

# 1. Introduction

## Development Perspective

In recent years, local development planners have started to take a keen interest in and have become critical of rural development programmes, the emphasis of investment and aid policies, and project-oriented development approaches. The people of Bhardeo are no less critical of development programmes that concentrate their activities on biophysical management aspects and not on income generation for the local people. Poverty becomes less of an issue to be addressed and becomes very sensitive politically and economically because of the absence of an outspoken national policy.

For too long, Nepal has been obsessed with its perceived problems of deforestation and population growth and has guarded its poverty zealously. Objective assessment of development works and issues directly linked to poverty, apparently the main cause of environmental degradation, has not been undertaken.

There is also the question of whether to alleviate poverty or to alleviate the food deficit. Most integrated rural development projects place a high priority on food production programmes which are relatively cheap and show comparatively impressive results. Manufacturing and job opportunities, which require relatively high investments with slow and undramatic results, receive low priority. In the hills of Nepal, particularly in areas like Bhardeo, opportunities exist for creating off-farm activities. The main purpose of off-farm activities should be to create employment opportunities to generate additional cash income, so that households can meet costs beyond their basic requirements.

With regard to biophysical management through reforestation and checkdams, the limit to their effectiveness is not only due to geophysical conditions but also to the socioeconomic conditions of the population that lives in these mountains.

Traditional land use and cropping patterns also place constraints on the development of the community within given environmental conditions. It is imperative to work out plans and strategies for natural resource base conservation,

protection, and long-term rehabilitation and management of the local economy based on the resource base. The identification of local economic and ecological potential is a vital step towards implementing feasible economic development programmes.

**Development feasibility in the context of identifying target households' income enhancement activities that lead to self-reliance and management of development by grass-roots' level institutions is extremely important. If development is also to be sustainable, then the environment must receive due consideration.**

It is often difficult to separate resources (production base) from the environmental setting in the mountain economic-ecological system. At which stage and state of the economy the natural environment becomes a resource or vice versa is relative to the production base and the economic condition of the community in question. The natural environment, in most cases, is an aggregate of sociocultural-economic-ecological elements and becomes an environmental resource when part or whole of it is used for production and enrichment and exists as a community's present and future assets.

The questions of potential and sustainability of the environmental resource are governed by the role of resources being defined, whether they are for basic requirements (employment leading to income generation), or for regular or occasional use; condition of the resource base (in the case of land resources, soil fertility, stability, and productivity), depending upon climatic variations; and the scale of demand placed on the resource.

Given the direct intensive use of natural resources, especially of the farmlands and forests, and the equally intensive indirect use of livestock, as in Bhardeo, should the existing practices of resource use and poverty continue, local resources could become limited. The resources, particularly the tree resources generated by the biophysical management programmes, would not be protected in the long run. The community would also have to use up the newly established tree resources for survival.

Occasionally, development experts tend to assume that farmers, particularly those in the mountains, do not have planned strategies for facing local problems or managing local resources. This does not hold true everywhere. The Bhardeo community shows how indigenous techniques can be used in the management of natural resources, such as livestock, given limitations that are not usually felt, even in this part of the world. The limitations include a high rate of deforestation, a food deficit lasting over six months a year, damaged farming infrastructures (terraces and irrigation systems), and out-migration during the dry period of most adult males in search of incomes. This shows that, even in the most unfavourable conditions, the efforts of the local mountain communities reflect their best options when it comes to the management of scarce and vulnerable resources.

### *Poverty and Development Issues*

The major problem in the mountains is not the food deficit, which can be solved by better production techniques, storage technologies, organised marketing, and efficient distribution of food and services, but the lack of **purchasing power**. Cash distribution in the form of wages, which are small, has not helped to improve the production base of individual households in the mountains. A little food security offered over the dry period, based on labour wages in kind, does not make up for the total economic deficit affecting the sustained development of Bhardeo and other areas in these mountains. The wages of a common labourer in Nepal, especially in the rural areas, are too low to make any significant contribution to the household even if all the economically active members of the household could find a place in wage-earning programmes.

