

Chapter 6

The Importance of Development Indicators for Assessing Mountain Development

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CONTEMPORARY APPROACHES AND CONCEPTS

The International Year of the Mountains 2002 (IYM) may be regarded as a climax of mountain research, at least from the awareness and publicity point of view. The IYM—which resulted in the Cusco declaration on sustainable development of mountain ecosystems, a policy-related closing meeting in Bishkek, and the Global Summit in Johannesburg—has highlighted the connection of peace to improved living conditions on the one hand and the interrelationship of political and societal conflicts to pauperisation and badly affected livelihoods on the other. Mountain development has been selected during this year as a prime focus for the implementation of programmes. At this point we have to ask how academic research and development practice are cooperating and in which fields activities are being executed. Furthermore, it is important to know what diagnosis is the starting point of activities and how effects and success are measured.

The last decade has seen a growing effort in mountain research¹, and some of the widely attended discussions prominently take place on the internet—e.g., the ‘mountain-forum’ and associated networks. Since the commencement of the UNESCO-sponsored ‘Man and Biosphere’ project more than a quarter century ago, interest has been directed towards the interrelationship between human beings and their environment (cf. UNESCO 1973). Attitudes regarding human interference in high mountain regions range between two extremes: resource use and creation of the cultural landscape in a positive estimation; environmental degradation

¹ Cf. Messerli and Ives 1997, Price and Butt 2000, Funnel and Parish 2001, Kreutzmann 2000, Parish 2002

and destruction of natural resources as a negative impact.² The field of enquiry has been differentiated and the human–environment relations are discussed on a variety of topics. Contemporary high mountain research in this interface addresses several fields.

Population dynamics and mobility

Population growth in high mountain regions cannot be explained by fertility and mortality patterns alone. Intra-mountain migrations and extra-mountain mobility are significant contributors to population processes. The expansion of community territories and participation in seasonal and/or regular economic activities beyond the settlement region need to be accounted for as well.³ Extra-mountain mobility is a prime strategy for participation in exchange relations, global communication, and transnational migration.

Land-use and land-cover change

The conflict potential generated by competition for limited communal resources is a growing feature of social conflicts not only in mountain regions, but elsewhere as well. The loss of the commons and territorial disputes about cultivable land and pastures bind substantial resources in less productive activities (cf. for the Hindu Kush and Karakoram, Ehlers & Kreutzmann 2000). The importance of space is addressed in different commissions of the International Geographical Union (IGU), especially in the Land Use/Land Cover Change (LUCC) project (cf. Lambin et al. 2001) which compiled a database and implemented a research programme for the Hindu Kush-Himalayas (cf. as well Blaikie & Sadeque 2000) among other areas (cf. Teklea & Hedlund 2000).

Survival strategies in the mountain periphery

High mountain research in developing countries features many aspects related to survival under peripheral conditions. The use of marginal resources, the supply of basic food items for local communities, and the exploitation of niche production also are aspects of market access in the framework of deregulation and globalisation. 'Growth, poverty alleviation and sustainable resource management in the mountain areas of South

² Immediate remedies are seen in the exclusion of territories from uncontrolled human interference as conservation zones and/or protected areas (cf. Doempke and Succow 1998, IUCN 1996).

³ Cf. for Nepal Ortner 1989, van Spengen 2000, for an example from the industrialised world the case of Japan's mountain regions illustrates the transregional interrelationships prominently cf. Ajiki 1993, Okahashi 1996.

Asia' was the topic of a conference held in Kathmandu. Local activists, bureaucrats, development experts, and researchers participated in a dialogue about different perspectives.⁴

Decreasing entitlements of marginal groups

Competition for limited resources can be enhanced by private and state interference leading to the loss or expropriation of community assets. Thus along with deprivation of property rights the local population loses its grip on previous entitlements (cf. Saberwal 1999). This holds especially true for the least privileged and marginal groups. At the same time development actors arrive on the scene suggesting projects in regional planning aiming to improve the living conditions of mountain communities according to the development fashion of the day. Property rights in areas without cadastral surveys or with weak institutions should be secured for local mountain communities. Aspects of 'mountain laws and peoples' were discussed electronically within the 'mountain-forum' platform, and the results were published in a brochure (Lynch and Maggio 2000).

