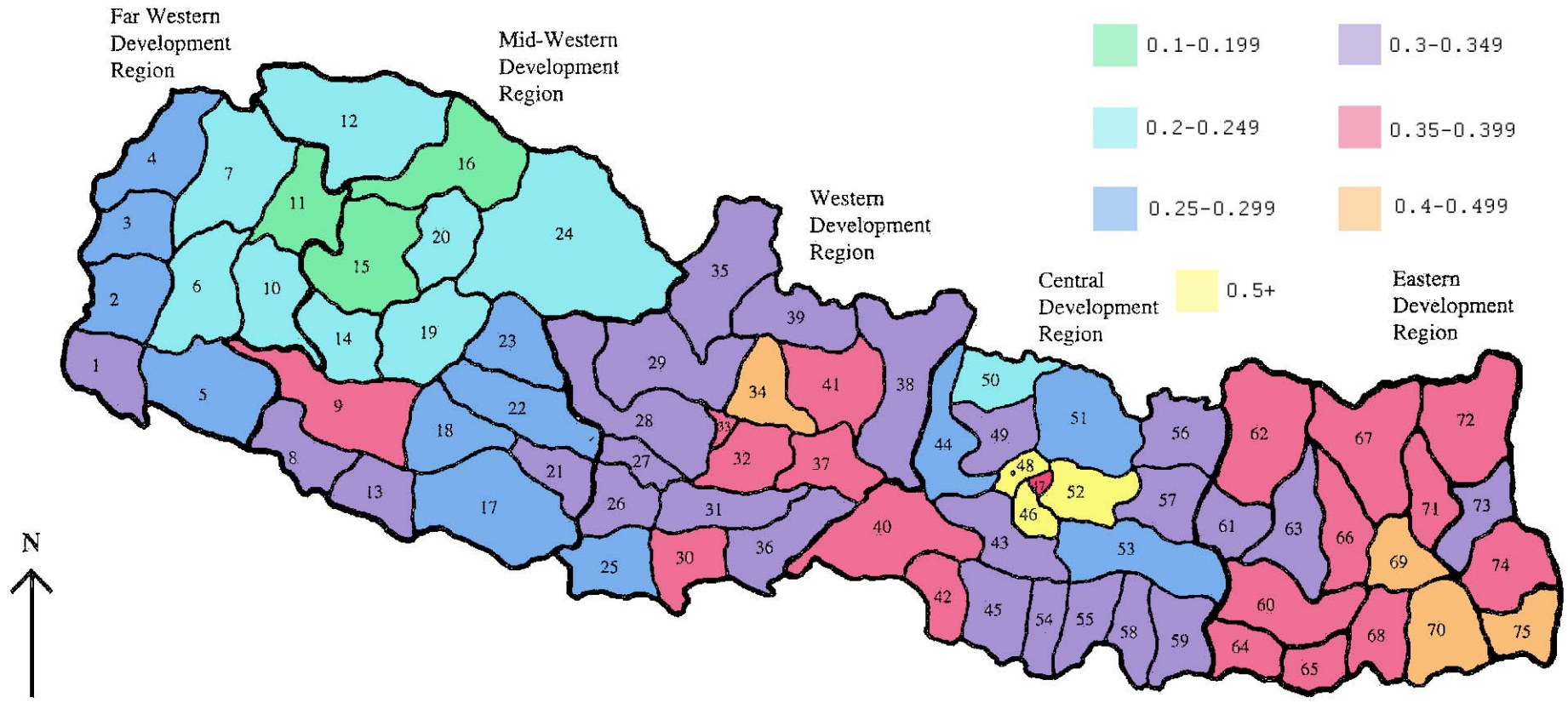


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|--------------|------------|-----------------|----------------|---------------|------------------|----------------|------------------|--------------|
| 1 Kanchanpur | 10 Achham | 19 Jajarkot | 28 Baglung | 37 Tanahu | 46 Lalitpur | 55 Sarlahi | 64 Siraha | 73 Panchthar |
| 2 Dadeldhura | 11 Bajura | 20 Jumla | 29 Myagdi | 38 Gorkha | 47 Bhaktapur | 56 Dolakha | 65 Saptari | 74 Ilam |
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| 6 Doti | 15 Kalikot | 24 Dolpa | 33 Parbat | 42 Parsa | 51 Sindhupalchok | 60 Udayapur | 69 Dhankuta | |
| 7 Bajhang | 16 Mugu | 25 Kapilbastu | 34 Kaski | 43 Makawanpur | 52 Kabhre | 61 Okhaldhunga | 70 Morang | |
| 8 Bardiya | 17 Dang | 26 Arghakhanchi | 35 Mustang | 44 Dhading | 53 Sindhuli | 62 Solukhumbu | 71 Terhathum | |
| 9 Surkhet | 18 Salyan | 27 Gulmi | 36 Nawalparasi | 45 Bara | 54 Rautahat | 63 Khotang | 72 Taplejung | |

