

FORESTRY RESEARCH PAPER SERIES

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**COMMUNITY FORESTRY: AN ASSESSMENT OF
PEOPLE'S COOPERATION IN MAGAPAUWA**

I. P. Neupane

**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.

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CONTENTS

	Page
INTRODUCTION	2
Village Setting	2
Objectives	3
DEFORESTATION AND CONCEPTUAL DEVELOPMENT	3
Conceptual Development	4
Reversing the Trend	5
THE PROGRAM	6
Establishing a Nursery	6
Plantation	7
People's Contribution	8
Difficulties with Program Extension	9
Conservation	10
BENEFITS OF THE COMMUNITY FORESTRY PROGRAM	10
LOCAL ORGANIZATIONS AND FUTURE PROSPECTS	12
Panchayat Protected Forest Conservation Committee	13
Panchayat Forest Conservation Committee	13
Responsibilities of the Forest Conservation Committee	13
RECOMMENDATIONS	14
REFERENCE	15

LIST OF TABLES

Table 1. Accessibility of Forest Products and Family Requirements	5
Table 2. Plantation Statistics	7
Table 3. Villagers' Contribution	9

COMMUNITY FORESTRY: AN ASSESSMENT OF PEOPLE'S COOPERATION IN MAGAPAUWA

I.P. Neupane*

INTRODUCTION

In Nepal, forests are the source of many basic needs of the population, providing timber for shelter, fuelwood for cooking, and food and fodder for the animals which provide them with manure and milk. There has been an alarming decline in Nepal's forest cover, particularly over the last two decades. Area estimates vary but the magnitude of the devastation is indicated by all.

The community forestry program, which involves local people, has had some success reversing the trend of deforestation. Legislation enabled communities to afforest land that the government promised to hand over to them. Prior to 1978, there was limited technical manpower and a lack of incentive. The success of the program depends upon effective manpower utilization and conservation action on a massive scale.

Village Setting

The study is based on information gathered from discussions with the pradhan pancha and village leaders of Chisapani village. Fifteen households (17 percent) were selected at random and asked to complete a brief questionnaire.

The villages of Magapauwa Village Panchayat (MVP) are located on the lower southeast facing hill slopes with Ward 1 at the top. Slender terraces have been cut into the lower slopes for paddy cultivation. The community forestry program under study was launched in Chisapani and part of Hile in Ward 1. Nestled on the upper slopes, Chisapani has 90 households built in clusters over the scattered terraces.

The total population of the panchayat (Population Census, 1981), is about 5,000. It is reported by panchayat leaders that the female population outnumbers the male in the ratio 55:45. The average family size of the selected households is 5.6. According to the pradhan pancha, 75 percent of the men between the ages of 15 and 60 must work outside the village. They find work in construction, cart pushing, or portering, in Kathmandu. A few do similar jobs in Indian cities, in Darjeeling, Assam, and Manipur. Wages are higher in India and the lure of those jobs is strong, but local seasonal work allows them to be near their families and provides security for themselves and their families.

The panchayat is made up of diverse ethnic groups. Unusually Ward 1 is exclusively Newar. In the whole panchayat, the main groups are Brahmin, Chhetri, Tamang, and service castes: leather-workers, blacksmiths and tailors. Except for the Tamangs, who are Buddhist, the people are Hindu. Despite the diversity, it is said that the society has never been agitated by conflicts and animosity among ethnic groups.

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Agriculture provides the livelihood for all the villagers. The average land holding per household of 0.65 ha is entirely unirrigated upland. There is not a single business shop although the local market of neighboring Katakuti Panchayat is close to Chisapani Village. Illiteracy is believed to be much higher than the national average; educational opportunities in the panchayat are limited to a recently established secondary school which has about 400 students up to the tenth grade.

Maize and millet are the staples, supplemented by wheat. Potatoes are grown as a cash crop and are the principal source of farm income. In all agricultural produce, excluding potatoes, the panchayat has a food deficit and grain has to be purchased from outside. From the sale or exchange of potatoes, the people buy grain and other necessities. A substantial quantity is marketed in the bigger villages, and Kathmandu.