Resource management and energy provision

Sustainable use of available fuel resources needs to be compared with the local energy sector, present consumption of fossil assets, and the potential future growth scenario (cf. Clemens 2001, Rijal 1999). In line with a growing population and changing living conditions, a higher demand for natural resources and energy provision is expected from local consumers. In addition, external players are competing to exploit timber resources and to develop energy, e.g., by construction of high dams (McCully 1996). Deforestation, transport of logs using modern traffic infrastructure, and the use of potential hydraulic energy for extra-mountain consumption are fields of conflicting interests. The results of an electronic conference that addressed these issues were recently published by Butt and Price (2000).

Water as the prime resource of competition

The water issue has been highlighted as a resource asset and problem for high mountain regions; several studies have cited this issue as an example of localised resource potential that is traditionally harvested and used locally or by transport of rivers in the forelands.⁵ Political and economic conflicts appear when external players introduce large-scale projects with significant local effects and export of profits. Consequently, the integration

⁴ The key papers and results were published by Banskota et al. 2000.

⁵ Cf. Banskota & Chalise 2000, Horta 1995, Kreutzmann 1998, 2000, Nüsser 2001, Pande 1995, Vincent 1995.

of marginal regions into the national and global market economy poses a threat of losing control over resources. The World Commission on High Dams was introduced in 1998 to settle disputes and to enhance communication among different interest groups in the style of 'round tables'. It aims at optimising project planning and development.⁶ The controversial water issue features quite prominently in the Cusco declaration on sustainable development of mountain ecosystems (<http://www.condesan.org>) and illustrates competing interests over resources in mountain regions and strategies for their use. Key ideas in the Cusco declaration of 2001 include: "integrated watershed development; participation of communities, civil society, and governments; responsibilities for regulation, control, and conservation; respect for traditional organizations, culture, and customary rights; economic compensation policies for mountain populations for the services rendered to develop lowlands."

The aims and development strategies envisaged here for mountain regions lead towards sustainable development and participation in globalised economies whatever the meaning of this might be. Conflicts of interest among different actors, power struggles, economic and political intervention, external and sometimes inappropriate development models fill the spectrum in which mountain development takes place. If mountain regions and their inhabitants are treated as part of world society, then we must assess what we really know about the development deficits and potential of these areas. The hypothesis presented here is that mountain regions are singled out without appropriately considering their incorporation into nation states, administrative structures, and economic networks. There are many experiences from industrialised countries where regional planning and domestic subsidies required detailed information and databases (cf. for example the Swiss 'transformation' study, Brugger et al. 1984). In the context of mountain regions in developing countries where uncountable mountain-related NGOs are based and where numerous development programmes are implemented, there is a significant lack of basic knowledge about assessment of perceived deficits. How do development actors know where to alleviate poverty by initiating a programme? On a global scale we are used to different systems of indicators which are structuring the world on a country by country basis. What information do they contain about mountain areas? In 1997 the International Centre for Integrated Mountain Development (ICIMOD) published indicators of development projected on the districts of Nepal, in which a variety of single and complex indicators was applied in an

⁶ The results were presented and are available under <http://www.dams.org>.

exercise to rank district-wide data in three categories of 25 districts each. Thus, we achieved a tripartite picture of relative ranking (Figure 1). Without knowing how close or far the districts are off mark, these three equally-sized classes provide a regional clustering. Could they be helpful in identifying development deficits? Do these data provide a comparative perspective? Can we compare the development efforts in Nepal with those in neighbouring countries?

