

RESEARCH NOTE

**THE OVEREXPLOITATION OF  
NATURAL RESOURCES IN  
GORKHA: SOCIAL AND  
ECONOMIC CAUSES**

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Destruction of forest and erosion, problems of water balance and even natural catastrophes: all these are consequences of the excessive exploitation of natural resources. The relation between socio-economic structure and its resulting pressure upon ecosystems will be analyzed as one aspect of ecological-geographical investigations (cp. HAFFNER, 1986 and POHLE, 1986) taking Gorkha as an example.

The population of Gorkha is made up of various ethnic groups. The Newar dominate the bazaar and the Chetri, the Bahun and the Jogi the surrounding rural areas. Several "impure" Nepalese castes are present besides the Magar. If one value the settlements according to the ecological advantages of their location, one can see that the typical site of a Newar settlement is the topographically favorable flat area, where there is a good supply of drinking water. Khet land (irrigated rice land) lies only a short distance away. On the other hand, the majority of the Chetri live on steep slopes of bari land (upland fields), where there is only an inadequate supply of drinking water. Khet land can only be reached by way of long, steep paths. The settlements of the Sarki, the Damai and the Jogi are located on the steep slopes below the palace where condition are bad as regards relief, soil and drinking water. As far as the Jogi are concerned, the choice of this location for their settlement was probably influenced by its proximity to the Gorkhnath temple, whereas it is typical for the situation of the "impure" castes to be driven to occupy such peripheral locations.

The majority of Gorkha's inhabitants is economically dependent upon agriculture. The number of full-time farmers is quite small. Many households, whose farms are too small to support a steadily increasing number of members, are dependent upon a second source of income, i.e. farming that is carried out along with another occupation, usually with the aid of day labourers. In particular, members of the "impure" castes and even a few Magar and Shrestha find a part-time occupation as jyami-porters, farm or building workers. Often the Sarki work the land for others as tenants but without tenant status. Families who engage, to a large extent, in trade seldom farm their lands themselves. They have all the work done by labourers. This group of very wealthy people, usually Srestha, determines business life in Gorkha. Those who are completely without any land are mainly the Kami and the Damai.

In the Gorkha region, one can assume the average size of a property to be about 20 ropani (ca. 1 ha). However, at least 25 ropani are necessary to support an average family when the soil is of good quality. This means that the average farm is still under the minimum size needed for subsistence. The properties of the households investigated in Gorkha ranged from 3 to 96 ropani. We can see that the land is not evenly distributed, as there is no shortage of land, in particular amongst tradesmen and the higher castes, whereas impure castes not only have little, but also poor quality land.

According to some estimates, c. 80% of the inhabitants of the Gorkha region do not have enough land to be able to supply their families with basic foodstuffs all year round. The shortage of land obliges the farmers to employ an extremely intensive form of agricultural exploitation. They manage to achieve astoundingly high yields on poor soil using crop rotation systems which produce two to three harvests per year. However, the negative effects of such intensive land use can already be seen today. The fertility of the soil is steadily decreasing, because the periods are too short when fields are allowed to lie fallow. The application of mineral fertilizer can only improve this situation to a certain extent, owing to the poor exchange capacity of the soil. Fields are laid out in areas which are ecologically unsuitable: a practice which brings little profit and is ecologically unjustifiable. It is quite wrong to assume that the growing population can be fed in future by taking measures to intensify farming or by extending cultivation areas. Nowadays, one can already see the trend for many young people to turn to other employment or even to emigrate.

In the Gorkha land register we find *raikar* and *guthi* land, i.e. owners

of fields are either private persons or registered as *guthi*. There is a remarkable amount of *guthi* land in Gorkha; the tenants are mostly Jogi and Bahun and some are Shrestha. Many *guthi* tenants have their land farmed for them by labourers on a crop sharing basis. If the *guthi* receives no services from the *guthi* tenants, for example as *pujari*, it claims a share of the harvest. According to the land register data, all owners of *raikar* land farm their fields themselves. No tenants are mentioned. However, in fact, between 20% and 30% of the fields are not cultivated by the owners themselves but by labourers. Although these labourers work the land quite independently just like tenants, they do not enjoy the rights of a tenant. It is customary for the landlord to claim half of the total harvest, whereas according to the law, a registered tenant need only forfeit half of his main harvest. Unlike the tenant, the field worker may be dispossessed by the owner at any time and it is indeed a fact that the owners often replace labourers so as to avoid the possibility of their becoming eligible for a legal claim to a part of the land. This evasion of the tenancy laws not only keeps the field workers themselves in an extremely precarious economic situation but also has a negative effect upon agricultural productivity. Labourers have neither capital nor security to invest time and energy in measures to increase farming intensity, as he is not entirely economically dependent upon agriculture. Thus, it could be observed that well irrigated fields were only in use once a year for a rice crop, whereas upland fields of marginal soil in ecologically unfavourable locations were intensively worked, because they belonged to the farmers themselves. It would be desirable, both from an economic and an ecological point of view, to recognize the labourers' tenancy status as set out in the Nepalese agrarian law.