Livestock raising is an inherent part of the district's activities. The average of seven animals is kept by each household. A cow, an ox, a cow and two or three goats and/or sheep constitute the average holding.

Objectives

This an investigation of a forestry program, launched with external assistance, in Magapauwa Village Panchayat in Dolakha District. This case study seeks to:

- provide an overview of deforestation in the village;
- observe peoples' awareness of the community forestry concept and the implications of deforestation and reforestation;
- assess the level of cooperation and participation of the local people in different stages of program implementation;
- identify the expectations of the people and the benefits of the program as they see them, at present and in the future; and
- study peoples' willingness and ability to take responsibility for the program on a self-sustaining basis, and the role of local organizations that plan and implement forest conservation.

DEFORESTATION AND CONCEPTUAL DEVELOPMENT

The depletion of the forest occurred gradually. The lower slopes, relatively better suited for cultivation, were first cleared by the forefathers of the present villagers. As the population increased, the devastation became severe as fulfilling their growing need for cropland, fuelwood and fodder became more difficult.

The north facing slope is not inhabited because it is too steep, but when the south slope was devoid of tree cover, the people began to cut the trees here. The recent introduction of the forestry programs of HMG now limits that deforestation. Following the establishment of panchayat protected forest there, the forest has generated over the last four or five years.

The remaining trees in the depleted areas include Kharsu, Bangset, Guras, Kharane, Racthan, Chilaune, Kafal, and Katus, most of which are important fodder trees.

In the past, the burning of wood for cooking and heating was necessary for survival of the people. They used the heaps of ash as organic manure for potatoes. The villagers still burn firewood 24 hours a day in the winter. As such, fuelwood requirements are among the highest although scarcity in recent years has forced them to reduce consumption. One village leader made an illuminating comparison between past and present. A big, thick tree, that in his father's time was burned in two or three weeks could last a family a year now.

When a death occurred in the village, at least three trees were cut to provide for the funeral pyre. Now, villagers voluntarily contribute wood from their houses. They are frightened that if deforestation continues, corpses will have to be buried in the future, which would be a crisis in religious custom.

In the flat pasture land, deforestation is now in its last stage. Roots of previously felled trees are taken for fuelwood, although removing them is hard work. On already cultivated land, the panchayat forest committee has granted permission for this although they also caution against harming any freshly planted saplings.

Conceptual Development

It was not until 1972 that the villagers began to reassess the situation. They had been indifferent to the implications of deforestation and reforestation. The Forest Act of 1961 did little to repair the damage done by the nationalization of the forests in 1956, which has been blamed for the removal of incentives for rural people to conserve forest resources. Both acts encouraged wanton forest destruction before the government could enforce their provisions. The panchayat forest and panchayat protected forest rules in 1978, and the amendments of 1980, did not achieve all that had been envisaged.

In Chisapani and Hile, the idea of reforestation took shape before the enactment of the panchayat forest legislation. The year 1972 is marked in the panchayat as the start of the endeavor to convert desertified land back into lush forest. The effort was initiated by the village elites. A forest committee, not formally registered, which consisted of 30 to 40 members of the village, was formed to determine working procedures. It was a village level program and all households were required to participate. Each group of households was responsible for previously identified areas and given a work schedule for tree planting. Each household had to plant 11 trees using cuttings taken from the adjacent forest. Priority was given to fodder varieties. All went well and after the first mon-soon, pitting and planting was done side by side for two days. More than 800 saplings were planted on pastures in Chisapani.

Unfortunately, the endeavor began to fail, causing disappointment. Within weeks of planting, the saplings became yellow and failed to take root. The committee lost its credibility and failed to take any protective measures that would have conserved the few plants which were growing well. All that came out of it was that the people experienced collective

participation and had grown conscious of the need for reforestation activities.

The cause of their failure was technical. Before planting, nobody checked that the pits were well done, or that the correct species were being planted in the appropriate season. Also, bigger saplings which had been planted in anticipation of a quick yield were uprooted.