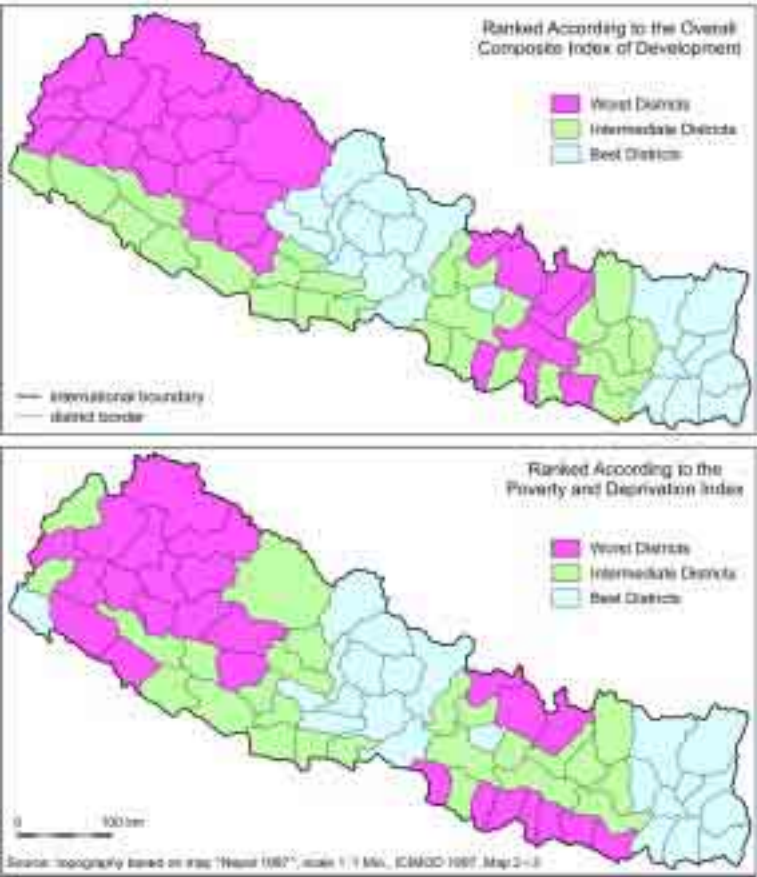


Figure 1: Ranking of Nepalese districts on the basis of the composite index of development and of the poverty and deprivation index

THE HUMAN DEVELOPMENT INDEX (HDI) AND ITS APPLICATION FOR MOUNTAIN AREAS

Indicators about quality of life have been introduced to illustrate regional disparities, deficiencies in infrastructural assets, and inequalities in access to socioeconomic resources and opportunities. A widely used indicator is the Human Development Index (HDI), which relates to a United Nations initiative to reduce the shortcomings of the one-dimensional per capita income, an indicator preferred by the World Bank and global financial institutions. The HDI aims at acknowledging non-monetary transactions as part of domestic economies and at highlighting development impacts that cannot be linked causally to monetary incomes at all. Nevertheless, the first dimension of three is the HDI's expression of per capita income in units of purchasing power parity (PPP); the other two address quality of education and life expectancy. For our discussion about the standard of development in mountain regions, these parameters have to be tested.⁷ HDI data are mainly available on the basis of nation states, which immediately poses a practical problem.⁸ Statistical entities are seldom congruous with relevant units of investigation. In a number of cases the available data are just the result of rough estimates, an indicator of data quality.

In the case of mountain regions in developing countries, we find data about nation states in which mountain areas are located (Table 1). The range goes from some of the poorest countries, such as Afghanistan and Ethiopia, to states in the Latin American cordilleras. In a similar category we find the countries of the former USSR. None is recorded above the middle level (= 0.500 up to 0.800) of the HDI. Such statistical data permit comparisons of nation states, but they fail to provide the information required about regional disparities within mountain regions and about highland–lowland differences. The dilemma of data evaluation becomes quite obvious. What knowledge is available for mountain regions and what kind of statements can be made?

⁷ Here I omit a necessary and most probably enlightening discussion about the theoretical and methodological justification and interpretational implications of quality of life indicators, cf. for controversial appreciations Kreutzmann 2001, Papola 2001, and Rhoades 2001. Practical information about the definition, configuration and mathematical base of the HDI can be found in <http://www.undp.org/undp/hdroanatoools.htm>

⁸ The availability of Human Development Reports gained amazing momentum in recent years: national reports are available for Bhutan, China, Tajikistan, Kyrgyzstan, Nepal — all of which are used in the discussion here. Reports for three Indian provinces, including Sikkim, initiated the process in India, and regional reports for South Asia have been published by the Human Development Centre in Islamabad, Pakistan.