There are cases of special programmes, like the food-for-work programme in Nepal, which do not address the issues of the poorest of the poor due to the scale (too low), nature (mostly in food products), mode (through middlemen), and timing (seasonal work opportunities) of the wage payments. In most of the food-for-work programmes, even cash transfers are not felt to be necessary. Cash transfers in small amounts are not a solution to the existing poverty. What is not debated is the fact that food security is a prerequisite to changes in the economic conditions.

A common approach to change is limited by the fact that the production and demand base of individual households differ within a community. Economists and environmentalists should work together towards the "self-reliant development

of the poorest of the poor" at the local level to generate sufficient knowledge about the issues involved.

Given the ecological-economical and social constraints and the extremely limited economic fallback potential, the poor seem to lack an elaborate self-help and resource management system. Individuals cannot get far with small amounts of cash and limited labour but, in specialised production groups, they could progress, provided the activities generate income above the level of their basic food needs.

Since, in many cases, environment and resources can be one and the same in the mountain eco-system, for integrated development of mountain communities **the level of environmental poverty should also be considered by the planners as a parameter for investment and development.**

### *Planning for Development*

A general concept and planning for development can be based on knowledge of the country, in general, whereas, to implement development policies, it becomes important to know the local field in particular in order to make pertinent decisions. **The environmental reality, e.g., resource management in the mountains, is that ultimately every decision and adjustment counts with regard to a single tree being planted, or a single metre of road being constructed, or a single off-farm employment opportunity being created.**

After all, the mountain community is an important factor in ultimately bringing about a managed environment so that favourable development conditions prevail. For mountain communities, a defined resource boundary of both physical and legal nature and guaranteed ownership of the farmlands and forests are important motivating factors. The political boundaries do not satisfy the resource management needs (as characterised by resource use at present), particularly the use of forests, of mountain communities like Bhardeo, nor have the newer institutions yet proved to be appropriate to guarantee rational management of natural resources, or for that matter the environment.

### **Understanding Bhardeo**

#### *Location*

Bhardeo is located almost in the centre of Lalitpur district's north-south transect (Figure 1) - in its mountainous part. It

