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WOMEN'S PARTICIPATION IN FORESTRY:

A Case Study of Akrang Village

Durga Kumari Gurung

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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Marijke J. Uhlenbroek
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WOMEN'S PARTICIPATION IN FORESTRY

A Case Study of Akrang Village

Durga Kumari Gurung*

INTRODUCTION

Rapid deforestation in Nepal during the last three decades has caused soil erosion, floods, landslides, water scarcity, harder lives for the rural people, and even loss of life. Both the decrease in actual area covered by forests and the degradation of existing forests have caused problems of alarming proportions. The extent of deforestation in different places varies. Some relatively undisturbed forests do remain, though reports indicate that their quality is also declining. The negative human and environmental impact is being felt by a growing number of rural people. At the present rate of use, it has been estimated that accessible forest could virtually disappear from Nepal within the next 10 to 20 years (Sharma and Amatya, 1978). Rural communities, the actual users of forest materials, must be involved in conservation efforts.

Impact of Deforestation

Over 90 percent of Nepal's population live in rural areas and depend on mixed subsistence farming. The loss of trees and ground cover has markedly affected the productivity of cultivated land because of lost topsoil, reduction of plant material contributing to soil infertility, desertification of vulnerable land areas, and their ultimate destabilization. Reduced productivity of once fertile land has forced subsistence farmers to bring more fragile, marginal land under cultivation. Thus, a vicious cycle has developed because these lands are generally less stable and apt to suffer from erosion, placing an even heavier burden on overworked farmers. Agricultural yields and forest production are both declining rapidly, while population growth rates remain high. Pressure on the land is greatest in those areas which are now least capable of sustaining it. Table 1 shows that population density is highest in the most topographically vulnerable areas.

Women and the Forest

Declining crop yields, increasing difficulty in obtaining forest products for domestic use and adequate fodder for livestock, and a reduction in local water supplies are the most obvious consequences of deforestation. Rural women, who have most of the responsibilities for collecting fuelwood, fodder and water are likely to be the most acutely affected by changes in the quality and quantity of local supplies.

For rural women, deforestation means that more time and energy that used to be spent on household chores, children, and fieldwork must be invested in gathering and carrying water and forest products. In this less obvious way, deforestation affects everyone who depends on the land for any part of their livelihood.

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Women are also affected socially, because when farms no longer yield subsistence crops, men must migrate in search of work. This is becoming more and more common. In such cases, women left at home must take over the extra burden of managing household affairs which were traditionally handled by men. They are without support or assistance for much of the year.

Despite the greater involvement of women in forest-related activities, forestry development projects have been directed at men in the past. As the traditional decision makers and leaders of the society, they were called upon to participate in reforestation efforts. The Seventh Five Year Plan stresses the participation of women but this policy has yet to be meaningfully implemented. To encourage execution of the policy, information is needed on the viability and profitability of the various programs. This research was conducted to gather data which would indicate the best means of including women in reforestation.

Table 1. Population Distribution

Region	Altitude (m)	% of Total Land Area	% of Total Population	Person/km Arable Land
Tarai	300	20	37	341
Hills	300-4850	44	52	1053
Mountains	4850	35	10	1244

Source: 1981 Population Census

The Study

In the last 30 years, His Majesty's Government of Nepal (HMG/N) has been implementing various programs with foreign donor agencies aimed at combatting deforestation. Despite this the condition of the forests has gone from bad to worse. Blame has been laid on rapid population growth, slash-and-burn agriculture, lack of people's participation in reforestation, and even government policy, which changes extremely quickly. All these do contribute to the vicious cycle of forest degradation, but one more needs to be added. No forestry program, plan or policy has specifically included women. This is a gross oversight, considering that women not only constitute half of the population, but are also responsible for firewood and fodder collection, and are the primary users of forest resources. Because women are not paid for their labor, and do not traditionally make conservation or expenditure decisions, they do not appear in the statistics, and are overlooked. Contrary to the opinion that a woman simply carries out her husband's or father's wishes in this regard, she must be considered in terms of resource management activities in Nepali villages. Without the cooperation and participation of women in forest development, efforts will continue to flounder.

Literature Review

Traditionally, the responsibility for forest management lay with people living in or near the forests. Not all community members were equally involved in or equally benefitted from forest management, but the responsibility was nonetheless local (Poffenberger, 1980; Sedden et

al, 1979). In 1957 community forest lands in Nepal were nationalized, and control of the forests and their products became centralized under the Forest Department (Wallace, 1985). Rural attitudes to the new policy of external management and control were negative to say the least.

People ceased to see community forest lands as a local resource which would flourish only with careful nurturing (Gurung, 1985). There was the occasionally justified fear that a nationalized forest could be used by people outside the community and that local efforts to care for it would attract outsiders to plunder a flourishing forest crop (Silwal, 1986). Acting out the fear that someone else would plunder the forests, the local people plundered their own forests. The situation was exacerbated by spiralling population growth (Poffenberger, 1980). In practice, Forest Department control was not conducive to effective forest management or protection. (Stewart, nd).