Table 1: Human development indices for selected mountainous countries, 2000

Region	Country	Area (103 km2)	Population (millions)	Life expectancy at birth	Adult literacy rate (%)	Enrolment ratio (%)	PPP (US \$)	HDI	HDI rank	GDI	GDI rank
Africa	Ethiopia	1097	62.9	43.9	39.1	29	668	0.327	168	0.320	142
	Uganda	236	23.3	44.0	67.1	45	1208	0.444	150	0.437	125
	Kenya	580	30.7	50.8	82.4	51	1022	0.513	134	0.511	112
	Rwanda	26	7.6	40.2	66.8	40	943	0.403	162	0.398	135
South and	Papua New Guinea	463	4.8	56.7	63.9	38	2280	0.535	133	0.300	110
Southeast	Myanmar	677	47.7	56.0	84.7	55	1027	0.552	127	0.548	106
Asia	Bhutan	47	2.1	62.0	47.0	33	1412	0.494	140	NA	NL
	Nepal ¹⁾	141	23.0	58.6	41.8	60	1327	0.490	142	0.470	119
	India	3288	1008.9	63.3	57.2	54	2358	0.577	124	0.560	105
	Pakistan	796	141.3	60.0	43.2	40	1928	0.499	138	0.468	120
Central	Afghanistan ²⁾	652	24.8	45.0	31.0	NA	< 785	0.229	NL	NA	NL
Asia	Kyrgyzstan	198	4.9	67.8	97.0	68	2711	0.712	102	NA	NL
	Tajikistan	143	6.1	67.6	99.2	67	1152	0.667	112	0.664	94
Latin America	Guatemala	109	11.4	64.8	68.6	49	3821	0.631	120	0.617	100
	Colombia	1139	42.1	71.2	97.7	73	6248	0.772	68	0.767	56
	Ecuador	284	12.6	70.0	91.6	77	3203	0.732	93	0.718	80
	Peru	1285	25.7	68.8	89.9	80	4799	0.747	82	0.729	73
	Bolivia	1099	8.3	62.4	85.5	70	2424	0.653	114	0.645	96

HDI = Human Development Index GDI = Gender-related Development Index; NA= no data available; NL= no data listed

1) The data used in UNDP publications significantly differ from those published by Nepal South Asia Centre for 1996.

2) The data for Afghanistan are based on estimates for 1995-97.

Sources: UNDP 2002(a&b), World Bank 2002

For a few mountain areas regionalised data can be discussed (Figure 2, upper left diagram). In Tajikistan the difference between the nation state and the mountain district of Gorno-Badakhshan seems negligible. Similar observations hold true for India and Pakistan when provinces are compared. The Himalayan state of Himachal Pradesh reaches similar HDI values as the Indian Union on average, the newly created union state of Uttaranchal even ranges at a higher level (Figure 2, bottom left). But deviations from this pattern become obvious when the Karakoram district of Gilgit is compared with the North-West Frontier Province (incorporating most of Pakistan's share in the Hindu Kush) and the nation. Gilgit fares much lower in all components, but especially when the standard of living is concerned (Figure 2, upper left diagram). In China the mountainous provinces of Qinghai, Tibet (Xizang), and Xinjiang rank below the country's average in life expectancy and educational attainment (Figure 2, upper right diagram). The standard of living is above average in Xinjiang and Qinghai (UNDP 2002b). Xinjiang's significant deviation is due to inter-provincial regional disparities. The industrialised northern part of the province excels in terms of living standards, while less contribution stems from the mountainous south and west. Taking size and diversity of some provinces into account, no reliable information can be derived for the Tien Shan, Kun Lun Shan, and Qilian Shan Mountains. The Tibetan Plateau is represented by Xizang. While China and India differ considerably, Tibet ranks at par with Uttaranchal (Figure 2, bottom left diagram). These data must be interpreted carefully. Nevertheless, a growing database and a refined regional approach allow for some conclusions which draw closer attention to the problems of poverty measurement in mountain regions.

In Nepal, which has a very low national HDI value of 0.325, the mountain regions have a value of 0.277. Within the high mountain districts (Figure 3), major differences occur, and there is also a gap between the low end in Mugu (0.147) and the top level performance of Sankuwasabha (0.365). Nepal is one of the few countries for which district-wise data are available on a large, comparative scale, which allows us to test the hypothesis that mountain regions should be always worse off than the rest of the country.⁹ In Nepal it would be expected that its three zones—Terai, middle mountains, and the high mountain region (Figure 4)—would show decreasing HDI values along a southwest–northeast orthographic profile. The results differ significantly: districts of supreme centrality such as Kathmandu and Kaski (Pokhara)—but also Morang and Jhapa in the Terai—fare best, while Mugu in the mountainous north-west remains at the low end. According

⁹ Data are based on Nepal South Asia Centre 1998 (data for 1996) which differ quite a bit from the nation's average which is used in UN statistics.