# THREE DISTRICTS OF KATHMANDU, LALITPUR & BHAKTAPUR

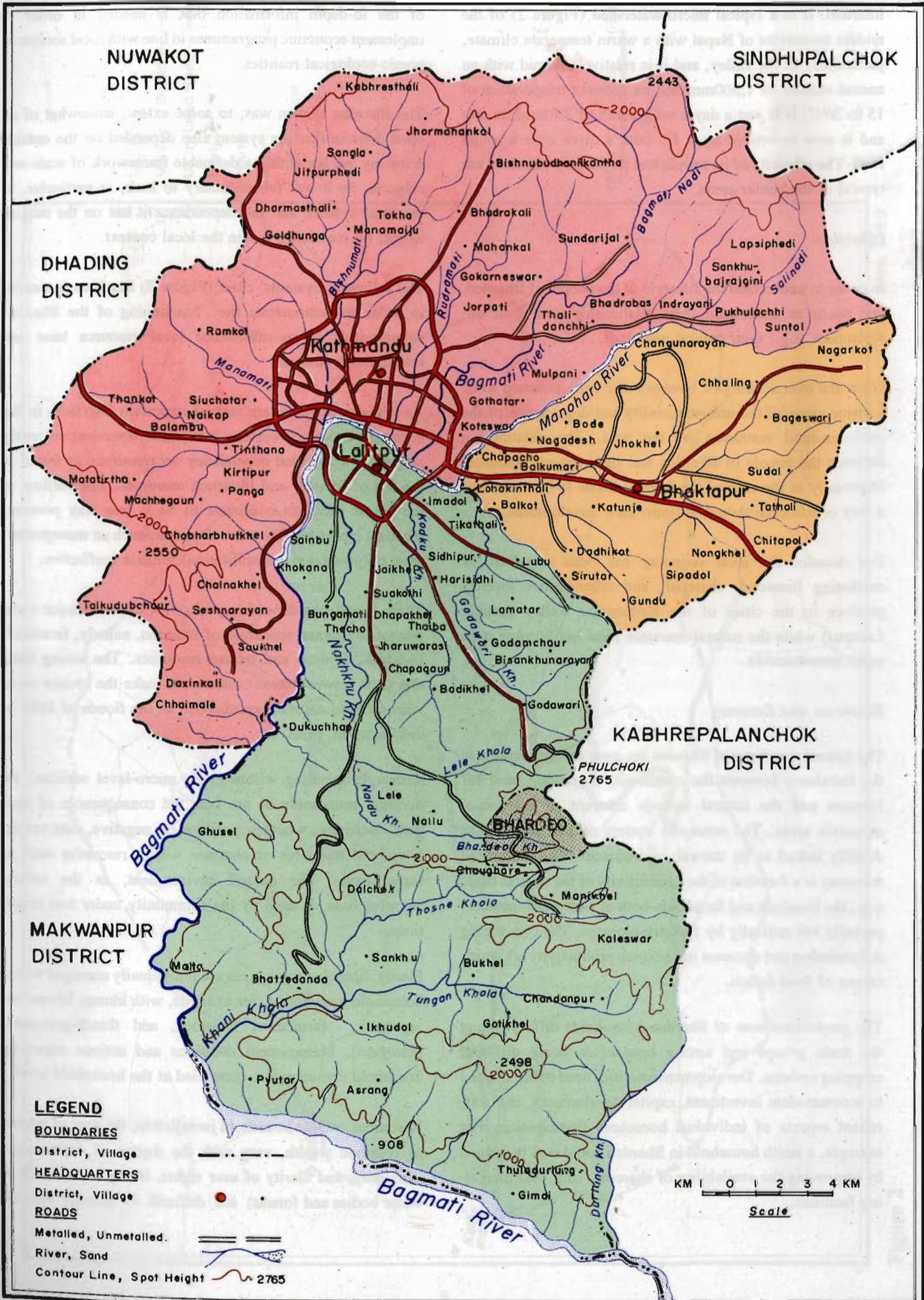


Figure 1

Prepared by ICIMOD June, 1989

lies within the Kathmandu Valley watershed. The last stream coming from the south to Kathmandu Valley originates from Bhardeo. It is a typical micro-watershed (Figure 2) of the middle mountains of Nepal with a warm temperate climate, particularly in the valley, and it is relatively humid with an annual rainfall of 1,500mm and an ambient temperature of 15 to 20°C. It is just a day's walk south of Kathmandu city and is now accessible by a 1.5 hour's drive over a rough road. The ethnicity of its people and its farming practices are typical of the cooler areas.

### *Lifestyle*

In order to understand the lifestyle of the people of Bhardeo, one needs to understand their relationship with their environment, e.g., their natural resources.

Often the overstocking of livestock has been assumed to be a major cause of the unsustainability and degradation of the environmental resources of the area. The relationship between the people of Bhardeo and their natural resources (especially in the case of the forests) needs to be viewed as a way of life even though it limits their development.

For decades the local economy has been sustained by marketing firewood, charcoal, and other minor forestry produce in the cities of the Kathmandu Valley (mainly Lalitpur) while the natural resource base has become even more unsustainable.

### *Resources and Economy*

The natural resources of Bhardeo are poor and susceptible to the imbalance between the community's growing need for biomass and the natural hazards inherent in monsoonal mountain areas. The economic system of Bhardeo is thus directly linked to its natural environment. The household economy is a function of the productivity of the natural base, e.g., the livestock and farmlands—both of which are sustained partially but critically by forestry biomass. The converging deforestation and decrease in livestock productivity are major causes of food deficit.

The production base of Bhardeo households differs among the trade groups and among households using different cropping systems. Development activities need to be adjusted to accommodate investment, capital development, and self-reliant aspects of individual household participation. For example, a smith household in Bhardeo could best be helped by improving the availability of charcoal, iron, and marketing facilities.

The difficulties faced by the local community and government institutions could also be attributed to a common lack of the in-depth information that is needed in order to implement economic programmes in line with local socio-economic-ecological realities.

The Bhardeo system was, to some extent, somewhat of an open door in that the system also depended on the outside economy yet lay within a definable framework of scale and subjects. So it was felt necessary to look, in particular, at the local system, and the dependence it has on the outside world, by remaining within the local context.

The following systems' chart (Figure 3) has been presented in order to demonstrate the functioning of the Bhardeo community's below-subsistence level resource base and resource use patterns.

