

FORESTRY RESEARCH PAPER SERIES

Number 6

December 1986

NONFORMAL FOREST DEVELOPMENT COOPERATIVES:
A CASE STUDY OF BHOKRAHA VILLAGE, NEPAL

Ram Kumar Sharma

HMG-USAID-GTZ-IDRC-FORD-WINROCK PROJECT
STRENGTHENING INSTITUTIONAL CAPACITY IN THE
FOOD AND AGRICULTURAL SECTOR IN NEPAL

FOREWORD

This Forestry Research Paper Series is funded through the project, "Strengthening Institutional Capacity in the Food and Agricultural Sector in Nepal," a cooperative effort by the Ministry of Agriculture (MOA) of His Majesty's Government of Nepal and the Winrock International Institute for Agricultural Development. This project has been made possible by substantial financial support from the U.S. Agency for International Development (USAID), the German Agency for Technical Cooperation (GTZ), the Canadian International Development Research Centre (IDRC), and the Ford Foundation.

One of the most important activities of this project is funding for problem oriented research by young professional staff of agricultural agencies of the MOA and related institutions, as well as for concerned individuals in the private sector. In particular, funding is provided by the Ford Foundation to support research activities related to the human aspects of natural resource management. This research is carried out with the active professional assistance of the Winrock staff.

The purpose of this Forestry Research Paper Series is to make the results of the research activities related to forestry available to a larger audience, and to acquaint younger staff and students with advanced methods of research and statistical analysis. It is also hoped that publication of the Series will stimulate discussion among policymakers and thereby assist in the formulation of policies which are suitable to the management of the natural resource systems upon which the development of Nepal's agriculture depends.

The views expressed in this Forestry Research Paper Series are those of the authors, and do not necessarily reflect the views of their parent institutions.

Sarah J. Tisch
Michael B. Wallace
Series Editors

FORESTRY RESEARCH PAPER SERIES

Number 6

December 1986

NONFORMAL FOREST DEVELOPMENT COOPERATIVES:
A CASE STUDY OF BHOKRAHA VILLAGE, NEPAL

Ram Kumar Sharma

HMG-USAID-GTZ-IDRC-FORD-WINROCK PROJECT
STRENGTHENING INSTITUTIONAL CAPACITY IN THE
FOOD AND AGRICULTURAL SECTOR IN NEPAL

TABLE OF CONTENTS

	Page
INTRODUCTION	1
Importance of Forest Resources	1
Causes and Effects of Deforestation	1
Development Effort	1
Institutional Development	3
RATIONALE AND OBJECTIVES	4
Statement of the Problem	4
Rationale	4
Objectives	5
Limitations	5
Methodology	5
THE SETTING	5
Location	5
Land Use	5
Demographics	6
Economy	6
Forestry	6
Fuel Situation	6
THE NONFORMAL FOREST DEVELOPMENT COOPERATIVE-BHOKRAHA	7
Background	7
Objectives	7
Factors Influencing Establishment of Cooperatives	7
Organization and Management	8
Problems and Prospects	10
Future Plans	11
CONCLUSION	11
RECOMMENDATIONS	12
REFERENCES	13

NONFORMAL FOREST DEVELOPMENT COOPERATIVES:

A CASE STUDY OF BHOKRAHA VILLAGE, NEPAL

Ram Kumar Sharma*

INTRODUCTION

Importance of Forest Resources

In Nepal, the forest, as a renewable resource, protects the land from soil erosion. The agricultural sector provides employment to more than 90 percent of the population, generates nearly two-thirds of the Gross Domestic Product (GDP), and is responsible for three-quarters of the total export earnings. The forest, with its contribution to soil and water conservation, plays an important role in sustaining the national livelihood of agriculture.

In addition to its general function of preserving the ecosystem, the forest contains different products which are in high demand. As Nepal has few fossil fuels, fuelwood accounts for about 87 percent of the energy supply. Selling firewood is a source of income for many poor households. Timber and medicinal herbs account for 20 percent of the Gross National Product (GNP), while forest fodder supports over 15 million ruminants (APROSC, 1985).