In recognition of the problem, Community Forest Legislation was enacted in 1978. The Panchayat Forest (PF) and Protected Panchayat Forest (PPF) rules were intended to restore responsibility for forest management and protection to rural communities. It was seen as a way to contribute not only to the maintenance, but to the rehabilitation of forests. Despite the legislation and its intention, the involvement of local communities in this new context has been slow and uneven (Gautam, 1986; Stewart, nd). The repercussions of nationalization are still evident in some areas. Local traditional systems have been disrupted (Poffenberger, 1980), and the villagers are suspicious and hesitant to accept the validity of the new community-oriented legislation (Gautam, 1986 and Silwal, 1986).

Trial and error have revealed that technical expertise and financial assistance alone cannot solve the problem. It is now recognized that members of targeted communities must be genuinely involved in limiting further destruction (Gurung, 1985; Silwal, 1986; Stewart, nd). Active participation of the forest users is needed to successfully manage natural resources (Gautam, 1986). Unfortunately, broad-based, locally active schemes of reforestation and conservation have not materialized (Gurung, 1985).

A community forestry program should utilize the energy of the concerned community. Whether the community depends totally or only partly on the forest, the people living near the forests have the power to preserve or destroy them. Within each community the people actually engaged in forest-related activities have the power to contribute to, cooperate with, or resist any program. The people with that power are the workers: the women. Women go into the forest to gather wood and they go into the fields to plant, weed and harvest the crops. Although men make decisions about their crops, especially those considered to be "scientific", the women are active in both agriculture and conservation.

Time and job-allocation studies have been conducted which indicate that women and girls are largely responsible for fuel collection, water and fodder collection and transport. More time is spent by women than men on both agricultural work (2.8 hours per day vs. 1.7 hours) and on "expanded economic activities" including food processing, fetching water and fuel collection (2.2 hours per day vs. 0.9 hours) (Acharya, and Bennett, 1981; Landis, 1984).

Because of their daily involvement with resource collection and use, rural women are more likely than men to be aware of any reduction in the quality or quantity of their supplies. They are also more likely to be concerned about the implications of declining resources for themselves, their families and communities (Coburn, 1982). Rural women, therefore, constitute a potentially receptive target group for the initiation of community forestry programs (Joshi, 1986).

There is little evidence that women are actively involved in maintenance, management, or conservation of the forests through institutions (Landis, 1984). Over 500 women appear on the rosters of government departments with forestry-related interests (Joshi, 1986), excluding 115 nursery workers, but they are concerned with government work--not necessarily forestry work--and are career-minded. It is extremely difficult to assess the extent of local women's formal or informal involvement in conservation activities.

Objectives

The overall concern of this research is the extent of women's involvement in reforestation projects. The specific objectives were to:

- identify the factors which motivated the women of Akrang village to work together for their own development;
- stimulate awareness in these women of the urgent forest problem by providing appropriate conservation education;
- encourage the women to initiate a reforestation/conservation project according to their own understanding of the problem; and
- suggest ways in which others can enhance women's participation in forest development.

Data Collection

Before entering the study area, a test of the chosen research tools was conducted. This was done in Sunkhani Village of Nuwakot District, which was chosen for its accessibility, and its Gurung community which is similar to Akrang. The villages of Sunkhani and Akrang are also similar in terms of population size, homogeneity, and tradition. The pre-test led to a number of changes in the original methodology.

The data presented here was collected mostly from primary sources. The preliminary groundwork included a literature review. The essence of the research suggested that qualitative data was most needed, so qualitative information was sought. Data gathering tools included a household questionnaire, participant observation, and audio-visual aids.

Household Questionnaire: A structured set of questions was drawn up to elicit information on population, migration, education, occupation, land ownership, production, livestock, fodder, firewood, scientific knowledge, attitude and forest practices. The questionnaire was filled in for every household in the village. The results provided baseline information for the rest of the research.

Participant Observation: This provided most of the qualitative data. The research team began immediately upon arrival to spend time with the village women, going about their daily tasks with them, discussing their problems, getting acquainted, and eventually attending an informal meeting. These activities formed a solid base for pre- and post-evaluation, and continued throughout the entire research period. Detailed daily journals were kept recording all observations. The all-inclusive nature of these observations was to ensure that valuable social and cultural information would not be missed.

Audio-visual Aids: A camera and a tape recorder were used to store images and impressions which could not be captured in words. These records of sight and sound reaffirmed impressions, and documented notable activities.

The baseline data uncovered the need for a conservation program in Akrang, which led to the third objective: to encourage the women to initiate some sort of conservation program. Aama Bikashe Toli (ABT), the village women's group, conducted a number of discussions to determine an appropriate project. The group then undertook its implementation. The researchers were not involved at all in decision-making or planning; they simply provided information when requested by the villagers. On their request, one researcher with a background in forestry provided conservation education in a simple way and conducted a tour to Madhubasha of Dhanusha District, and to Kathmandu. This tour helped the women to visualize potentials and to get ideas for their own project.

AKRANG VILLAGE

Akrang village lies in the northern part of the Phedikhola watershed, a tributary of the Seti River, between 4000 and 4500 feet a.s.l. There are 44 houses built along the south facing slope of a ridge which separates the mid-hills from Pokhara Valley, to the north. It takes nearly two hours to walk to Kuvende Bhanjyang, which is on the Pokhara-Bhairahawa highway.

The houses are grouped so close together that households that would like to add latrines or kitchen gardens to their lots can not do so for lack of space. The houses are mainly constructed of stones, with wood and slate or thatch roofs. Animals are usually kept in separate sheds.