However, all the villagers exhibited a high level of awareness of the growing shortage of forest products and its implications. Collecting a headload of fuelwood or fodder from the forest now takes a full day and it may get worse. Both in terms of distance and availability of forest products, the forest is becoming more inaccessible every day. Table 1 gives some data on the use of these products and the distance that must now be travelled to obtain them.

Table 1. Accessibility of Forest Products and Family Requirements

Distance to timber forest*	-	6.00 km
Distance to fuelwood forest	-	0.75 km
Distance to fodder forest	-	3.00 km
Average annual fuelwood requirement per family	-	2520 kg
Average annual fodder requirement per family	-	3300 kg

* All figures are approximate
Source: Field Survey

Local people have expressed a desire to increase their income through animal husbandry for which many fodder trees must be planted. Many would also like to plant fruit trees on their land as a private source of income.

As deforestation in this panchayat is a fairly recent result of the demand for forest products and it has mainly taken place on the gentler slopes, there have not been any major landslides. However, several villagers mentioned the possibility of landslides, soil erosion and reduced soil fertility adversely affecting crop production. One notable chain reaction of the heavy deforestation has been a decline in the number of livestock that can be kept due to shortages of fodder, which has led to lower quantities of manure being available as fertilizer. Soil fertility has declined as the top soil is washed away by the rains, and the farmers have less and less to refertilize it with. The crop land is losing its ability to absorb water and gullies have formed.

Reversing the Trend

The last decade has been a period of transformation. Much has been achieved in terms of reforestation, and the highest levels of awareness have been reached by the local people. Over a period of five years, community forestry activities has expanded rapidly to more than 40 panchayats in the two districts of Sindhupalchowk and Dolakha.

IHDP's activities began in 1978, before community forestry was legislated. The operational schedule was based largely on individual panchayat surveys. Priority was given to panchayats in which inhabitants exhibited enthusiasm and a willingness to cooperate, because IHDP emphasizes local participation and voluntary labor. In Magapauwa Panchayat, tree planting began in 1981. The plantation of 7000 pine seedlings heralded the beginning of a program here, and it is now showing results.

THE PROGRAM

Establishing a Nursery

Once the decision to operate a forestry program in Magapauwa Panchayat was made, the inhabitants quickly went into action. The panchayat first needed a nursery and the assurance of a large amount of volunteer labor prompted villagers to form another village level committee to work out work procedures.

An appropriate site had to be selected for the nursery. It had to be near a permanent water source, near the proposed plantation site, and on not too steep a slope facing the right way. Finding possible nursery land is the responsibility of the village committee, and then the IHDP makes the selection after examining the proposed sites thoroughly. In MVP the land chosen was conveniently adjacent to the plantation site and was Guthi land (trust land assigned to religious or philanthropic institutions), so no private land was needed. The land covered an area of about two ropanis (one ropani equals 0.13 acres) and had the capacity to grow 50,000 seedlings of different varieties in a year.

IHDP policies clearly state that full volunteer support should be provided by the panchayat during the establishment of the nursery. The village forest committee is responsible for mobilizing voluntary labor by motivating people to become involved in the community efforts. In the initial stages, committee members and the nursery foreman held group discussions and individual conversations to persuade people to cooperate in the program. A moderate monetary incentive was put forward to secure enough labor to construct the nursery. The committee requested a minimum of two days labor per household in Ward 1 and part of Ward 2. It was decided that those who worked for more than two days would receive a wage at the daily rate of NRs.5, for half the total days contributed. For example, those who worked for 30 days were paid for 14 days (half of 30 - 2) which amounted NRs.70. Many villagers worked a certain number of days and then dropped out.

Six hundred voluntary labor days were sought mainly for hauling boulders to build for the boundary wall and prepare the land. Villagers also contributed bamboo and thatch for the construction of a shed in the nursery. Technical guidance and supervision was provided by project staff, who stayed in the panchayat for about a year. All construction work was completed within 32 days including the small shed for the watchman and nursery workers.