Causes and Effects of Deforestation

The importance of the forest becomes more apparent as the effects of deforestation intensify. Deforestation has adversely affected the water-retaining capacity of the soil, resulting in severe erosion, as evidenced by landslides in the hills and floods in the Tarai. An average of 7 mm. of top soil are lost each year (NPC, 1985). The situation is damaging the village economy, creating a firewood crisis, reducing timber exports, lowering agricultural exports, and worsening the balance of payments.

Human factors behind deforestation include the encroachment on the forest for crop production, an increased demand for firewood and timber for building construction, the use of timber in industry, an increased demand for fodder, and forest fires. If the present deforestation trend of 2.1 percent annual loss persists, the forested area in the hills and the Tarai will disappear in 10 and 20 years, respectively.

Development Effort

His Majesty's Government of Nepal initiated its forest development effort in 1956. The Forest Nationalization Act nationalized all private and community forests, thereby preventing people from continuing the

*Ram Kumar Sharma is a Research Officer at the Agricultural Projects Services Centre, Kathmandu, Nepal.

traditional custom of exploiting forest resources. Nepalis believed that their right over the forest had been taken by the government. Consequently, protection of forest on the local level was gradually neglected (ADB/M, 1982). In the absence of local cooperation, the government faced various difficulties protecting the forest. To resolve this situation, the government gave primary importance to the role played by people in its 1976 National Forestry Plan. The objectives of the plan are:

- Maintain the natural and ecological balance by conserving soil and water resources of the country.
- Help raise the living standard of the Nepalese through economic mobilization of the forest resources.
- Introduce a scientific forest management system and support development efforts in a socially and culturally appropriate manner.
- Involve Nepalese in all aspects of forest protection, production and proper utilization.
- Gain and spread knowledge about the contribution of the national forests in development.

The plan provides the opportunity for people living adjacent to forests to take responsibility for managing and protecting them.

To introduce private planting and community sanctions, the Act was later amended. Accordingly, rules were established to facilitate effective implementation and villagers were given the opportunity to take part in forest conservation projects. The system of declaring forest-adjointed uncultivated land as fallow for two successive years was changed. The amended act was intended to reverse the undesirable consequences caused by previous forestry legislation (Nelville, 1985).

In 1979, the country launched the Community Forestry (CF) program. Twenty-nine hill and 13 Tarai districts were covered with the assistance of United Nations Development Program (UNDP) and the World Bank. A separate division was created in the Department of Forest to supervise the CF program. Coverage of CF has gradually expanded over the years, with nearly 60 districts currently involved.

Unique features of the program include raising the consciousness among villagers about the protection of forest resources, as well as increasing community awareness and participation. The CF aims at alleviating rural poverty by making people self-reliant through their active participation and mobilization.

The current Seventh Five Year Plan (1985-1990) emphasizes a massive plantation program. The plan has targeted 175 thousand hectare for new plantations. Of this, about 37 percent of the target is to be achieved by the government and public enterprises, while the remaining 63 percent will be covered through people's participation (NPC, 1985). Plantation programs are obligatory for places where felling of mature trees is permitted. Prizes will be awarded to the people with the best afforestation programs. The development of private contractual and Panchayat

Forests is emphasized. The plan aims to mobilize schoolteachers to disseminate practical knowledge about the planting and protection of trees. In addition, a pilot project on agroforestry was initiated. In order to meet the national demand for timber, firewood, and fodder within the next 25 years, a master plan is also needed. Emphasis should be on research related to the economic use of forest products. Such efforts are expected to form a basis for a conservation program as well.

Institutional Development

Both public and private sectors have been involved in the management and development of forest resources. The contribution of each sector over the past couple of years is discussed below.