Map 3

DISTRICT MAP OF NEPAL

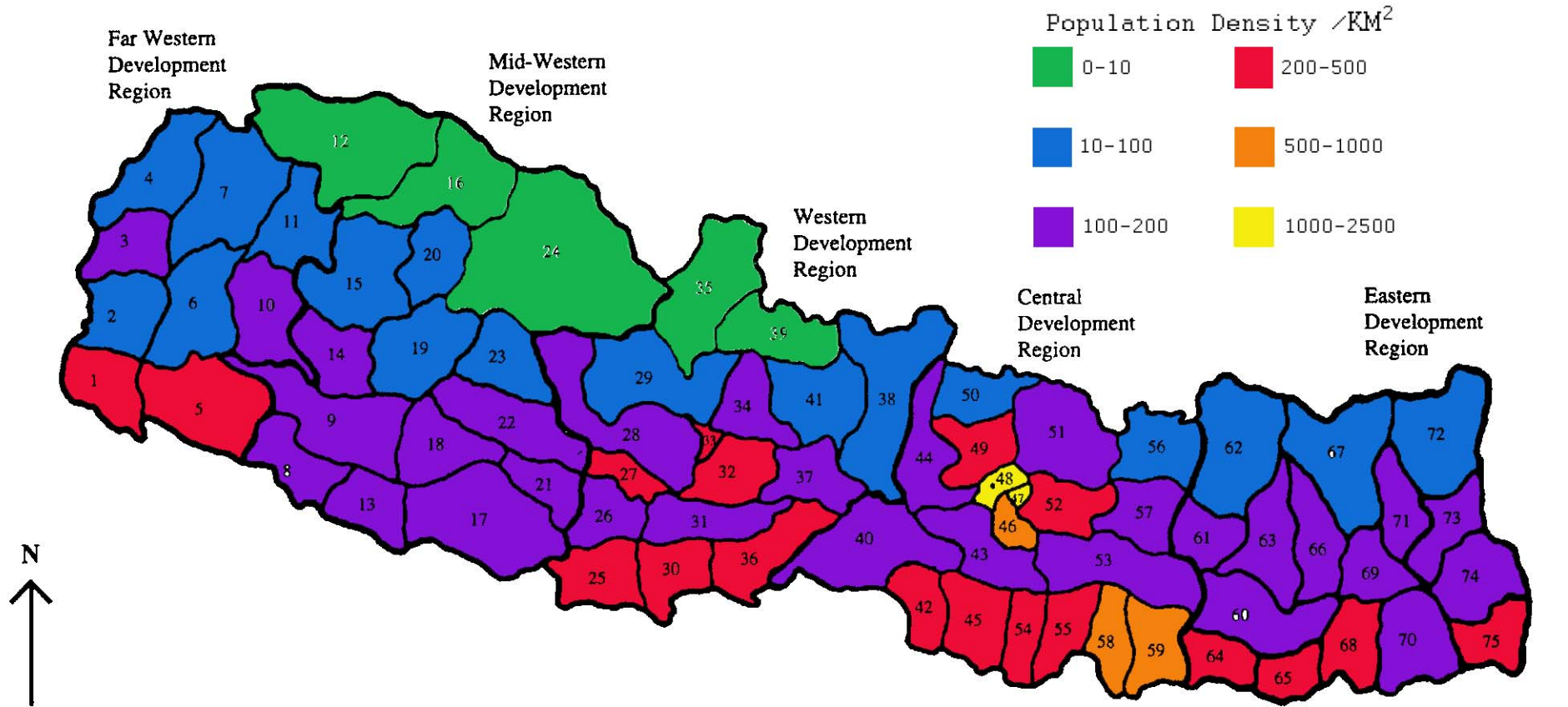
Nepal Districts HDI



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|--------------|------------|-----------------|----------------|---------------|------------------|----------------|------------------|--------------|
| 1 Kanchanpur | 10 Achham | 19 Jajarkot | 28 Baglung | 37 Tanahu | 46 Lalitpur | 55 Sarlahi | 64 Siraha | 73 Panchthar |
| 2 Dadeldhura | 11 Bajura | 20 Jumla | 29 Myagdi | 38 Gorkha | 47 Bhaktapur | 56 Doiakha | 65 Saptari | 74 Ilam |
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| 6 Doti | 15 Kalikot | 24 Dolpa | 33 Parbat | 42 Parsa | 51 Sindhupalchok | 60 Udayapur | 69 Dhankuta | |
| 7 Bajhang | 16 Mugu | 25 Kapilbastu | 34 Kaski | 43 Makawanpur | 52 Kabhre | 61 Okhaldhunga | 70 Morang | |
| 8 Bardiya | 17 Dang | 26 Arghakhanchi | 35 Mustang | 44 Dhading | 53 Sindhuli | 62 Solukhumbu | 71 Terhathum | |
| 9 Surkhet | 18 Salyan | 27 Gulmi | 36 Nawalparasi | 45 Bara | 54 Rautahat | 63 Khotang | 72 Taplejung | |