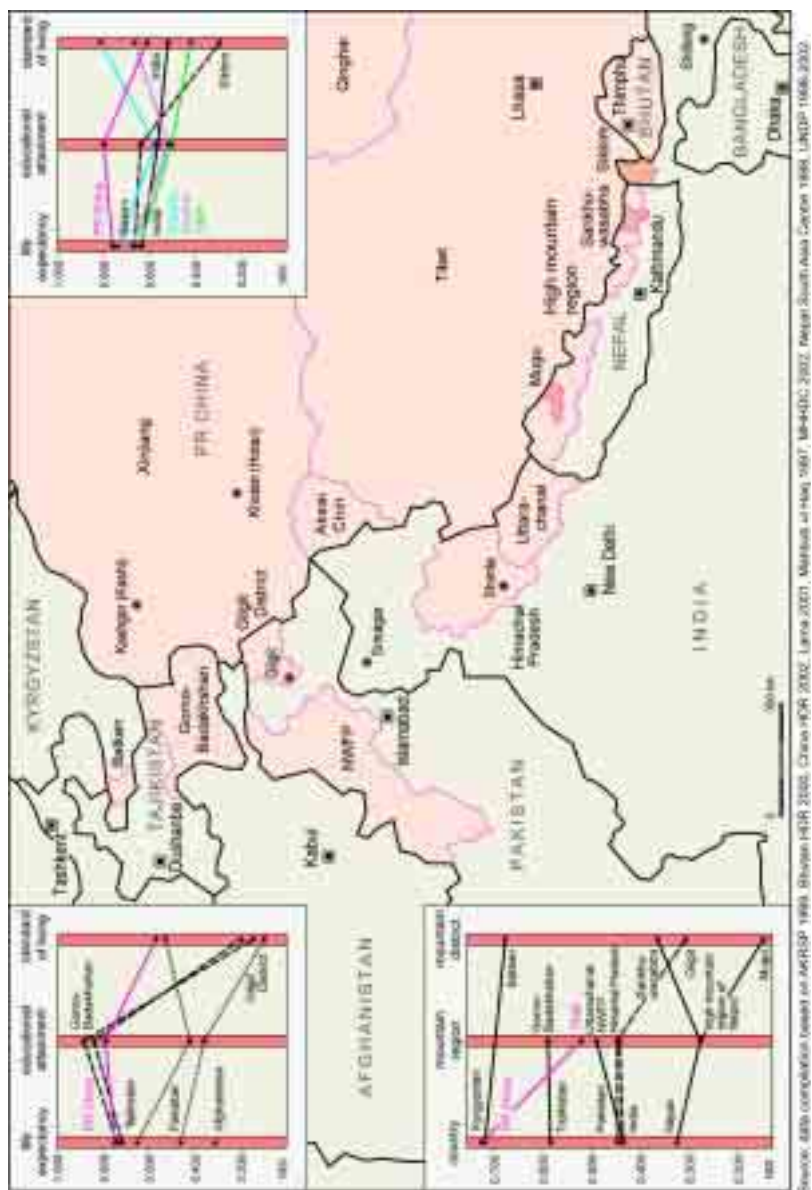


Figure 2: Human Development Index (HDI) for nation states and mountain districts in High Asia