Public Sector. The public sector's involvement in forest management began approximately 50 years ago when forestry expert Mr. J. V. Collier from the Indian Forest Service was called in as an adviser. He was responsible for promoting the export of sal wood (*Shorea robusta* Gaertn.) from Nepal to India by railway. A Timber Management Office was established and the responsibility of managing forests at the local level was entrusted to the Goswara Office. The main forest office was located in Kathmandu. Protection and management of forest was entrusted to the Timber Removal Section of this office. Various rules and standing orders were prepared and circulated to facilitate utilization of forest material and inspection (NAFP, 1976).

Following the recommendation of the forestry expert, the Forest Department was established in 1942. Three regional and 12 divisional offices were opened in different parts of the country. After a few years, the field offices were opened. In the late 1950s, the Forestry Institute was established to carry out training workshops for rangers and foresters.

In 1959, the Timber Corporation of Nepal was established. The Office of the Forest Resource Survey was opened two years later. The establishment of these institutions were assisted by the U. S. Agency for International Development. In 1960, forest working plans were prepared for three Forestry Divisions located at the Indian Aid Mission. In 1966, the Fuelwood Corporation was established for the supply of firewood. In the same year, the Forest and Pasture Development Program was implemented at Jiri. In 1975, Forest Products Development Boards were established in the Tarai and Inner Tarai. There were 11 such establishments by the end of 1975.

Other bilateral activities, including the Jiri Multipurpose Development Project, the Trisuli Watershed Multipurpose Development Project, the Forest Development Project, the Community Forestry Training and Afforestation Project, the National Park and Wildlife Preservation Project, the Integrated Hill Development Project, the Resource Conservation and Utilization Project, the King Mahendra Trust for Nature Conservation Project, the Nepal-Australia Forest Project, and several integrated rural development projects, were also launched.

Private Sector. The involvement of the private sector in forest management is not a new phenomenon in the country. For example, people in the Khumbu region have been controlling forest extraction for the

past several years. Although there is enough conifer timber around Thak Khola, arbitrary extractions are strictly banned. At the eastern edge of Ghasa, in the southern part of Thak Khola, and the area near Lethe, pine forests have been left untouched through this effort (Martens, 1983). Maintaining fodder trees in the hills and both fodder and commercial trees in the Tarai is commonly practiced by private entrepreneurs.

The government has realized the importance of private initiatives. Accordingly, the Seventh Five Year Plan provides incentives for the development of forest under private initiative.

RATIONALE AND OBJECTIVES

Statement of the Problem

The deterioration of the forest in the past few years is partly attributed to the inability of the marginal lands to meet the needs of a population growing by 2.7 percent annually. The growing number of livestock has compounded the situation.

The present rate of afforestation (about 7000 ha. per year) is far below the necessary planting rate. Estimates indicate that the planting should be at least 50,000 ha. and 120,000 ha. annually in order to sustain the fuelwood requirements for the years 1990 and 2000.

Despite several efforts, people are still uncertain about their role in forest protection. This attitude is partly caused by the lack of explicit rules regarding private plantations and their use. In fact, past efforts mainly concentrated on changing organizational structure rather than adopting ways for overall improvement. Very few policies are directed towards matching the attitudes, habits, and tree growing needs of local people. Although the design of forest plans were well conceived during the preparation phase, most of the forest areas in Tarai were haphazardly exploited because of political interests. Consequently, the regeneration and conservation efforts directed toward meeting future shortages did not display much progress.

Rationale

Many past forestry plans had very ambitious targets, but because of a lack of monetary resources as well as political commitments, they were unachievable (Eckholm, 1976). The working procedures involving the local villagers were rarely followed. Only after the initiation of the Community Forest Program, was emphasis placed on community participation. The increasingly critical situation in the Tarai produced this policy shift more than anything else.

The effectiveness of the new forest legislation approved by the government have yet to be evaluated. An analysis of the commitments made by local people in organizing and maintaining forest development activities is needed. This study describes the private initiative toward forest conservation occurring in Bhokraha village, with hopes that it can serve as a model for other villages.