The population of Akrang is 223, comprising 44 households. There are 102 men and 121 women. The average family size is 5.06 which is slightly less than the national average and the Western Hill Area average, which are 5.54 and 5.40 respectively, according to the 1981 census. Due to army service, most men do not remain in the village.

Over the last two decades, many villagers have left Akrang; this is typical in this area. Young men join the British Army, Brunei Security Guard, or the Indian Army, leaving their families behind. They return periodically on leave with plenty of money, with which they buy land in Pokhara, with the intention of building a house there in the future. Owning land in Pokhara is considered very prestigious. When they eventually return to Nepal permanently, they will build a house on their land, and they take up residence there with their families. Seventeen families had migrated to Pokhara from Akrang in this way in the last 20

years. Three families later returned to the village, to spend their old age there. At present, 12 men are away, serving in foreign armies.

The economy of Akrang is based on agriculture, with added income from foreign army service, and livestock raising.

Agriculture: Maize, rice and millet are cultivated and soyabeans and legumes are intercropped with the maize and millet (Table 2). Average production of all crops is 17.08 muri per household. Since land holdings vary, however, the average is not representative. The average farm size is 14.25 ropanis of khet (irrigated paddy land), 5.84 ropanis of bari (fields of open grazing land), and 3.54 ropanis of fallow land. This is hardly sufficient to meet the basic needs of the average family.

Table 2. Crop Production, 1986 (muri)*

Crop	Quantity
Paddy	497.1
Maize	82.2
Millet	136.7
Pulse	0.8
Soyabeans	35.0

Total	751.8

* One muri equals 24 American gallons

Source: Field Survey

Army Service: Young Gurung men are all highly motivated to join a foreign army. The pay in any one these armies for the lowest echelon of soldier compares favorably to income available from farming in the village. Depending on rank and army, yearly income ranges from NRs.15,000 to 100,000. Some of this income, at present earned by 12 men, maintains their respective households, and the rest is invested in land and other long-term investments. Households with aged members who were in the army also receive a pension of NRs.200-500 per month. The village is quite dependent upon income from service in foreign armies.

Livestock: Animal husbandry is an integral part of the farming system in Akrang. Animals are kept for their manure and milk, rather than for sale. The market in Pokhara has enhanced the profitability of raising goats so this occupation is gradually gaining popularity.

On average, each household owns three animals, with the buffalo being the most popular. They yield more milk and manure than other ruminants. Chickens are also kept by every household for eggs and meat. Due to the increasing scarcity of fodder, animal husbandry is less prevalent than in the past. Large livestock are becoming fewer every year.

A PROFILE OF AAMA BIKASHE TOLI (ABT)

Origin of ABT

With many men in the army, the population of Akrang is mostly women, children and the elderly. Nobody took responsibility for organizing village projects and administering village affairs. Basic needs which should be addressed on the village level were ignored and the women felt the ill effects of this neglect. Their lives became increasingly hard. They were responsible for household decisions as well as village decisions, and they had not been brought up with the skills or knowledge to face these responsibilities.

There was a death in the village. The villagers had organized and executed all the rituals necessary to ensure the peace of the departed's soul, and were taking the body down the hill from the village to the graveyard. The path leading to the graveyard was narrow and precipitous. Due to the condition of path, the carriers stumbled, and the body fell down the field. The Gurungs believe this to be highly inauspicious, apart from the loss of dignity in the event.

After this, the women decided to widen and improve that path. There had been some minor projects undertaken by a small group of women in the past, and the accident inspired those women to form Aama Bikashe Toli (ABT). The sad nature of the accident brought them closer together and impressed upon them the seriousness of their task. ABT was established in 1982. The name is derived from the fact that most of the women are mothers, to whom great respect is given in Gurung custom.

Organization

Almost all the women of Akrang belong to ABT but any woman, member or not, can participate in ABT's activities. The difference between member and non-member is not clearly defined in all cases, with common understanding and consensus dictating the responsibilities and obligations of each woman. Most of the women are between the ages of 25 and 45; in Akrang there are 76 women who fall into this age category, but only 10 of them are really active in ABT. Recently the active members have increased to 14 as a result of the interest and motivation generated by the observation tour that was conducted through this project.

ABT is not organized formally. There is no chairperson, president, secretary or treasurer. They consider all Akrang women members, and even interested men may join. The eldest woman is considered the leader, according to Gurung tradition. There is no reason to establish a rigid hierarchy, and the women do not feel it necessary.

When the first leader died, another woman had to be chosen, or rise to the position. The next eldest woman, who seemed to be the natural choice, was inappropriate for the position for various reasons. The researchers were preparing a young school teacher for leadership. She had the respect of the village. She was asked by the researchers to write various letters to concerned people and offices, and to read letters or educational materials to the other women. She maintained the files of letters and records of the finances. She was encouraged to learn about resources in Syanja and Pokhara which might provide aid to

the group. She was chosen for her abilities as well as for her status. Being divorced, she was unlikely to leave the village, and was able to devote herself to the group. The unexpected death of the original leader caused a few problems but gradually the new leader managed to earn a reputation for her skills and work.

All aspects of the group are informal: organization, methods, division of labor and action. Any rules are based in tradition. In such a small community stricter methods are unnecessary. When a meeting is needed, the proximity of the houses makes it easy to call an impromptu meeting. Also everyone has the same approximate schedule. For more urgent messages which cannot be spread by word of mouth fast enough they use a Katuwal or village crier, who broadcasts the news from a hilltop.