A common practice is to employ day labourers during the planting and harvest seasons. Families with a few members capable of work or those where certain members already have a steady job usually have the majority of the work done by day labourers. In contrast to the situation of the farm workers, the management of the farm lies in the hands of the owners. It is not always profitable to have day labourers do the work in the fields, as wages are too high in comparison to yield. Thus, some owners of land prefer more extensive use of the land, for example by harvesting only one crop per year. There are even cases of land being left to lie fallow in a region, where there is an acute shortage of land.

When one examines the cadastral maps, one is immediately struck by the conglomeration of small allotments into which the land is divided up. Thus, there is not only little land available for farms, but what there does

exist is dispersed over wide areas - as a result of the normal procedure for sharing out the fields among the sons. If one categorizes the owners and guthi tenants of the fields according to castes, it becomes clear that members of impure castes have hardly any land of their own. If one draws parallels between the land quality of a certain plot and the caste of its owner, one can see that the Newar have mostly khet land, whereas the Magar have only few irritable allotments in spite of the proximity of their villages. On the contrary, they have very small plots of the extensive bari land. The few fields of the Damai, The Sarki and the Kami are also situated in the ecologically unfavourable areas. The tendency of the Newars towards the irrigated wet rice cultivation well-known in other regions of Nepal can also be observed in Gorkha. The large number of fodder trees growing in the upland areas on the Chetri land is striking. They guarantee not only a supply of firewood and fodder for the animal, but also stabilize the hanging terraces. These examples illustrate the fact that in Gorkha, too. One can observe variations in cultivation methods and in reactions to environmental threats, which are specific to certain ethnic groups. If one compares the cadastral maps to a map of erosion damage, another aspect of possessory right with ecological consequences becomes very clear: the worst damage is to be found in areas which do not belong to private persons but which are entered in the land register as communal land. One explanation for this is that non-arable land usually remains the property of the state. However, one can often observe, under identical ecological conditions, intact fields situated next to extremely degraded pasture land which has been damaged by erosion. The former is *raikar* land, the latter communal land.

The keeping of livestock plays a very important role for Gorkha's farms. The production of dung is of key importance although on most farms the amount produced is not sufficient for all the fields. Female water buffaloes and cows are kept for milk; the male buffaloes and goats provide meat. Whereas the water buffaloes and sometimes the other bulls too are kept and fed all year round in stalls except when they are taken to drink or to bath, and the cows and goats are left to find fodder for themselves. They graze along the roadside, the paths, near the rivers and in the forest. Pasture land as such hardly exists and what there is, is often very degraded and thus not very productive. The keeping and feeding of livestock in stalls, coupled with the use of fallow fields as pasture (a form of livestock farming which is ecologically suited to this area), often proves to be impossible, because the supply of fodder for the animals constitutes a problem. R.C.U.P. and the veterinary authorities in the area are together attempting to simultaneously reduce the number of livestock and increase the productivity of the animals.

However, fewer animals also produce less dung and mineral fertilizers cannot completely replace natural dung in the soils which are mostly poor in humus. Another aspect is that the sale of goats, which are absolutely unpretentious animals, is often the only source of ready cash for the poorer families. It is planned that the intensification measures should include the setting up of an artificial insemination station. New, improved animal populations should in all probability prevail in Gorkha during the course of the next few years. It will, however, prove more difficult to bring about an improvement in the fodder situation. The productivity of pasture areas could indeed be increased by, for example, sowing of nutritious types of grass and introducing a grazing rotation system. However, besides the organizational problems involved, there are nowhere near enough areas available. A further possibility is the increased cultivation of fodder trees and sparing usage of the forest as pasture land. It would seem that besides the solution of the energy and firewood problem, finding an answer to the question of overgrazing is a particularly pressing task for ecologically-orientated agrarian planning.

In Gorkha, all the firewood must be collected from the forests of the surrounding area which are by no means large. As there is not nearly enough dead wood available to fulfill the demand, healthy trees are also illegally chopped down. The majority of the inhabitants of the area regard the provision of a firewood supply as extremely problematic. It is a long way to the forest and there is always a chance of being caught by a ranger. On the other hand, people do realize that cutting down the forests will result in more erosion. An important task for the future for both the forestry authorities and the village development committee will be to increase the productivity of the forest by means of specific measures. The forest should not merely be protected, but opened up to many different kinds of usage as defined by the term "social forestry", so as to secure the cooperation of the local inhabitants.

The mountain population of Nepal has developed a type of farming adapted to its surroundings, based on a comprehensive knowledge of the natural environment. Nowadays, it is, however, becoming more and more obvious, that the relationship between man and his environment is disturbed. What used to be the responsibility of the individual to protect his natural environment and to secure his own existence by means of adapted land use is nowadays being increasingly delegated to institutions. To put it somewhat polemically, protection measures are only then regarded in a positive light by the local population if they are not implemented in their own village or, as in the case of the damming of rivers, they bring no restrictions with them.