Objectives

The broad objective of this study is to document the forest management practices at the grass-roots level. In order to accomplish this, the specific objectives are:

- Identify factors creating enthusiasm for involvement.
- Examine the process of obtaining cooperation for mutual benefit.
- Document the level of participation of members of different groups in Bhokraha village.
- Explore the attitude of nonmembers in the surrounding area toward the nonformal forest cooperative.
- Point out problem areas and suggest measures for improvement.

Limitations

This study is confined to analyzing the activities covered by a nonformal forest management group in the Sunsari District, which is now in its third year and covers 22 ha. The report focuses primarily on the problems experienced by the group and prospects foreseen for future development. Attempts are made to draw policy level inferences as well.

Methodology

The case study is based on first hand information gathered from a field survey. Discussions were held with cooperative members, non-members, panchayat leaders, and village elders. Of 45 members in the cooperative, 30 were randomly selected and interviewed. Twenty non-members households in Bhokraha village were interviewed to determine their attitudes toward the nonformal cooperative. Nine members belonging to a similar cooperative in Biratnagar were also interviewed. In addition to direct interviews and discussions, information was gathered through direct observation. To substantiate the study with additional information, documented materials were also reviewed.

THE SETTING

Location

Bhokraha village is located in Bhokraha panchayat, in the Sunsari District, Kosi Zone. It is approximately two 2 km. west of Inaruwa, the district headquarters of Sunsari, and 330 km. from Kathmandu. The village is accessible throughout the year by the East-West Highway. The village is bordered by the Sunsari river to the east, the Khuniya Dhar (stream) to the west, the Haripur branch canal to the north, and the East-West highway to the south.

Land Use

The Bhokraha village covers an area of 3600 ha., of which about 75 percent is under cultivation. Forest cover accounts for five percent, pasture 15 percent, and wasteland five percent.

Demographics

Bhokraha village has a population of 525 with an average family size of six. The majority of the inhabitants are Jhangad caste (50 percent), followed by Koiri (22 percent), Mushar (20 percent), and others (8 percent).

Economy

Agriculture and livestock raising form the economic base of Bhokraha. Many people are also involved in fishing or work as laborers. Given the easy accessibility of many important markets in the eastern region, some people work in business as well.

Paddy, wheat, and millet are the main staples; sugarcane, tobacco and oilseed are the other important cash crops grown in Bhokraha. The yields of these crops in metric tons (mt.) per ha. are as follows: paddy (2.3), wheat (1.5), millet (0.5), sugarcane (25.0), tobacco (0.7), and oilseed (0.6). Compared to the average yields in the eastern Tarai, the yield of the above mentioned crops are relatively high, with the exception of millet. Each year, Bhokraha village produces surplus food grain, which is usually sold at the bazaar in Inaruwa.

Buffalo, cattle, and goats are commonly raised, with average holdings of 1.5, 1.7, and 3.0, respectively.

Forestry

Major types of wood and timber grown in the area are sal (Shorea robusta Gaertn.), sissau (Dalbergia sissoo Roxb.), semal (Bombax ceiba DC.), khair (Acacia catechu Willd.), and tanki (Bauhinia purpurea Linn.). On private lands, mainly bamboo and tanki are grown. Farmers cultivate trees on field boundaries and paddy walls. These trees are trimmed for livestock fodder.

Fuel Situation

The village of Bhokraha has many kinds of wood to serve its needs. However, because of increasing human and livestock population pressures in recent years, the village is now confronted with a fuelwood shortage of nearly 50 percent. This deficit is usually met by importing wood from the Mahendranagar village panchayat, 32 km. from the Bhokraha village. In order to obtain fuelwood, a villager must submit a request to the local Forest Division Office. Each applicant household is then issued a coupon to permit the collection of firewood once a year. The collection is allowed only from a specified area.