Expense was kept to a minimum and it has been calculated that the nursery was constructed for less than NRs.1000. Apart from labor costs, only two bitumen drums to be used for storing water, a polyethylene pipe about 100 feet long were paid for in cash.

Plantation

One of the responsibilities of the panchayat forest committee is to help the project's technical team to demarcate the area for plantation so that no problems arise regarding ownership. It is necessary that the plantation does not involve private land.

In Magapauwa, a technical team sent from the project visited the area to consult the local people. It was originally envisaged to set aside about 3000 ropanis, including all the pasture land and some thin existing forest. Everyone was enthusiastic to decide on a site but when planning was initiated there were some stiff confrontations as not all the villagers gave their consent to use the whole of the chosen area for planting. Opinion was divided on which area should be forested and which should be pasture. They did not want all the land to be forested because they wanted to raise and graze animals. However, if the plantation was done according to the desire of the people, it would be in several patches. This did not seem to the committee to be a good idea and they were backed by the technicians from the project office. Eventually, the committee decided to reforest a wide area that included both private and government land. The private holding was not good for cultivation or commerce. A final decision was made to bring the whole area under control and plant in yearly phases so that grazing animals was possible in the unplanted portions for several years.

Those whose land might be involved in the program demanded compensation. Since IHDP makes no provision for monetary compensation, the only possibility in such cases was that those who sacrificed land would be given priority when there were some employment opportunities in the program itself. In this area, about 40 households agreed to allow 100 ropanis of their private land to be used for plantation. They were convinced of the potential benefits of plantation and agreed not to make any sort of claim after the program had been implemented.

Starting in 1981 with the plantation of 7000 pine seedlings, the program achieved much in a four year period. There has been tremendous growth of most of the 200,000 seedlings that were planted, mainly of fodder and the pinus varieties: Pate Sallo, Rani Sallo, Gobre Sallo, Khote Sallo. Plants of the first batch have grown to 12 feet giving the impression of what will be dense forest. The estimated survival rate is as high as 90 percent for all species except Gobre Sallo and Chanp, which failed to grow well probably due to unsuitable soil and climatic conditions. Other pinus seedlings, excluding Pate Sallo, have shown some, though retarded, growth.

Table 2. Plantation Statistics

Painyo (Fodder)	-	100,000
Pate Sallo (Timber and Fuelwood)	-	20,000
Rani Sallo (Timber)	-	70,000
Gobre Sallo (Timber)	-	42,000
Khote Sallo (Timber)	-	1,200
Chanp (Timber)	-	500
Total		233,700

A group of 25 households in Chisapani are presently constructing a stone wall about 400 meters through the plantation, to create a permanent outlet through which they can take their animals to the adjacent pasture land. They have been working for months, hauling stones and building the wall and it will take another two months to complete it. There is no outside contribution or monetary support for their work which would have been almost impossible without the mutual understanding and cooperation of the people.

People's Contribution

Since the beginning of the forestry program in MVP, villagers' participation has become an inherent part of its success. It is negligible in monetary terms but is generous in land and labor. They have also assiduously followed the committee's rules and guidelines regarding conservation and use of the forest.

The labor contribution during the plantation of seedlings each year is vital. Unfortunately, because of a lack of records of volunteer labor it is impossible to give exact figures on the annual labor contribution; it depends largely on how labor has been mobilized by the panchayat forest committee. With the revision of the working procedures of the program, individual involvement can now be different each year.

In 1981 7000 pits were dug by the villagers under the guidance of the project technicians. They were not paid. The pits must be dug before the monsoon and the standard pit size required is 1 cubic foot. Almost all the existing pits were dug by the villagers of Ward 1.

Seedling plantation is the responsibility of the project since it requires technical knowledge which the villagers lack. Village laborers are hired and they work under the close supervision of the chief foreman and assistant foreman of the nursery. The latter two must be from the village panchayat where the project is located. They are selected on the basis of their ability to persuade and encourage others to work, their energy levels and enthusiasm, and their age, which must be between 25 and 35 years. They are selected by the village committee and trained for three weeks by the project team. Their role as communicating agents between project and village is particularly important.