Income Sources

ABT does not have a regular source of income. Until now, their income has come from:

Donations: ABT has received donations from various visitors and village people, ranging from NRs.20-1,000 depending on ability and willingness to pay. It is not a reliable source of income and is very irregular.

ABT has received donations of cement, roofing tin, and ritual items for the monastery, from the local development office in Pokhara, and from individuals. These donations are usually given for specific projects, and consist only of things that are unavailable in the village.

Singing and Dancing: On occasions of birth, marriage, promotion or favorable posting for a son in the army, ABT members go to the house where the celebration is taking place, and sing and dance, wishing the lucky people more good fortune. The favored household will provide a tip of between NRs.50-1,000.

Deusi and Vailo: This ceremony occurs during Tihar, the festival of lights, and is similar to the American festival of Halloween. On the specified nights, children will roam from house to house, singing songs, begging for money or bread. ABT members play the game for their cause, and sing songs telling about themselves. They gather any amount of money in this way, depending on the generosity of the villagers, and the success of the harvest just prior to Tihar.

ABT Restaurant: When there are major gatherings in the area, such as Arghaun, the death ceremony, ABT sets up a small stall, selling tea, rice beer, bread and such like. Arghaun is more profitable than most festivals, as it lasts three days. When the gathering occurs outside Akrang, only one or two members will go to set up the stall, and they present the profits at the next meeting.

Accomplishments of ABT

Trail repair and improvement: The path which runs from Akrang's cemetery to the village, and up to the forest was widened and rebordered at a cost of about NRs.15,000.

Thati (Rest House): A rest house was constructed between the village and the forest, mostly for the use of women who go to gather fuel and fodder. It has been greatly appreciated by many a traveller during rainstorms or hot weather. The total cost was about NRs.30,000. The ABT received roofing tin and cement from Syangja District Panchayat.

Monastery construction: There had been a monastery nearby serving an area dominated by Buddhist Gurungs. It was in a state of severe disrepair. A new central building for ceremonies was built, and a separate building to house the officiating lama, and guests or other lamas. The ritual room was also stocked with equipment for Buddhism such as drums, bells and books. The buildings cost NRs.20,000 and the ritual materials NRs.50,000 but the effort was widely appreciated. The ABT received some construction material from Syangja District Panchayat.

Aid to the School: With the support of surrounding villages and Akrang inhabitants, ABT contributed to the construction of a school. Their contribution amounted to NRs.15,000.

Purchase of Common Pots: During festivals and marriages, many people have to be fed by the celebrants. To cook for such a crowd, large pots and pans are needed. Traditionally, the hosts would borrow what pots they could from their neighbors, and return them afterwards. Often the pots would be damaged or lost, causing arguments to break out. To avoid this unpleasantness, ABT purchased several large cooking utensils to be loaned to anyone in need. This service was influenced by the women's experience of village life, and is perhaps unprecedented in the history of village cooperation. Total expenditure was about NRs.7,000.

Drinking Water: With the cooperation of the Local Development Office (LDO) and Akrang villagers, ABT installed a tap in the village. With pipes and cement donated by the LDO, ABT organized the construction of the tap. This simple water system saves the women many hours of labor every day, which can be put to use in other productive or creative activities. The system needs to be repaired and improved now.

FOREST CONSERVATION

In October 1986, one researcher went to the village to observe. She worked with the women, and relaxed with them in the sun. In the evenings, most of the unmarried or separated women would gather at one house or another to talk, sing, dance, and have fun. These get-togethers were also the forum for unofficial ABT meetings. Between songs and dances, they might fall into a conversation about how bad the road was to the temple, and should they not repair it. Someone may mention that the water from the tap was very dirty these days and may dry up soon.

The talks would sometimes get more serious, and include brainstorming on how to improve things, but usually they did not get much past the expression of complaints or daydreams. The researcher took part in the conversations when she could and was accepted as a lively and helpful new member of the group.

They never once referred directly to the degradation of the forest. They would complain of how hard it was to keep a goat, but not that there was not enough fodder to feed the animals. They would talk about

landslides, and how much land was destroyed by them, but not that there were no trees to hold the slopes in place. They often tried to discuss ways of improving the situation but if they encountered a difficulty that they did not know how to solve, they would just get frustrated.

Once the researcher mentioned that there seemed to be much that needed attention in the village. She suggested they list the identified problems in order of priority. They all thought it was a good idea, but disagreed on how to make the list, and everyone got tired. It took a few days to get back to making the list, and many days to agree on what belonged in which order. The researcher did not tell them what to do, or how to do anything. She simply made suggestions that were sometimes ignored or forgotten, but more often remembered.

The list was finally written, and was pared down to three activities considered really important:

- Improve village drinking water system;
- Get a health post opened nearby; and
- Find a way to generate income for the villagers and for ABT.

Improving the Drinking Water System

There is a small, simple system to get water from the forest source to Akrang. The pipes which lead to the common tap were laid a few years ago. The local development department provided the pipe free of charge. The system is simple and works well when there is water at the source, but in winter there is no water at the tap because the water level at the source is too low and decreasing every year.

One woman suggested finding a new water source. In discussion, it transpired that the nearest alternative was still far away and it would be very expensive to lay pipes over that distance. They did not have much money, so that could not be done. Later, they thought about getting a machine to pump water out of the river that lay below them. That might also be extremely expensive.