Map 4

DISTRICT MAP OF NEPAL



Population Density /KM²



Far Western
Development
Region

Mid-Western
Development
Region

Western
Development
Region

Central
Development
Region

Eastern
Development
Region



- | | | | | | | | | |
|--------------|------------|-----------------|----------------|---------------|------------------|----------------|------------------|--------------|
| 1 Kanchanpur | 10 Achham | 19 Jajarkot | 28 Baglung | 37 Tanahu | 46 Lalitpur | 55 Sarlahi | 64 Siraha | 73 Panchthar |
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| 4 Darchula | 13 Banke | 22 Rolpa | 31 Palpa | 40 Chitwan | 49 Nuwakot | 58 Mahottari | 67 Sankhuwasabha | |
| 5 Kailali | 14 Dailekh | 23 Rukum | 32 Syangja | 41 Lamjung | 50 Rasuwa | 59 Dhanusha | 68 Sunsari | |
| 6 Doti | 15 Kalikot | 24 Dolpa | 33 Parbat | 42 Parsa | 51 Sindhupalchok | 60 Udayapur | 69 Dhankuta | |
| 7 Bajhang | 16 Mugu | 25 Kapilbastu | 34 Kaski | 43 Makawanpur | 52 Kabhre | 61 Okhaldhunga | 70 Morang | |
| 8 Bardiya | 17 Dang | 26 Arghakhanchi | 35 Mustang | 44 Dhading | 53 Sindhuli | 62 Solukhumbu | 71 Terhathum | |
| 9 Surkhet | 18 Salyan | 27 Gulmi | 36 Nawalparasi | 45 Bara | 54 Rautahat | 63 Khotang | 72 Taplejung | |

5 - Conclusions

- 1- Available sources of estimates of FDP are few, however the need for reliable estimates is needed.
- 2- Available estimates and guesstimates vary considerably.
- 3- Most estimates appear to have been reached through a range of secondary sources. This reduces their accuracy.
- 4- There is scope for further research into the topic, particularly involving Nepali sources, which were not available during the timing of this project.
- 5- The geography of Nepal, both human and physical, makes obtaining estimates more difficult. Field research may be a more suitable option in this case.
- 6- Organisations working with FUGs will have a keen interest in finding numbers of FDP. Many, like LFP, will be doing their own local research, which combined, may give a useful estimate. Organisations such as FECOFUN, which is the Federation of Community Forestry Users, Nepal, should also be contacted. Again this has not been done due to the timing of this project, and the difficulty in making contact with Nepal due to the political situation.
- 7- GIS can be used to come up with estimates. The one included in this project is rough; however, with suitable technology and some investment, the job can be done more accurately, taking into account more variables, such as urban populations, wilderness and access.
- 8- A range of variables need to be considered when investigating the location, forest dependency, and poverty of FDP.
- 9- There is no data regarding FDP in Nepal which specifies FRP's categories of FDP.

6 – References and General Reading

Acharya.D.P. et. al. (1998): Community Forestry for Everybody Forever Proceedings of the Third National Community Forestry Workshop 27-29 Oct, 1998, Kathmandu: HMG/MOFSC Department of Forests

Anon. N.D.: The Federation of Community Forestry Users, Nepal (FECOFUN), POB No: 8219 Kathmandu: FECOFUN.

Anil.A., Human-Nature Interactions in a Third World Country. Fifth World Conservation Lecture, London WWF - UK 1985

Arnold .J.E.M. , Bird .P., Forests and the Poverty Nexus, Prepared for the UNDP/EC Expert Workshop on Poverty and the Environment, Brussels, Belgium, January 20-21 1999

Bal .K.K.C., Parthibeswor .P.T., Rudra.P.G., Keshab.P.A, Emploment Situation In Nepal, Paper Presented at the National Seminar on the Dissemination of Findings of Employment Situation in Nepal Prepared for MOPE and UNFPA, Central Department of Population Studies (CDPS), Tribhuvan University, Kathmandu, Nepal, 1998

Bal.K.K.C, Bhim.P.S, Yogendra.B.G, Miraion Pattern in Nepal, Streams, Characteristics and Reaons, Paper Presented at the National Seminar on the Dissemination of Findings of Migration Situation in Nepal Prepared for MOPE and UNFPA, Central Department of Population Studies (CDPS) Tribhuvan University, Kathmandu Nepal, July, 1998