The father of the present chief foreman of the nursery supervised the panchayat protected forest for two years. He did that work without salary but it was understood that in return his son would be guaranteed the job as nursery chief after him. Now the panchayat forest committee plans to employ him permanently by raising NRs.10 per household per year from the 90 households of Ward 1 to pay him an annual salary.

In 1982 seedlings were grown locally, in the nursery, and the plan was to transplant 50,000. The villagers again contributed unpaid labor for a minimum of two days per household. Depending upon the manpower available in a household, both men and women contributed. Those households that had no working members were required to substitute by hiring labor. At least 200 pits had to be dug by each household; this was expected to take two days but most of the workers took longer.

In the planting season of 1983, the working style changed. Other panchayats were having difficulty obtaining volunteer labor to dig the pits, and to avoid this problem in MVP, the project authorities temporarily hired workers from Chisapani on a daily wage basis. This became the responsibility of the nursery foreman and he did not have difficulty finding people. When this became apparent, the committee ordered that all those who wanted to work for a wage, must contribute a few days of voluntary labor. In the end, despite provisions for wages in the budget, a significant amount of free labor was secured from the villagers. Priority for hired labor was given to the poor and disadvantaged, those whose land was being used for plantation and those who had contributed the most free labor and help to the program. The committee tried to vary the people that were hired in order to share the opportunity to earn money among all interested villagers.

There are certain advantages to the new working system: villagers now have local jobs, which benefit them more than being employed on a seasonal basis outside the panchayat; the quality of work improved because of the responsibility felt by the workers as employees; and the planting target was easily attained, as the work progressed on schedule.

The survey of 15 households in Chisapani showed that the contribution of villagers was significant not only in the program activities but also in other village development efforts. Table 3 shows the people's cooperative nature and their generous support for the village program.

Table 3. The Villagers Contribution

Nursery construction per household	8 days
Pit digging per household	7 days
Others (eg. school construction) per household	5 days
Cash donation for the school per household*	NRs.200
Total pits dug through voluntary labor	80,000

* This contribution was made only by a limited number of households in better financial positions. Others, who could not afford a cash donation provided free labor.

Source: Field Survey.

Difficulties with Program Extension

When it was decided to enlarge the area in which the seedlings were planted, some women alleged that putting more land under forest would cause severe problems. The tussle between the women and the nursery people reached a climax when the women attempted to throw away the seedlings that had been bought for planting. It became difficult for the workers to continue to work so they went to the pradhan pancha and asked him to settle the issue. According to the pradhan pancha many villagers requested him to restrict the plantation to a limited area only. He observed that some of those who objected were dissatisfied because they had not been employed as forest workers by the committee. Apart from

these few instances, there have not been any confrontations, and those who did protest now feel ashamed and have not caused trouble again.

Conservation

Efforts of the villagers to conserve the panchayat forest, which lies on the other side of the village area, deserves appreciation. In this forest of mainly fodder plants, there has been encouraging growth of regenerated trees, shrubs and greenery. Conservation practices restricting the entry of animals or human beings for fodder or to collect fuelwood have been carefully maintained. A watchman was appointed by the panchayat and if anyone is caught abusing the forest he is taken to the pradhan pancha and fined. The forest protection committee charges fines ranging from NRs.5 to NRs.50 per stolen plant depending upon the extent of the abuse. In case of a new plantation, if the destruction is done knowingly with the intention of harming the program the amount of fine could be higher. If the destruction is very heavy, the culprit is taken to the forest division office for necessary action.

BENEFITS OF THE COMMUNITY FORESTRY PROGRAM

Investment in a forestry program is unlikely to produce results quickly. Quantifiable benefits begin to be reaped when the trees reach full maturity. Direct benefits come mainly in the form of fodder, fuel and timber availability, and ideally are spread over a period of time. The indirect benefits are significant in that they help to raise the status of the beneficiaries, and protect them from a variety of natural disasters due to environmental degradation. Some benefits are felt as early as the start of the program. The areas of the potential benefit to the local people and panchayat are analyzed below.