The women left that meeting thinking that there was nothing that they could do about the water, and feeling frustrated. A few days passed without any improvement in their feelings, or new ideas. They began to recognize the importance of water to them when they considered the generations who would live in the village after them. They thought about it every time they went to the tap for water.

A few days after the meeting, the researcher found an opportunity to ask a few questions about the water supply. She asked them first if the water situation had always been that bad. They realized that only 20 years ago there was enough water for everything. The water never dried up at any time of the year. She led them to consider what had changed and they decided that there was less water the source now.

It took them some time to understand why there should be water in a place at one time, and then 20 years later that water just starts to dry up. The researcher suggested that a lot of things had changed in the last 20 years. What else could they remember about that time? They remembered people, houses, different land uses, anecdotes, and all sorts

of things. One woman mentioned how she and her friends were afraid to go through the forest at dusk or after dark. The trees shut out most of the light and the twigs rustling together sounded like ghosts. The forest was much bigger and thicker then. Thus, they came to ask themselves if maybe the forest could have something to do with the water source drying up. No forest: no water.

The forest around the water source was thinning out. Since it used to be a thick jungle and is now thin scrub, maybe in another five years there will be no trees at all. Their worst fears about the hard life of generations to come were raised by the thought that there may eventually be no water left. They had found the solution to their problem: in order to have water for the village, there must be a forest. To make a forest, one must plant trees. The solution was to plant trees. So the discussion on how to improve the water system ended with a recognition of the importance of the forest.

The Health Post

Getting a health post opened near the village was second on the women's priority list. The nearest health post was in Pokhara, four hours away on foot, a long way to go when one was sick. They complained that often when they arrived there, no doctors were on duty, or there was a shortage of medicine. It was almost not worth going at all. They wanted their own health post and they had heard that if they went through the right channels, they might get one. However, a few women felt that all health posts would be the same and that the villagers should just try not to get sick.

At the next meeting, when the subject of the health post was raised, a woman who had seen a hospital in Hong Kong on a visit with her soldier husband attended. She described it as "bigger than all of Ak-rang". To get medicine, everyone waited in line while a doctor asked each one a lot of questions. They did not always give out medicine. Sometimes they suggested a more nutritious diet: green vegetables, eggs, milk, and fruit. The women understood this and decided that they must all try to eat these things and stay healthy; then they would not need to go the health post at all.

Once it had been decided that they did not want a health post at all, but to be healthy, they discussed diet and hygiene. Three things were required to stay healthy: clean water, clean bodies and surroundings, and nutritious foods. All three depended on clean, plentiful water. They needed water to wash with, clean water to drink and water to grow vegetables and fruit. They already knew that to get more water they needed a better forest around the water source and to get meat and milk, they should raise more livestock. Therefore, a good source of fodder was needed. A thick forest would increase the water supply, and provide fodder. Thus the discussion on the health post also ended with the need for forest regeneration.

Income Generation for Villagers and ABT

Although income generation was third on their list, the women began to think that maybe it ought to have been first. How could they do anything without money? Up to that point ABT had been surviving mostly on

donations, but it would be nice to earn their own income, as they could not depend on donations forever. They wanted to find a way to generate some private income at the same time.

They had previously had the idea of goat raising. They knew well how to raise them, and the market for goats in Pokhara was very good. They decided that the members of ABT would raise goats, and those who could not afford to buy one would be given one on loan by ABT. Then, when the goat was ready for slaughter or sale, the profit would be shared by the person who raised the goat and ABT. Everyone agreed.

Before initiating the plan, they needed to make sure that the goats would have enough fodder to grow big and fat. This third priority also depended on the forest. The importance of the forest was clear to them. They were all anxious to start planting trees so that they would have clean water, healthy food and bit of income. It took nearly one and half months to reach this level of realization. It took all this discussion, argument and reckoning to get to the stage where the women were motivated to carry out a baseline survey.

THE FOREST SITUATION IN AKRANG

The deforestation in Akrang is not as serious as in some other middle-hill Nepali villages. Severe firewood and fodder scarcity has not yet been felt, but in time, Akrang will follow the path of less fortunate villages unless action to repair the damage is taken soon.

Akrang is made up of 44 families, some of whom own small private woodlots. Few have deeds to prove ownership but they have respected each other's property for generations. The private woodlots have proved indispensable in meeting the village's daily requirements of forest products. Akrang's low population pressure meant that the woodlots could remain, as the land was not needed to grow crops or build a house. What they do not get from their own woodlots, they can collect from Ramche Ban, the government forest, though this is not a dependable source.

Ramche Ban has historically been at the disposal of the villagers, but when the forests were nationalized and district border lines were laid down, Ramche Ban was included in the neighboring district. Since then, with no single group of people responsible for it, the government forest has declined in quality and quantity. There is little government forest even in the surrounding areas and Akrang village has none.

The village is difficult to reach from the outside world as there is no good road into the area. The villagers tend to look upon their village as a closed-in community, and they are not influenced or supported from outside. The whole ward is considered too broad to have the same interests as Akrang.