Banko Janakari Journal, Volumes 1-5

Banerjee, Ajit Kumar, Decentralisation and Devolution of Forest Management in Asia and the Pacific. Asia-Pacific Forestry Sector Outlook Study. 1997 FAO Working Paper No. APFSOS/WP/21, Rome and Bangkok

Baral.J.C., Subedi.B.R, Some community forestry issues in the Terai, Nepal: Where do we go from here?. Forests, Trees and People, Newsletter No.42

Bluffstone.R.A., The Effect of Labour Market Performance on Deforestation in Developing Countries Under Open Access. An Example from Rural Nepal. Journal of Environmental Economics and Management. 29 (1)

Bowen.R.M., Fairclough.A.C., Prajapati.K.P., Forestry Research in Nepal A Directory. FRSC Occasional Paper No. 3/93. Forest Research and Survey Centre, Ministry of Forests and Soil Conservation, 1993

- Brown.D., Richards.M., Schreckenber.K., Shepherd.G., The EU Tropical Forestry Sourcebook, ODI and European Commission, Brussels. 1998
- Chand.S., Karki.S., Rana.S., A Baseline Social Survey of Forest User Groups Involved in A Community Sawmill at Chaubas. Nepal Australia Community Forestry Project, Sanepa, 1997
- Fisher.R.J., Srimongkontip.S., Veer.C., People and Forests in Asia and the Pacific: Situation and Prospect. 1997, FAO Working Paper No. APSOS/WP/27. Rome
- Giri.C.P. Ofren.R.S. Pradhan.D. Kratzschmar.E., Shresthar.S, Land Use/Land Cover Change in Southeast Asia. Environmental Information and Assessment Technical Report 1998, UNEP-WCMC
- Loughran.D., Pritchette.L., Environmental Scarcity, Resource Collection and the Demand for Children in Nepal, World Bank, 1997
- Lynch.O.J. Securing Community-Based Tenurial Rights in The Tropical Forests of Asia: An Overview of Current and Prospective Strategies. 1992, WRI. Washington DC
- Lynch.O.J., Talbot.K., Balancing Acts: Community-Based forest management and the National Law in Asia and the Pacific. 1995, WRI. Washington DC
- Master Plan for the Forestry Sector Project of HMGN/ADB/FINNIDA, with Jaako Poyry Oy/Madecor Consultancy, Master Plan for the Forestry Sector, Nepal, Summary of Programmes, HMGN, Ministry of Forests and Soil Conservation, Kathmandu, Nepal, 1988
- Neil.P.E., Research trends and the Forestry Research Database for Nepal, FRIC Occasional Paper No. 1/90, 1990
- Nepal Living Standards Survey, 1996
- Number of Forest Dependent People, A feasibility study For DFID's Forestry Research Programme; by Calibre Consultants and the Statistical Services Centre, University of Reading, May 2000
- Roche.N. Environment and Agriculture, Community Forestry and Its Place in Agriculture and the Environment of Nepal, Livelihoods and Forestry Programme, 99-B/63
- Shrestha.N.K, Ghanendrs.K., Britt.C., Community Forest User Group Networking and the Emergence of Community Forestry Users in Nepal. Forests, Trees and People, Newsletter No.32/33
- Shrestha.N.K, Community Forestry in Nepal in Danger, Forests, Trees and People, Newsletter No.38

Springate-Baginski.O., Soussan.J., Dev.O.P., Yadav.N.P., Kiff.E. COMMUNITY FORESTRY IN NEPAL: Progress and Potentials; Final report of the Leeds University / NUKCFP / NRI Collaborative Research Project, 2001

Statistical Pocket Book Nepal Kathmandu: HMG/Central Bureau of Statistics. CBS (1998)

Tamrakar.S.M., Nelson.D.V., 1991, Potential Community Forestry in Nepal. Kathmandu: Nepal. Ministry of Forests and Soil Conservation 1991

Tsai-Koester, L.H. A survey of Organisations working in the Field of Environmental Statistics Data. Draft Edition. GSF Research Centre for Environment and Health. 1993 Oberschleissheim, Germany

8 - Acronyms and Abbreviations

DFID	Department for International Development
FAO	Food and Agriculture Organisation
FDP	Forest Dependent People
FECOFUN	Federation of Community Forestry Users, Nepal
FRP	Forestry Research Programme
HDI	Human Development Index
HMGN	His Majesty's Government of Nepal
IMS	Interactive Multimedia System
LFP	Livelihood and Forestry Programme
MPFS	Mandatory Provident Fund Scheme
NGO	Non Governmental Organisation
UNEP	United Nations Environment Programme
WCMC	World Conservation Monitoring Centre
WRI	World Resources Institute