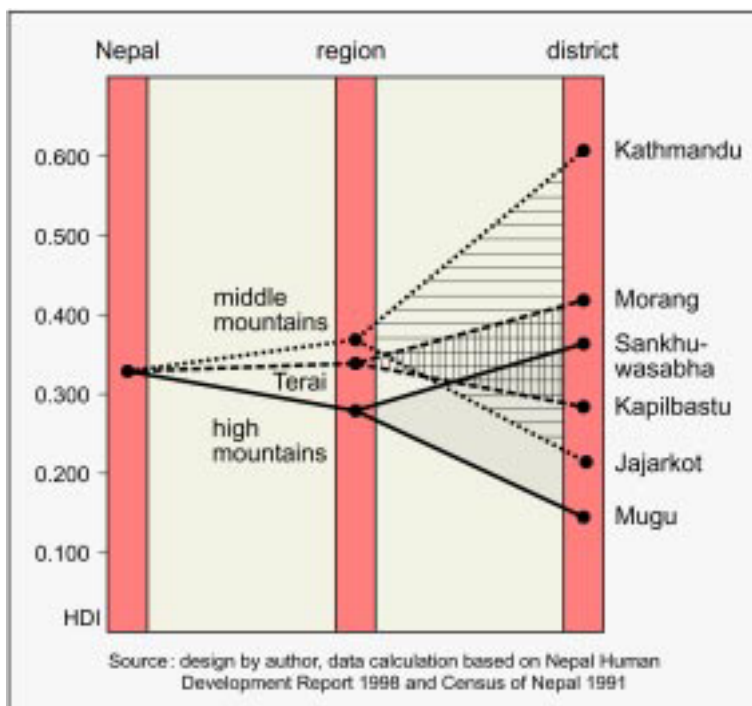


Figure 3: Nepal - HDI values for the Terai, middle mountains, and high mountain regions

to a study by the Nepal South Asia Centre (1998), this gap is demonstrated by a life expectancy in Kathmandu nearly double that of Mugu (67 to 36 years). The estimates of education differ even more: only 19% of Mugu's adults are literate, while 71% in the capital can read and write. It has been argued (Rhoades 2001) that this information does not reflect the 'real' conditions of development. Of course, it does not. Nevertheless, we find here a tool that is widely used in development practice for diagnosis. If activities in that field are at stake, then we must discuss what interpretations are possible and what remains to be desired from other indicator systems. For a comparative study, there seem to be few alternatives available at present.

For a discussion of the suggestion that mountain regions are always worse off than lowland regions—a statement which has often been repeated during several meetings and conferences in the course of IYM 2002 (cf. Papola 2001, p. 4)—a closer look at regionalised data might offer some insight. When all district-wise data are aggregated in the three orthographic