Akrang forest is situated on the northern side of the Phedikhola watershed. The Phedikhola is a tributary of the Seti Khola. The forest grows at an altitude of between 4400 and 4900 feet. Terraces have been cut into the hillside, sometimes on alarmingly steep slopes. They are usually level, but there are some inward sloping ones with almost vertical rises. As a result, the terrace edges are prone to slippage in the monsoon. The forest contains a mix of Katus-Chilaune. The most common

species of this type are Castanosol spp. (Katus), Schima Wallichii (Chilaune), Diospyros spp. (Tiju), Ficus spp. (Kavro, Aakh pokuwa, and Dudhilo), Artocarpus (Badahar), Bambusa (Baans), Arundinaria (Nigalo), Myrica spp. (Kaphal), Spondias spp. (Lapsi), and Litsea spp. (Kutmiro). Various climbers constitute the undergrowth, and Rhododendrons are common at the higher altitudes. There are numerous outcrops of rock.

Soil in the forest is generally poor, due to overgrazing erosion and loss of biomass on the forest floor which disrupts the nutrient cycle. Forest litter, such as dead twigs and leaves, is totally absent as a result of clearing by the villagers each year.

The regeneration of Katus and Chilaune is fair, but the young saplings are still subject to grazing. All regeneration has been incidental, through natural propagation. Careful coppicing and lopping techniques that promote regeneration are not known to the villagers. Only Kavro and Pakhuri tend to have good height and girth whereas other trees have medium proportions even at maturity. Some areas of the forest have been closed off with stone walls and they are dense, but the rest is open and sometimes sparse. Evidence of lopping is abundant and topsoil erosion is severe. In the forest as well as on cultivated land, gullies are forming. Monsoon erosion is heavy, accelerated by gravity, soil disturbance by livestock and the total lack of cover on the hillsides. Grazing areas are not well defined; the only vegetation left are unpalatable ferns and a few shrubs. There is no local system of grazing management.

Forest Use

The forest is used as a source of fuelwood, fodder, grass, timber, mulch leaves, and bamboo and reeds for basket weaving. In addition, it yields edible fruits and various medicinal plants. The villagers have no concept of conservation. They do not worry about the future very much because they have not yet felt a serious scarcity of forest products. They do not understand that their usage pattern is highly destructive, and they do not bother to prevent waste.

A further complication of bad coppicing and lopping practices is the water situation. Only three water sources have been tapped and the water is channelled into a reservoir that serves the low-lying villages. Villages higher up suffer water shortages in the winter, when the water level is low. Ground water stores are small because the water retention of the soil is poor. Instead, the monsoon rains rush downhill, forming gullies and carrying away the topsoil.

Villagers use traditional methods of harvesting forest products. This select and cut method is very simple and needs no technical knowledge. It is a technique that developed when forests were thick and plentiful. The villagers know no other method and do not see any reason to change. They know how a tree grows, and to what purpose it can be put, but they do not see that their lopping method prevents regrowth.

Most damage is done when they collect fuelwood. Both dead and live trees are cut down. Felled trees are split into manageable pieces in the forest, which are then carried to the village on the backs of women with a headstrap. Women help at every stage of this process.

Annual fuelwood use per household averages 1.4 metric tons. This estimation is based on a family size of 5.06 and each load of wood weighing about 18 kg. Thus 77.7 loads are consumed by each family in a year. It is burned in open mud and brick stoves and use to cook three meals per day. Fodder use per three head of livestock (the average family holding) is about 20 metric tons per year, which is roughly three loads per day.

Attitude Towards the Forest

The women of Akrang do not think much about the forest beyond the fact that they must go there to collect what they need. Cutting, digging and carrying constitutes a major part of their lives and they realize that the forest is important to them. All of them listed the advantage of the existing forest only as a source of fuelwood and fodder. A common response regarding the forest was the presence of wild animals and thieves being a drawback to its proximity. No one referred to the relationship of the forest to their water supply, the quantity and quality of the manure their animals produced, or the recurring erosion.

Asked why they thought landslides occurred, most of the women replied that they were caused by heavy rain. Six said they did not know. The women were also asked whether they knew the benefits of using a smokeless stove, but not one person was even familiar with the device. Some had heard of it and indicated that they would like to have one because of the prestige attached. These women, like most Nepali villagers, are accustomed to smoke. Their only comment on the fact that the smoke from their stoves totally envelopes them, was that it gave them a sense of warmth in the winter.

The women were again asked to prioritize the needs of their village to assess their knowledge and attitude. ABT recommended a list of six development activities that would be useful to the village he presented to the women for prioritization. As can be seen from Table 3, forest development was considered the least important and pressing activity, followed by the construction of toilets. This is partly because many feel that forest development should be carried out by the government and be free of charge. The nationalization of the forests and subsequent actions on the part of the government have engendered the notion that forests are the government's responsibility. They are seen as a sort of government fund, with assets free for the taking. The ideas of forest development, conservation, and protection are new to these people. Since their childhood, they have had an abundance (or seemingly so) of forest products at their disposal. They have never planted or protected the trees; because the forest is an accepted part of their lives, they give no importance to it.

From the survey of Akrang village, we can conclude that the women have little knowledge of the forest, and their attitude is ambivalent. They do not realize that they must now work to maintain the forest if it is to continue to fulfill their needs. They are facing problems that are a direct result of deforestation but they do not make this connection.