As is apparent, there are several important interfaces in the economic-ecological system, partly interdependent and partly subject to a lopsided dependency on resources as found in the use of forestry and livestock resources. The outflow of the forest products continues to be a one way process, whereas inputs for forest development, such as management aspects (protection, rehabilitation), remain ineffective.

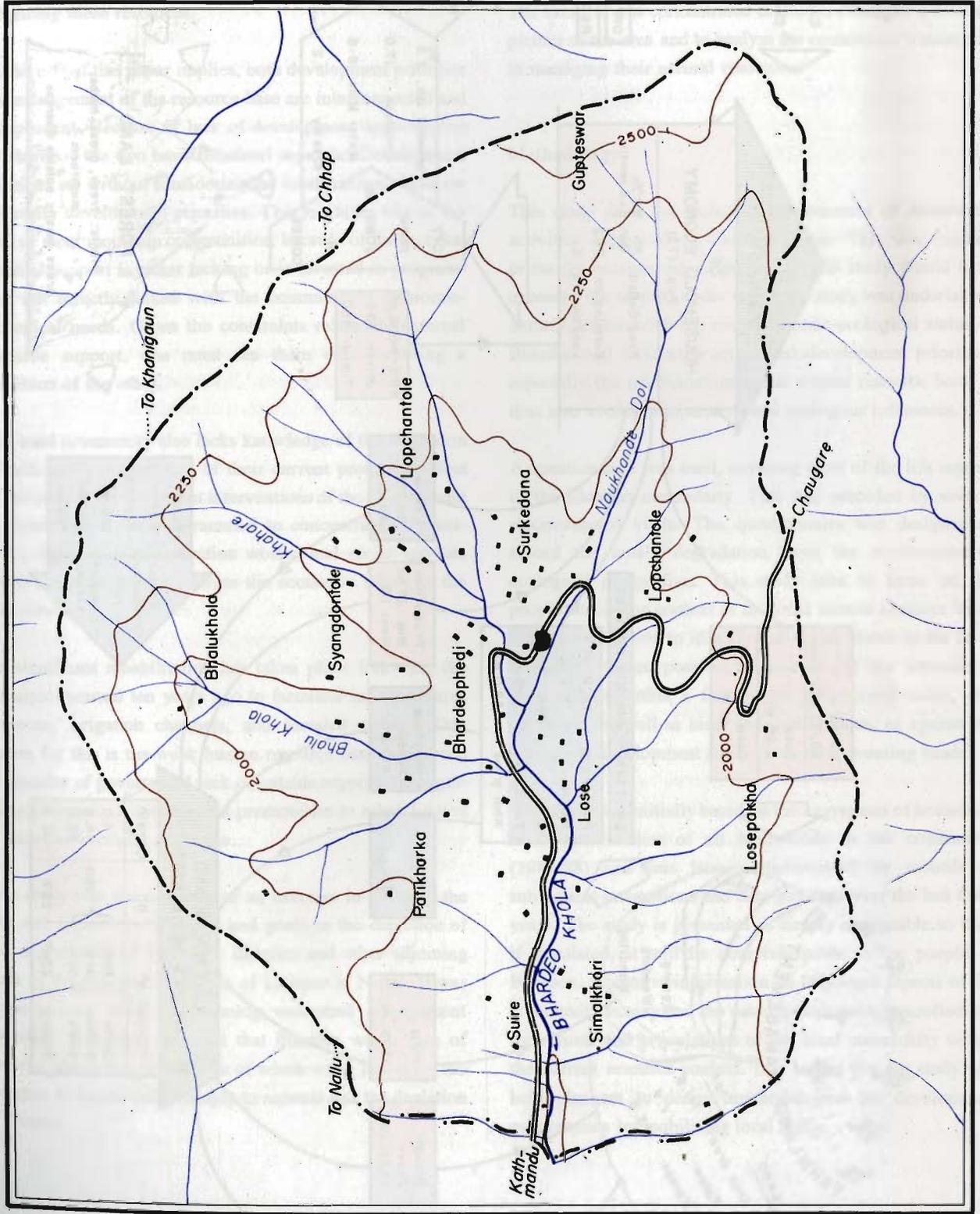
There is a strong dependency amongst the four major components of natural resources of Bhardeo, namely, farmland, livestock, forests, and human resources. The strong links that exist between these components make the system more vulnerable to natural hazards such as the floods of 1981 or deforestation, pests, etc.