Some people bring firewood to the market illegally as well. In addition, villagers who gather grass for livestock also collect wood without the permission of the Forest Guard. At times villagers also use cow dung cakes to help overcome the fuel shortage.

THE NONFORMAL FOREST DEVELOPMENT COOPERATIVE-BHOKRAHA

Background

The Bhokraha Nonformal Forest Development Cooperative is the outcome of the realization of Mr. Ganesh Prasad Sharma, a legal practitioner in Biratnagar. Mr. Sharma has been interested in planting trees from his childhood. He was inspired by his farmer father to protect and conserve the forest. Mr. Sharma advocated the importance of planting trees to his friends. He insisted his fellow villagers think about the harmful effects resulting from deforestation. Ultimately, he was able to motivate some literate people of Biratnagar to found a cooperative in Bhokraha village, some distance away from Biratnagar.

Three years ago Mr. Sharma with several of his colleagues purchased 21.69 ha. of land at NRs.14,765 per ha. This amount was relatively cheap compared to the prevailing market price.

The money required for the land purchase was raised by those who could afford an instant down payment. Members unable to contribute cash immediately were given the opportunity to pay on an installment basis. These members are entitled to use their share of the property only after they have made all their payments.

At present, the land owned by the cooperative is in two plots. One plot with 18.74 ha., has been planted with 70,000 sissau and 500 tanki trees. The other plot has been covered by 1000 sissau.

The sissau survival rate is about 93 percent, while the survival rate of tanki is 66 percent. At present, the average height of the sissau is 2.5 meters while that of tanki is 3.5 meters.

Objectives

The major objectives of this cooperative are to preserve soil and improve the quality of the land, increase the foliage, meet fuel, fodder, and timber requirements, and to increase the level of income of the cooperative members.

Factors Influencing the Establishment of Cooperatives

Mr. Sharma spent almost one year convincing people to join the cooperative. Ultimately, he succeeded in attracting 45 members. The commitment of these members then further disseminated the idea of a cooperative in the area.

The cooperative has benefitted by the experience of Mr. Sharma. Prior to starting the cooperative, Mr. Sharma was involved in a similar program established by his family in the Chunmang village of the Dharkuta District.

The members who joined the nonformal cooperative are basically motivated by the hope of reaping benefits by utilizing land purchased at low cost. Though some members think they could start similar activities on their own, they are constrained by finances. On the other hand, they believe protection of the forest requires widespread participation be-

cause as the number of members in the cooperative increases, the chance of haphazard forest exploitation decreases.

People willing to join the cooperative are always welcome, as long as they complete all the required formalities. The new member has to bear the land costs as well as its development expenses (fencing, planting, and protection). Each new member must obtain at least ten dhur (0.017 ha.). Maximum size allowed per member is two bigha (1.35 ha.). Current holdings range from 0.135 ha. to 1.88 ha. The average size of holding per member is decreasing as additional members join. Surplus capital contributed by the new members is used to develop existing land as well as for the purchase of additional land.

Organization and Management

The cooperative involves all members in the decision making process. There is no formal committee represented by elected members. Mr. Sharma, the initiator of the program, is unanimously respected as the chairperson. All others have equal status as members. In order to protect the plantation, three persons are employed as field supervisors.

All members have faith in Mr. Sharma as the chairperson. His decisions have never been questioned because, before arriving at any decision, he consults the majority of the members to the extent possible. Major decisions are thus based on common consensus. Since the decisions are made in consultation with a majority of the members no one feels the need for a formal committee.

The members play an active role in suggesting ways to improve the system. They occasionally have meetings at Mr. Sharma's home. Major subjects covered by these discussions are: types of trees to be planted, plots to be covered by the planting thinning period, and forest protection methods.