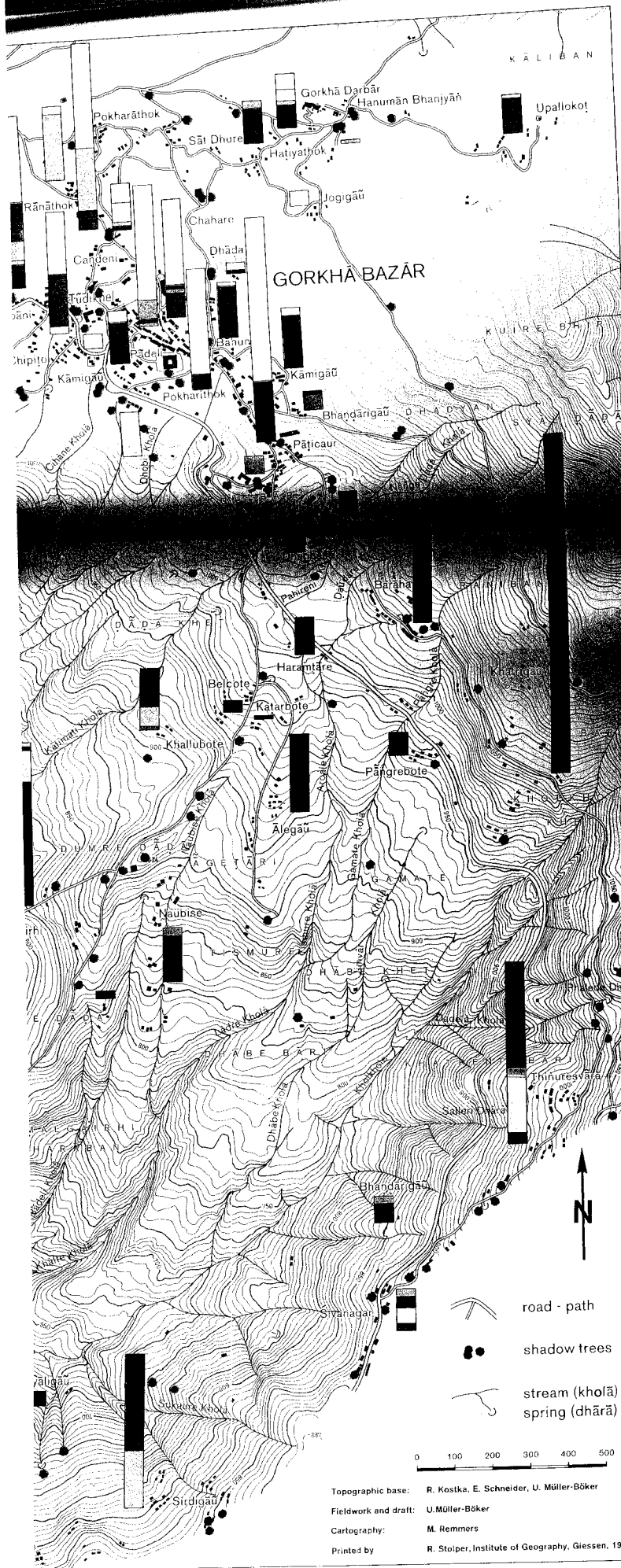
Most people are of the opinion that the government is not able to work particularly efficiently. On the other hand, absolute miracles are expected from both the state and from development projects, onto which the responsibility for environmental protection has been thrust all too easily. Some of the people I talked to pointed out quite rightly that measures to prevent erosion can only be carried out successfully if the local inhabitants can again be brought to accept responsibility for their own surroundings. The fact that agriculture in the Gorkha region is so productive proves that its inhabitants must be well aware of the processes in their natural environment. A traditional understanding of the environment is also expressed in the language: the names of settlements and terrains in the region reflect both the economic dependency of the predominantly farming population on the natural environment and also a thorough knowledge of it.

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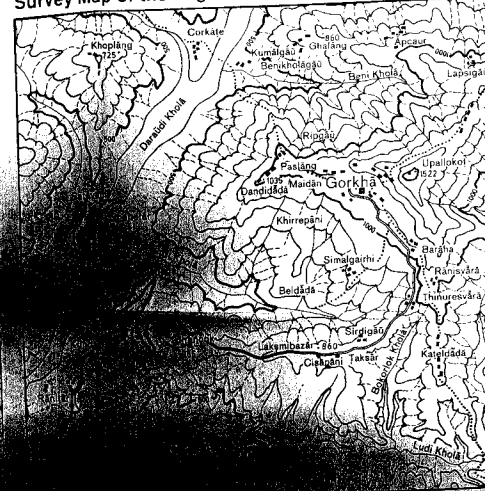
# GORKHĀ - SIRDĪ KHOLĀ

## Ethnic Groups and Castes















Survey Map of the Region

1 : 100000



number of households

### Ethnic Groups and Castes

-  Śreṣṭha
-  Śākya
-  Bāhūn
-  Chetri
-  Jogi
-  Sārki
-  Damāi
-  Kāmi
-  Gāine
-  Kasāi
-  Magar
-  Gurūng

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