Future Assets: The community forestry program is an investment program that produces multiple future benefits. The most obvious benefits are the provision of forest products. Pine trees are always in demand for roofing timber. The timber shortage has made re-roofing a very expensive task, at about NRs.4 per 2 x 0.5 ft plank. Due to the monsoon rains and wind, many rural people have to replace their roofs once a year. Therefore, they fervently hope to have sufficient pine trees growing locally for their needs sometime within the next 10 - 15 years.

When the plantations reach the stage of self-sustained growth, the rural people also hope to have a continuous and adequate supply of fuelwood. It has been estimated that upon full maturity, each hectare of forest will yield about 5000 kg of fuelwood per year (IHDP, 1978). The total planned area of forest in MVP is 150 ha, which will theoretically provide 750,000 kg of fuelwood per year. This far exceeds the present requirement of the households in the panchayat. Therefore, there may be some significance to the villagers in selling the excess wood. At a rate of NRs.20 per kg in the hill market (double the prevailing rate), NRs.6 million could be earned annually. Even without sales, the labor time saved by not having to walk kilometers to find wood is in itself quite considerable. The time can be spent more usefully raising animals or cultivating crops and taking care of their land. Members of the family would be free to spend time looking after children and the house. If a small amount were sold, the money could be used to expand and maintain

the nursery so the forest is not allowed to deteriorate to the level it was ten years ago.

At the present rate of expansion, the cost of establishing and maintaining a plantation for five years is NRs.2700 per ha, assuming some voluntary labor. If costs increase by 200 percent over the next 20 years, NRs.0.8 million would be required to replace trees then. Compared to possible financial benefits, this cost could be covered within two years. It has been estimated by IHDP experts that even at the intensive maintenance level of one person per ten ha, money from the sale of fuelwood at NRs.1.50 per 25 kg load would be sufficient to cover costs. Alternatively, maintenance could be reduced and the money used to support other needs.

Even without the monetary benefits, the renewed forests will still be a permanent source of grass and fodder, if well maintained. This will have far reaching effects on animal husbandry (IHDP, 1978).

Fodder and Timber Trees on Private Land: One of the benefits to the local people of the forestry program is the opportunity to obtain seedlings for planting on private land. Through the nursery, a variety of seedlings are distributed free of charge. There are no stringent procedures; the promise of the person requesting them that he will conserve and grow them is sufficient. Demand is also compared to the person's known land assets and status. The average number of seedlings planted privately per household is 43 but some have been known to ask for 200 from the nursery. Previously, the villagers were asked to pay 25 paise per pine seedling and 50 paise per fodder tree seedling and the money raised went into the committee's funds. Demand for seedlings fell sharply, so the charges were abandoned. More than 100 households have now planted up to 5000 seedlings privately although the survival rate of these trees is only about 50 percent.

In this last year (1985), the nursery has started to grow vegetable seedlings for private distribution. Onion, garlic, cauliflower, cabbage, and chilli seedlings are grown and sold to villagers for five paise per seedling. The people are confident that they can produce enough vegetables for commercial purposes and increase their income. The nursery foreman attended a three day vegetable farming training session at the project office. It is hoped that with the locally available technical support, villagers will be able to carry out intensive kitchen gardening, which may also improve their vegetable consumption pattern.

Employment Benefits: Village leaders consider the monetary benefits of the employment opportunities generated by the program to be significant. Seven people from the village are employed by the project as the nursery foreman, assistant foreman, forest workers and guards. These appointments are for the duration of the project and may last another five years or more. In the nursery, three people are employed now: one chief foreman and two assistant foremen, who are paid at the daily rate of NRs.12, NRs.10 and NRs.8 respectively. The other four full-time employees of the project are forest workers who receive a daily wage of NRs.8. There are also seasonal opportunities during the pit-digging and planting seasons when between 10 and 15 people are employed for about 90 days in the year. It has been roughly estimated by the pradhan pancha and nursery foreman that since the start of the project, there has been

an annual flow of money into the village amounting to between NRs.30,000 and NRs.50,000.