Although operating within local, micro-level realities, individual households do not bear the consequences of their own decisions, whether positive or negative, concerning household resources or common wealth resources such as forest lands. The natural environment, as the natural resource base, is used by the community under two conditions.

Firstly, household resources are individually managed within household jurisdiction, for example, with human labour and ingenuity: farmlands, livestock, and thatch-grasslands (*kharbari*). Management decisions and actions regarding household resources are controlled at the household level.

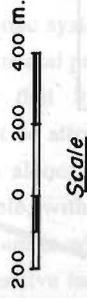
Resources outside household jurisdiction, the uses of which, as common wealth, vary with the degree of dependence, proximity, and clarity of user rights, if any exist, (such as water bodies and forests) are difficult to manage because

# BHARDEO VILLAGE



**LEGEND**

- Village Boundary
- Un metalled Road
- Footpath
- House
- River
- Contour Line
- Spot Height



# A SIMPLIFIED FLOW CHART OF RESOURCE MANAGEMENT IN BHARDEO VILLAGE 1987 - 88.

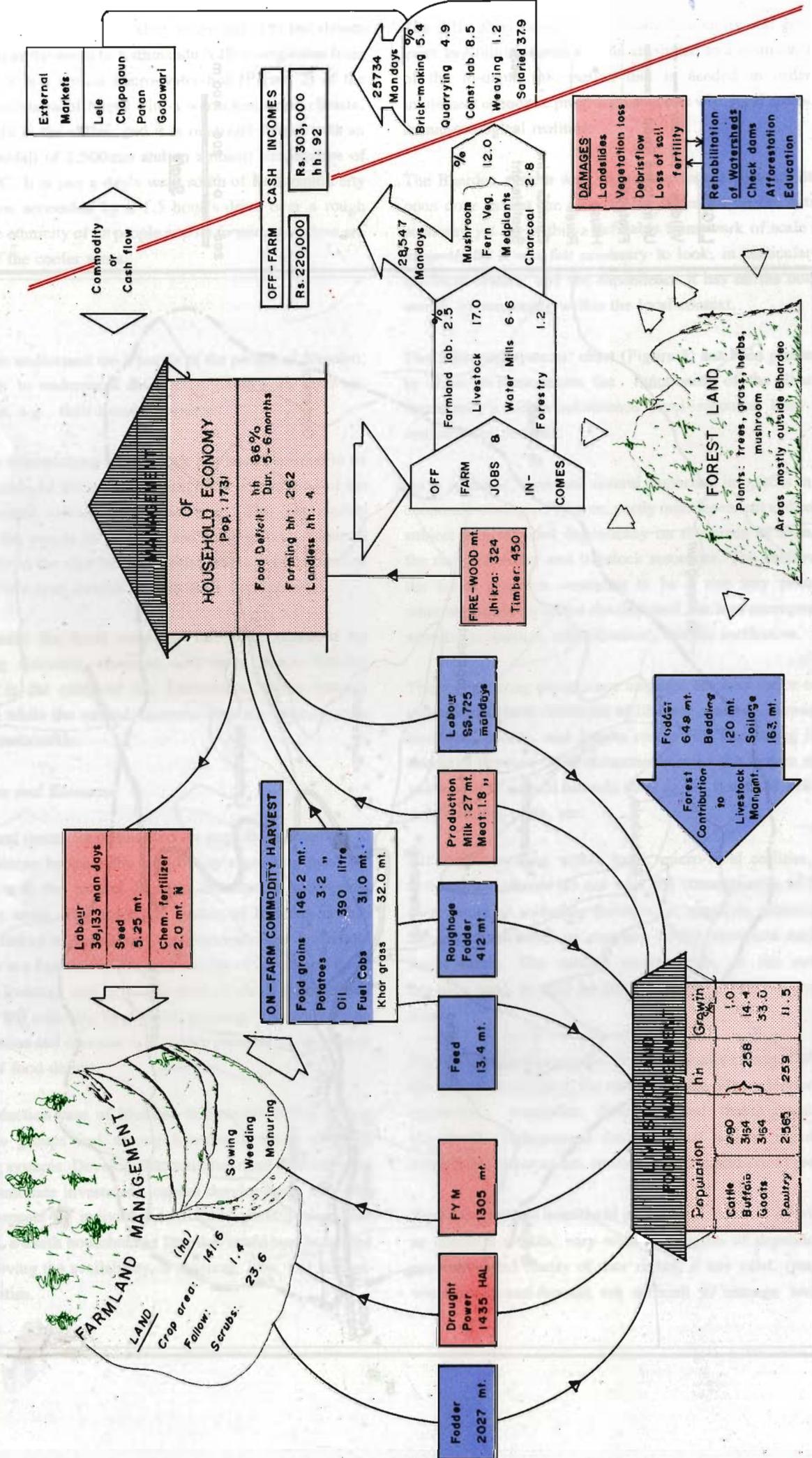


Figure 3

hh = house hold

community-level management decisions are non-existent in Bhardeo.

To the Bhardeo community, the natural environment (particularly forests, livestock, farmlands, and water) has been their sole asset and an integral part of their farming system. As the whole system of sustenance and development in Bhardeo depends upon the natural resource base, it is only natural to think of development priorities in terms of enhancing these resources.

As the title of this paper implies, both development priorities and management of the resource base are interconnected and interdependent. Because of lack of development opportunities in Bhardeo, the two have remained separate. Development priorities set without considering the local resource base are not really development priorities. This might be true in the case of most mountain communities, because of the fact that external support is either lacking or is invested in programmes not directly linked with the community's economic-ecological needs. Given the constraints related to external resource support, one must see them each as being a condition of the other.

The local community also lacks knowledge of the long-term impacts and consequences of their current problems. Most of the ongoing development interventions of the Government or donor NGOs are programmed to concentrate on plantation, engineering construction works, and social services which normally do not address the economic issues of the area directly.

No significant rehabilitation has taken place following the damages incurred ten years ago to farmland infrastructures (terraces, irrigation channels, and forested slopes). One reason for this is the weak human resource base; weakened by decades of poverty and lack of outside support. Strengthening of human resources is a prerequisite to rehabilitation of Bhardeo's natural resources.