Members enjoy explaining the benefits of forestry development to their fellow villagers. Greater neighborhood participation would help them protect their enterprise and would also assist their neighbors in meeting fuelwood and fodder shortages. The ideas of the cooperative are published in a local weekly, the "Bahas," out of Biratnagar. The importance and economic benefit of tree planting has been highlighted in the articles published thus far.

The members have contributed NRs.292,722 for fencing. The fence is barbed wire, with wooden and concrete poles. Total length of the wooden pole fence is 2100 meters, compared to 650 meters of concrete pole fence. Wooden pole fences cost NRs.7400 per ha. while concrete pole fences cost NRs.17,720 per ha.

Contributions for planting are collected on the basis of size of the land shared by the member, at NRs.44,300 per ha. Payment should be made no later than a few months after the land purchase, but before planting season. Thus, the payment period depends on the date of purchase or when the membership began.

Contributions are collected by the chairperson. Three collections have been made. The first collection was for the share of land, the

second for fencing, and the third for planting. Timing for the collections varies according how long the person has been a member. The last contribution will be collected when the trees are felled. In addition to monetary contributions, the members provide voluntary labor for fencing and planting.

A member who does not respect the rules and regulations created by the cooperative is subject to punishment. Initial mistakes and negligence are resolved through warnings. In extreme cases and only after several reminders, the offender is socially boycotted. This kind of punishment is rarely administered. Until now only one individual who did not pay his share despite his ability to do so has been boycotted. This person had been a Chief District Officer. He paid his contribution to buy land but did not pay for fencing and planting, for which he was punished. The cooperative has decided he has a right to the land but does not own a share of the plantation.

The field supervisors take care of the trees on a regular basis. They are given an honorarium of NRs.700 per month. Money required to pay the honorarium is collected by the chairman from members every month. The supervisors are provided with thatch-roofed houses located on the land itself.

Those who became members in the initial year pay the value of their share at NRs.23,600 per ha. Second-year members pay at the rate of NRs.29,500 per ha. (this figure was arrived at by including 25 percent annual interest on the initial cost of the proportion of land born by the members). Dues can be paid in installments, but 25 percent interest is charged.

The cooperative members belong to different occupational groups. Out of the 45 members in the cooperative, about 45 percent are service holders, while 30 and 25 percent are students and farmers, respectively. The group consists only of Brahmins, Chhetris, and Newars. None of the Jhagads, who constitute 50 percent of Bhokraha, are involved in the cooperative, as they are unable to bear the financial risk of such a venture. In addition the founder of the cooperative, Mr. Sharma, being a resident of Biratnagar, does not get along with all the ethnic groups residing in Bhokraha village.

The activities of the cooperative are recorded by the chairperson. The records include the disciplinary behavior of members, their ability to meet commitments, and defaults. Individual accounts of members, with income and expenditure details, are also maintained by Mr. Sharma. His accounting procedure is based on the double entry system. Surplus money is deposited in the bank.

Before each planting, the group holds a meeting and decides the species to be planted on each plot of land. Seeds are usually collected from adjoining forest areas. The cooperative has its own small nursery for sapling production. The field supervisors and the members take care of the nursery. Depending on need, technicians working with the Department of Forest may help. At present, only about ten percent of the plants at the nursery have failed to germinate.

Problems and Prospects

The cooperative is not free from difficulties, which are associated with regular management of the system. They are discussed below.

Noncooperative Attitude. Some of the members do not cooperate with the system for individual reasons. For example, one man asked to join the group. However, after entering into the group, he refused to pay the land development costs (fencing, nursery, planting, and protection). Consequently, the cooperative uprooted the plants from his plot.

The cooperative members have noticed noncooperative behavior of the Department of Forest and other allied agencies toward the cooperative. Nearly three-fourths of the respondents mentioned they had problems finding wooden planks for fencing. They said their request was not accepted by the Timber Corporation in Bhadrapur because it had to fulfill the demands of other areas in the country. Consequently, they had to adopt the more expensive alternative of constructing concrete poles.