Development of Village Level Technical Expertise: IHDP has emphasized the development of local level technical expertise throughout the course of the project. Available, well-trained technicians will be an asset for the panchayat in the future. With its own technicians, the chances that improved conservation practices will be undertaken in the panchayat are much higher. If a nursery needs to be built in the future, the panchayat may not need to depend on outsiders for support. Even after the termination of their employment, village level technicians are expected to provide support to the local people in the future.

Soil Protection: Villagers feel that after just three years of planting there is a marked difference in the rain absorption capacity of the soil. In the past, when the pasture was completely without trees and shrubs, the surface soil was being washed away by the unabsorbed monsoon rain. This caused serious flooding on the lower cultivated terraces. Sometimes the floods were severe enough to cause animals to be swept away.

Grass Cutting: Due to conservation practices, fodder vegetation and grasses have grown considerably even on the new forest land which is open to the villagers for cutting. Grass cutting is allowed there particularly during the festivals so that the people need not travel far on those occasions to find fodder. Most households fetch a daily load of grass from the plantation area. They are required to raise their animals in sheds, but are still satisfied with the situation.

In the first year, the panchayat forest committee planned to tax grass cutting at the annual rate of NRs.2 per household from the two village wards. Over NRs.40 was raised but some people refused to make such a contribution and the committee later withdrew the tax. All those who had already made the payments were refunded. Now there is no cost to the people to cut grass in the new forest area.

Spread Effect: The success of the forestry program in MVP has created an interest and awareness among the people in the nearby villages. They began to approach the project authorities asking for similar treatment. This shows that a successful program is a strong motivation for the whole community to volunteer cooperation in any kind of resource conservation and utilization activities. One of the great advantages of the program is the potential for creating enthusiasm for forest conservation and development activities in other areas that will significantly accelerate the revival of Nepal's forests.

LOCAL ORGANIZATIONS AND FUTURE PROSPECTS

The role of local organizations in shaping a program in the desired direction must not be underestimated, particularly when the program is related to conservation and utilization of village resources. The involvement and participation of the people at every stage is essential. The local committee has the power to determine how cooperation is sought, resources are conserved, and benefits are distributed.

Under IHDP policy, once a panchayat is approved to implement the forestry program, the village must form a Panchayat Forest Conservation Committee (PFCC) that will take responsibility to conserve, develop, and monitor utilization of the forest resources all the time. These committees are often made up of village elites and influential leaders. The pradhan pancha is usually elected chairman and there are normally 15 members though sometimes more. Once a community forestry project is initiated, communication between the project and the panchayat is maintained informally, through the rangers who supervise the work, and formally, through the committee of which the ranger is secretary.

Panchayat Protected Forest Conservation Committees (PPFCC)

In MVP, at least three forest conservation committees have been formed in the last 10 years. The objectives and responsibilities of these committees were alike: forest resource conservation, protection and development. The latter two committees were formed using formal registration procedures; one was at panchayat level and the other at village level. MVP has a panchayat level committee formed under the chairmanship of the pradhan pancha in 1981, with 29 members chosen from all wards. Each ward has a sub-committee that is responsible for the forest area within that ward. Their responsibilities include supervising and controlling old forest and instructing, motivating, and mobilizing the people in afforestation or reforestation works. They have a crucial role in encouraging local participation at the grass roots level. Meetings are held usually during the same period that panchayat committee meetings are held. The cutting of any forest products is strictly forbidden but the committee has identified areas from which villagers can collect minimum amounts of fodder. The collection of timber and fuelwood is even more strictly controlled.

Panchayat Forest Conservation Committee (PFCC)

The PFCC has 15 members and was formed in accordance with IHDP's policy of creating local institutional support for their forestry program. The committee members are from Chisapani and Hile village, and about 30 percent are women. The involvement of such a large number of women is indicative of this committee's unique approach. The idea is based on the consideration of women's role and involvement in deforestation or abuse of forest plants. It was the contention of the other villagers that women are prone to neglect and violate the rules and controlling measures governing cutting fuelwood, fodder, and grasses, because women take the responsibility to do these tasks. Therefore, it was agreed that women should be given the responsibility for conserving the forests, which would also help to create awareness among the entire female community.