Table 3. Prioritization of Development Activities

Activity	Priority
Improving the water supply	1
Income generating activities	2
Establishment of a Health Post	3
Maintaining the lama's position in the monastery	4
Construction of toilets	5
Development of the surrounding forest	6

Source: Field Survey

FOREST CONSERVATION ACTION

When the women realized that the declining forest was the root of their problems, they decided to learn about forestry so that they could tackle the problems intelligently. One member of the research team was a forester and it was decided that she should teach them. She familiarized herself with their ideas and level of knowledge and then designed an educational plan. There were three steps:

- individual and informal talks;
- group discussions and problem solving; and
- an observation tour.

All the researchers participated in the daily chores of the women. While fetching water, fodder and wood, they drew attention to things that were related to the forest. The women encountered these things every day while working and had therefore become oblivious to them. They would discuss the landslides they passed on the way to the forest and were shown how they were the direct result of the lack of vegetation.

Group discussions were held on a number of topics and generally took the form of brainstorming. The researchers facilitated the conversation but did not dictate its direction. Posters, pamphlets, flip cards and other visual teaching aids were used. Specific examples of the problems, taken from the surrounding country and used as illustrations were perhaps the most useful teaching tools.

The villagers were encouraged to consider their basic needs: fuel, fodder, water, fertile soil, livestock, sanitation and education, and the relationship between them and their environment. It was described to them as a cycle, with each step dependent on the one before. The element of time was stressed, suggesting that environmental cycles can take many years to complete. Even though scarcity was not felt now, environmental degradation was occurring and the effects would be felt eventually.

Discussions were not limited to theoretical concepts; the role of women in forestry, the effects of government legislation, and the relationship between forests and hygiene in their lives, were discussed. Practical methods of conservation and management were outlined; smokeless stoves, stall feeding animals and afforestation techniques. The women also demanded details on issues that would affect them directly.

The women were especially interested in the idea of using smokeless stoves, once the concept had been explained to them. Seed collection, planting and propagation methods, nursery establishment, and official procedures for obtaining seedlings were all discussed in detail.

Observation Tour

Once the theoretical framework had been established, and the conviction and enthusiasm to act had been kindled, the women of the ABT prepared to go on the promised observation tour. The tour lasted five days and 13 ABT members and two other prominent villagers attended. They went first to Sakhuwa Mahendra Nagar and Madhubasa in Dhanusha District, to visit the SFDP project office, where they examined programs on community discipline, forestry development, leadership methods, common fund development, farming techniques and cottage industries. On this visit the women set their hearts on having a biogas plant in Akrang.

Next the women were taken to Kathmandu. A series of lectures were given and films shown, concerning such issues as smokeless stoves, women's legal rights, and the problems of women's cooperation in natural resource management. The documentaries, "The Fragile Mountain" and "Buffalo Must Eat Something Today", prepared by Sandra Nichols and FAO respectively, particularly interested them.

Vegetable Seed Distribution

The women's original project ideas were also explored given substance. Forty-four packets of vegetable seeds were given to ABT by UNICEF/Kathmandu. Always aware of income generating possibilities, ABT sold the seeds to the Akrang villagers for NRs.3 per packet. The money will go towards the purchase of goats, which will generate more income.

POST EVALUATION

The task of measuring and analyzing the changes that had taken place due to the researchers' efforts was difficult. The indicators were either inapplicable or too subtle to be measurable. It was decided that the best way to overcome this was to stay in Akrang and observe. Many improved practices were employed by the women in their day-to-day work.

Having concluded that the forest must be increased to improve their water supply, the ABT women dug 75 holes for tree planting around the water source. The holes were dug early because they would not have time to do it during the agricultural and tree planting season. Another 525 holes have since been dug by individuals on their own land.

On the observation tour that took the women to the Tarai and Kathmandu, the women were given a lump sum for their needs on the trip. Together, they managed to save NRs.1,200 of their expense money which was put into a fund for buying goats.

Having seen the biogas plant in the Tarai, they wanted to set one up in Akrang to provide electricity. They contacted the Nepal Gobar Gas Company and requested a feasibility study. The study had been completed at the time this report was written, but the paperwork was still being processed in Butwal Regional Office and Central Office in Kathmandu.

The idea of conserving wood by using improved, smokeless stoves was put into practice. The women obtained 44 stoves from the District Forest Controller and installed them in all the village houses.

An unforeseen indicator of the success of the endeavor was that the educational posters, depicting concepts of conservation, which had been hung around the village, were not vandalized in any way. Often, such posters are quickly torn down by children or idle vandals, who are not stopped by the village elders. The posters hung by the ABT women remain in good condition, which seems to indicate that they have taken the education seriously and have impressed this on the rest of the village.

To protect the Akrang forest from wanton degradation, the women posted a guard, and they established rules governing forest usage. The town crier shouts information and regulations during the quiet evening hours. Everyone is in their home at this time and so all get the message.

To promote health in the village, thereby dispensing with the need for a health post, the women decided to establish kitchen gardens. Two members received training in vegetable gardening from the Regional Agricultural Training Center in Khairenitar, and they could explain the most productive methods of using the seeds obtained from UNICEF.

The ABT is now trying to create a forest on government wasteland, which could be used by the villagers. However, this land falls under legislation which only provides for the establishment of panchayat forests. Any forest the ABT created on that land would not be under their control. The women are fighting to reverse this position.

The number of active members of the ABT is increasing daily. Before the conservation program, there were ten active members. Now there are 14 and others are showing a keen interest in their activities.