This study was the outcome of an exercise in defining the role and importance of cattle and goats in the depletion of and degradation of forests in Bhardeo and other adjoining parts of the mountainous areas of Lalitpur in Nepal. It was a preliminary study to planning watershed management activities. It became apparent that Bhardeo was a case of poverty, the causes and effects of which were, however, too complex to be attributed simply to animals and the depletion of forests.

It is unfortunate that livestock, which are a crucial link in the mountain economic system, have often been regarded as a cause for environmental problems in mountain watersheds. Experience shows that low livestock productivity and deforestation cannot be attributed, in any particular area, to fodder exploitation alone. The nature of the problems in Bhardeo, for example, with its diminished forest resources, may be a case in point in which livestock could be assumed wrongly to be a causative factor in the deforestation process. The exercise was concentrated in Bhardeo to make a detailed picture of the area and to analyse the community's strategies in managing their natural resources.

### Methodology

This study does not include the economics of investment activities suggested in Chapter Seven. This was omitted primarily because the scope of the case study would have exceeded the context under which the study was undertaken; namely, to establish the socioeconomic-ecological status of Bhardeo and to identify articulated development priorities, especially the rehabilitation of the natural resource base. It thus also avoids comparative and analogous references.

A questionnaire was used, covering most of the life aspects of the Bhardeo community. This was preceded by several reconnaissance visits. The questionnaire was designed to record the area's degradation from the socioeconomic-ecological perspective. This study tries to focus on the people within the context of the local natural resource base. Efforts were made to identify individuals down to the level of babies, where possible by name, and the network of relationships within a family, the educational status, and economic, as well as birth and death, status, as against the traditional development study method of counting heads.

This study was initially based on the aggregates of household level case studies of all households in the community (1987/88) and was later complemented by records of subsequent interactions and data gathered over the last three years. The study is presented as simply as possible so that, if translated, it will be comprehensible to the people of Bhardeo. Access to information on important aspects of the community is easy and the development priorities reflect the aspirations and articulations of the local community within the current resource context. It is hoped that the study will help planners to design methodologies for development programmes by mobilising local skills.