Opinion Differences. The members have not experienced any major disputes thus far. However, differences of opinion exist. Some members doubt the ability of government to protect such a private initiative. They feel that planting trees on private land could be a risky business if government changes its emphasis in future. At the same time, there are others who believe increased government protection will come in the future. They feel that since the government is well aware of the deteriorating forest condition, and it is only through the involvement of private initiative at the local level that success can be achieved. These differences in opinion have hampered the design of future strategies for the cooperative.

Some of the members have lost their patience waiting six years to obtain their returns. They preferred the cultivation of food grains so as to meet their immediate needs.

Planting strategy is another area of dispute. Mr. Sharma is in favor of planting trees densely, one meter apart, so some can be harvested after six years for fuelwood. Other members do not agree and advocate a minimum distance of about two meters apart to increase the long-run outcome. Ultimately, this problem was solved through discussion with the technicians of Forest Division and Mr. Sharma. The first alternative was accepted.

Benefits. The cooperative has not obtained any significant return because the trees are still immature. Each year, a gross value of NRs.10,000 received from the sale of thatch (khar) to local villagers. Fuelwood products are expected within a few years. The timber harvest, however, will require a long rotation period. Altogether, 10,700 plants are grown per hectare. Almost 50 percent of the plants will be felled in the sixth year of planting for thinning purposes. These trees, if sold at the prevailing market rate of NRs.50, will provide a return of NRs.267,500 per hectare. This amount will cover almost all the costs of purchasing and developing the land. In the tenth year, 50 percent of the remaining trees will be felled. These trees, if sold at NRs.100 (the minimum price at the local market at present) will provide a return of NRs.267,500 per hectare.

The sissau tree normally grows to a diameter of 16.5 cm. in ten years and 33.0 cm. in 20 years. In order to create a good market for their timber at maturity and increase their profit margin, the cooperative members might establish a saw mill.

Average yields of commonly grown crops such as paddy and wheat in the area are around 1.9 mt. and 1.3 mt. per hectare, respectively. The total monetary return of these crops is far less than the returns from tree planting. This has become an encouraging factor for many members.

Beside monetary benefits, the cooperative helps ameliorate the fuelwood, fodder, and timber problems. It also contributes to the control of bank erosion of the Sunsari stream. The quality of the land is also being improved.

The cooperative has had an effect on the surrounding villagers as indicated by the number of individuals requesting saplings to plant on their land. The cooperative, however, has not been able to keep up with these requests. Similarly, the local panchayat members are also giving attention to planting trees on wasteland. The panchayat has been given about 12 ha. of wasteland to rent to individuals. Presently, the land occupied by the individuals varies from one dhur (182.25 sq. ft.) to one katha (3645 sq. ft.). Rent charged for ten dhur of land is NRs.5 per month.

Encouraged by the Bhokraha village experiment, similar nonformal cooperatives have been formed in three areas of Biratnagar in the Morang District. Total area covered these cooperatives is 23.37 ha., with 297 members participating in the effort.

Future Plans

The future strategy of the cooperative is hampered by the differences among members regarding possible changes in government policy in the future. A majority of the members want to continue activities as informally as possible. In order to create a feeling that "all are equal," they have emphasized the need for all members to hold an equal share.

CONCLUSION

Forest management and conservation must encompass protection, production, and utilization of forest products. Without integrating all these activities, the task of optimizing social welfare from this sector will be difficult. None of the measures, such as extension of Panchayat Forests and Panchayat Protected Forests or establishment of local property rights in isolation will end deforestation (Wallace, 1981, 1985). Unless and until the country has a commitment from the local villagers, the chances of protecting forest resources will be slim. In this context, the Bhokraha cooperative can be considered a milestone as an example of private initiative.

RECOMMENDATIONS

Despite the enthusiasm and interest of the members to develop the Bhokraha cooperative, some inadequacies are apparent. In order to overcome them, the following improvements are desirable.