More informal than formal meetings are held by the committee. Very few formal meetings were held over the last two year period but informal discussion meetings were held frequently. Often, during the plantation season, the meetings take place at the house of pradhan pancha and the members have to sign to record their attendance.

Responsibilities of the Forest Conservation Committee (FCC)

The role of the FCC in a panchayat where plantation has been ini-

tiated is that of counterpart of the project authority. The activities of the committee tend to increase with the growth of the forest when more attention and care is required to preserve them in the future. As soon as they start producing direct benefits, the committee needs to be efficient in distributing the benefits in a just and equitable way. Its major responsibilities have been:

- making suitable land available for nursery construction;
- encouraging voluntary labor for construction work and coordinating the provision of all locally available raw materials;
- helping select land to be turned into forest and deciding on the species and number of plants, subject to technical feasibility;
- selecting a nursery foreman, assistant foreman and forest workers from the village to be trained in the project office;
- when additional labor is required, at the peak time of seed germination when nursery workers have difficulty collecting seed in adequate amounts, or when forest workers and watchman cannot attend their jobs, the committee must find temporary replacements; and
- protecting and maintaining the forest plants is the chief task of the committee. Its role will be greater in a few years when it will be necessary to devise more scientific methods to sustain balanced, on-going growth, conservation and utilization of the resource.

RECOMMENDATIONS

IHDP's assistance in terms of material supplies, financial help and technical backing is meant to be only for a short period. Once the program goes beyond a certain stage, it will be handed over to the concerned panchayat on whom the whole responsibility for it will fall. The formal hand-over of the program in Magapauwa Village Panchayat was planned for the beginning of this fiscal year (1985) but was deferred possibly because IHDP has been granted an extension of five years to continue their work. When the committee members were asked how they felt about assuming full responsibilities for the program they expressed doubts of their ability to sustain it. They feel that there is still about two-thirds of the planned plantation area uncovered and it therefore the nursery must be maintained for a few more years. There must be financial support to pay the nursery foreman and forest guards, as it would not be possible for villagers to do those jobs through voluntary labor. Trained nursery workers may not work without pay for long and village people may not be able to afford to pay them a monthly salary indefinitely.

The main worry is the lack of technical knowledge. Many people were willing to offer at least a week of free labor each year for work such as digging pits, planting, weeding, and guarding. These jobs do not require much technical knowledge and could be done in rotation. There is not a single respondent who refused to contribute some labor and affordable resources, if the responsibilities of maintaining the forest were transferred to them and if all the villagers are involved without discrimination. However, in view of the large amount of cash required to

continue the project's work, there is only a small possibility that the present level of operation and management can be sustained with villagers' contributions only. Therefore, immediate hand-over of the program to the village forestry conservation committee is viewed with doubts. It is essential that such projects everywhere extend their involvement and assistance until the plantations have achieved full growth.

If external funding stops, the momentum of the community forestry program may be lost. In another ten years, the program should be able to generate income by selling fuelwood and fodder to the local people or markets. Money can be made by selling vegetable seedlings from the nurseries for private transplantation. Eventually, the system will require less constant care and attention and will be unlikely to fail in the absence of technical experts.

Finally, it is the responsibility of the government to maintain control on the use of the regenerated forest resources, and to make available affordable substitutes for fuelwood and timber. If the rural people are cold and hungry, they may begin to use the young forests that have been carefully planted and protected in the past. The survey indicated that biogas plants may be successfully used to produce fuel, if credit facilities are made available and the schemes subsidized. According to the survey, 58 percent of the farmers in MVP have heard of this possibility. Gas has been produced from banmar vegetation in the Gobar Gas Industry's laboratories in Butwal. It is popularly used as fuel there, as it is not suitable for other purposes.

Forest resource conservation and development in the hill areas should incorporate a program to transfer knowledge, skills, and technology with an emphasis on self-reliance.

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