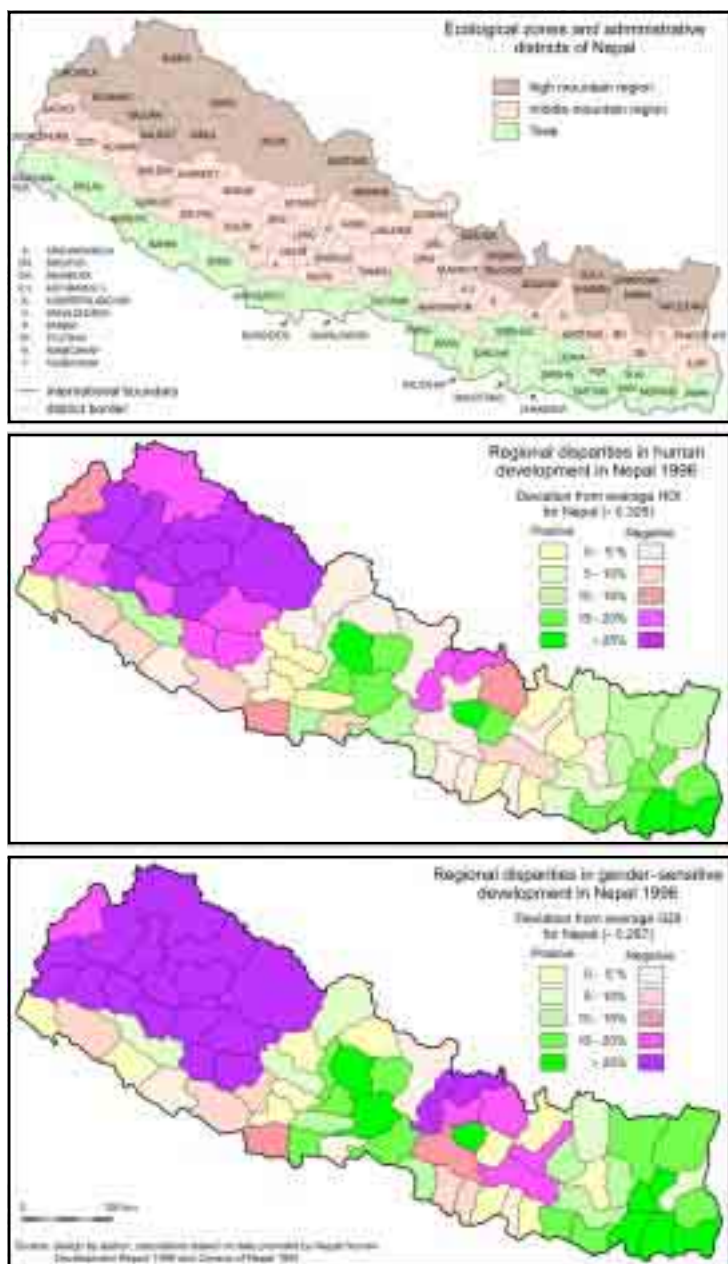


Figure 4: Orthography, administrative structure, and regional disparities in human and gender-related development for Nepal, 1996

categories structuring Nepal, the middle mountains fare best with an HDI value of 0.357 (above Nepal's average), closely followed by the HDI value for the Terai at 0.343, while the high mountain districts produced a significantly lower value of 0.277.

The interpretation of regionalised data for Nepal shows a difference between the western parts of the country—irrespective of orthography they fare lower than average—and the urban (and tourism) centres and the south-east. The urban–rural bias as well as the east–west disparity seem more prominent than orthography (Figure 4, middle). Similar disparities are reproduced when the gender-related development index (GDI) is applied (Figure 4, bottom). Again, data quality and the appropriateness of indicators might be questioned. The exercise presented here is meant to stimulate discussion about the possibilities of illustrating development gaps, regional disparities, and consequently the eventual uniqueness of regions in the context of mountain geography.

Explanations of development gaps need to be sought in the overall economic and socio-political context of a country like Nepal. The neighbouring Himalayan districts of Himachal Pradesh in India fare significantly better than western Nepal. Nevertheless, both areas are in the category of low human development ($HDI < 0.500$).

The Hindu Kush and Afghanistan especially are white spots on the development map as no data are available. Tajikistan and Pakistan, though neighbours sharing common mountain ranges, differ quite a bit in HDI values (cf. Figure 2). The administrative unit (oblast) of Gorno-Badakhshan in the Pamir region complies with the rest of Tajikistan and is significantly above Pakistan's average. In Tajikistan the Soviet model of modernisation that brought basic infrastructure, supplies, and overall education even to remote parts are evident from the high values of life expectancy and level of education. The significant difference in the standard of living shows the socioeconomic pauperisation of most people since the collapse of the Soviet Union and the introduction of economic reforms by the newly independent state.¹⁰ The supply situation is extremely bad at present, quite different from the Gilgit District in Pakistan's Northern Areas, although the standard of living index is even lower there. The share of subsistence production compensates for overall supply deficits. The gaps in the values for Pakistan and Gilgit (cf. Figure 2) are most significant in the dimensions of life expectancy and standards of living. Both reflect the overall deprivation of adequate social infrastructure and business opportunities in the Northern

¹⁰ For a more detailed account of the transformation in post-Soviet Gorno-Badakhshan cf. Mamadsaid and Bliss 1998, UNDP 1998.

Areas. The mountain people of the Karakoram feature as marginal groups when entrepreneurship and market participation are highlighted. Only the level of education has improved and come close to Pakistan's average, due to communal, national, and international literacy and education programmes (cf. Kreutzmann 1996). This brief discussion shows the scope and limitations for data interpretation.

FUTURE PROSPECTS FOR MOUNTAIN DEVELOPMENT

The data deficit has become obvious during this evaluation of information available for assessing development deficits in mountain regions. In recent years development agencies and practitioners have reacted. Qualitative and quantitative information on project areas are collected in a more sophisticated manner. For a number of Central and South Asian countries, annual Human Development Reports are compiled. If the livelihood strategies (cf. Bohle and Adikhari 1998) and living conditions of mountain people are the focus of development activities, then the level of knowledge needs to be enhanced, and appropriate concepts for the assessment of poverty conditions are required. The discussion of the HDI can only be the first step towards a more informed debate about the significance of mountain regions and the visibility of mountain people in a participatory approach.

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