1. The dependency of the members on the chairperson alone should be avoided and the responsibilities should be divided among the members by forming a management committee. The Bhokraha cooperative has the advantage of being small. This facilitates the decision making process, but the cooperative is dominated by one individual. This situation may not last if the number of members and amount of land occupied by the cooperative increases.

2. The wasteland rented out by the local panchayat should be given to interested persons on a cooperative basis rather than letting it on an individual basis.

3. Legislation is needed to determine the status of cooperatives in the eyes of law. Presently, there is no legislation to protect the forests developed by nonformal cooperatives.

4. Loans should be extended to nonformal cooperative activities.

5. Concessional tax measures should be enacted to create incentives developed for such undertakings.

6. The government should contribute to the information dissemination process by organizing demonstration visits and publishing documents on cooperatives from time to time.

REFERENCES

- Agricultural Projects Services Center (APROSC). "Draft Report on Nepal's Perspective Land Use Plan." Kathmandu, Nepal: APROSC. 1985.
- Asian Development Bank, Manila (ADB/M). Nepal Agriculture Sector Strategy Study, Vol 1. Manila, the Philippines: ADB/M. 1982.
- Eckholm, Erik. Losing Ground: Environmental Stress and World Food Prospects. New York: W. W. Norton and Company, Inc. 1976.
- Martens, Jochen. Forests and Their Destruction in the Himalayas of Nepal. Kathmandu, Nepal: Nepal Research Center. 1983.
- National Planning Commission (NPC). "Summary of the Seventh Plan (1985-1990)." Kathmandu, Nepal: NPC. 1985.
- Nelville, G. A. "Report on Community Forestry." Kathmandu, Nepal: Integrated Hill Development Project. 1985.
- Nepal-Australia Forestry Project (NAFP). "Nepal's National Forestry Plan." Kathmandu, Nepal: NAFP. 1976.
- Wallace, Michael B. "Solving Common Property Resource Problems: Deforestation in Nepal." Ph.D. dissertation, Harvard University. 1981.
- . "Community Forestry in Nepal: Too Little, Too Late?" Paper presented at the seminar, "Managing Renewable Resources: Historical and Contemporary Perspectives," sponsored by the Japan Center for International Exchange and the Agricultural Development Council, 24-28 June 1985, at Sapporo, Japan.

Papers in this Series:

1. K. H. Gautam, "Private Planting: Forestry Practices Outside the Forest by Rural People," December 1986.
2. Govinda Prasad Devkota, "A Viable Energy Alternative for Rural Nepalese Villages: A Case Study of Gobar Gas," December 1986.
3. Uma Kant Silwal, "Attitude, Awareness, and Level of People's Participation in the Community Forestry Development Program, Nepal," December 1986.
4. Kamal Raj Paudyal, "Noncommercial Cooking Energy in Urban Areas of Nepal," December 1986.
5. Laya Prasad Uprety, "Fodder Situation: An Ecological-Anthropological Study of Machhegaon, Nepal," December 1986.
6. Ram Kumar Sharma, "Nonformal Forestry Development Cooperatives: A Case Study of Bhokraha Village, Nepal," December 1986.
7. Bharat Raj Joshee, "Improved Stoves in Minimization of Fuelwood Consumption in Nepal," December 1986.

Winrock International Institute for Agricultural Development was established in 1985 through the merging of the Agricultural Development Council (A/D/C), the International Agricultural Development Service (IADS), and the Winrock International Livestock Research and Training Center. Winrock International's mission is to improve agriculture for the benefit of people--to help increase the productivity, improve the nutrition, and advance the well-being of men, women, and children throughout the world. Winrock International's main areas of emphasis are human resources, renewable resources, food policy, animal agriculture and farming systems, and agricultural research and extension.

Winrock International Institute
for Agricultural Development

Route 3, Petit Jean Mtn.
Morrilton, AR 72110-9537
U.S.A.

P.O. Box 1312
Kathmandu
Nepal