All the above activities have taken place since the concept of conservation was explained to the women. Nevertheless, the real source of their changed behavior must be questioned. ABT has shown itself to be an active, responsible and responsive organization. They might have taken the initiative without the influence of the researchers. However, their previous activities were limited in scale and not directly related to forestry, as they were not fully aware of the real threat of scarcity from deforestation.

It is important also to note whether the ABT women follow their projects through and maintain their enthusiasm. This is dependent on the leadership. During the training period, the unofficial leader of the group was an able and respected old woman. Unfortunately, she recently passed away, leaving a gap that is hard to fill. The researchers tried to train a young school teacher, hoping that she would become the natural successor to the old woman. She is bright and resourceful, with strong leadership abilities. However, the unexpected death of the leader meant that the teacher was unprepared to take the role and gain acceptance by the group. There are no rules; leadership is earned through the respect of the other women.

The reality of their conception of leadership can be seen in the term of identification they retain for their leader. If the young

teacher earns enough respect to be called "Rail Ye Mama" (an interesting combination of English and the Gurung dialect: "Rail" refers to a railroad, and the phrase implies a locomotive leader who pulls the others along a straight rail to where they all want to go), then the future success of ABT is assured.

The Aama Bikashe Toli (ABT) has emerged as a surprisingly cohesive group, capable of working together with ease and precision. Even prior to their conservation training, they had accomplished some small, private projects. Despite their relatively small number, and predominant illiteracy, these women have worked together as a finely orchestrated unit, much as many of their husbands do as Gurkha soldiers. The difference is that the women had no training in working together; they have no official hierarchy and little education. Why do they work so well together? There are several reasons:

The Village: the small, close-knit community facilitates communication;

Homogeneity: All but one household is Gurung and most belong to the same clan within the Gurung ethnic group. Many are related and therefore family. They have common social and cultural values;

Tradition: Gurungs are noted for their tradition of community cooperation and organization, which may be one reason why they make outstanding soldiers;

Male Support: The men of Akrang are not adverse to their women organizing themselves and taking a leading role. They offer moral and economic support, as they recognize that ABT activities benefit the whole community;

Devotion: The acknowledged leaders of the ABT are either unmarried or divorced, and usually without children. They are the logical choice for the active organizers as they have more free time and fewer responsibilities; and

Compulsion: As the young men go into the army, and retired officers often migrate to Pokhara to be near the pension office, women, children, and old people are left in the village. The women therefore constitute the most active sector of the remaining population and are forced to be the main movers.

CONCLUSIONS

This study can be considered as an experiment to motivate Nepali women to participate in forest conservation measures, by illustrating what can be achieved. The women of Akrang became enormously active once they realized that conservation was necessary, and why. They defined their problems, pin-pointed the source of them, and visualized the solution from their own perspective. They learned about environmental cycles at their own pace and in terms that were meaningful to them.

Through the success of helping Akrang women to take an interest in their forest, a precedent of working with women in forestry has been set. Other Nepali village women can be motivated in the same way.

Although castes dissimilar to the Gurungs may have slightly different needs, the techniques used in Akrang, which are sound in principle and have been proven in action, can be applied anywhere in Nepal. Action research programs that focus on women have been shown to be an appropriate way to fulfill the goals of the Seventh Five Year Plan.

Throughout the project, the most important qualities exhibited were patience and consideration for the women's perceived needs and hopes. Without these the project may easily have failed. Villagers have different methods and perception from urban people, and both sides can become frustrated when forced to act in the other's mode.

Rather than trying to create a new organization or network to mobilize the women, it is more effective to work with the women within their own system. The ABT is based in the culture of the Gurungs and their activities and way of doing things are accepted by all. ABT's non-hierarchical grouping did not hinder their ability to perform efficiently in any way. On the contrary, their own way of organizing themselves enhanced their capacity to work together.

Education played a vital role in mobilizing the women. Illiterate people can certainly understand complicated concepts, provided they are appropriately explained. The printed word has little meaning. Concepts must be explained using examples that are familiar to the women. Films, documentaries, and pictures, as well as the observation tour and demonstrations were found to be particularly effective. Unfortunately there are few visual aids designed for specific use in forestry. Informal discussions in courtyards and outside were found to be more effective than classes held in schoolrooms.

The women must also be willing to participate in the subsequent action; they must not be discouraged by bad education techniques. The forest in Akrang was beginning to show signs of serious degradation when the project was initiated, but the women had no idea how serious it was. Before conservation education, they saw the forest simply as a source of fodder and fuelwood. The relationship between water availability, agriculture, sanitation, and the forest was only realized later. Affirmation of the importance of reforestation in their eyes was an important step towards effective action.

Sharing the pains, joys, frustrations and discoveries with the women throughout the process is essential in two ways. It shows the women that the researchers are sincere in their concern for the welfare of the village people, and it facilitates clearer two-way understanding and communication of the problems and their solutions as perceived by each group. Development projects which originate outside the recipient's interests are bound to fail. Only when the villagers view a project as their very own will they see the importance of it.

During the six-month stay in Akrang, frequent trips to Pokhara and Kathmandu had to be made by the researchers, on private business. It was later learned that these absences weighed heavily on the minds of the women, and detracted from the work that had been put in to gain their confidence. They thought that the researchers did not like the village and this dampened their enthusiasm. Each absence created a gap in the motivation process.

A disadvantage to the action research approach, however, is that the researchers will and must become emotionally involved in the project. Some objectivity is lost, but bias is both necessary and detrimental. The net effect is that the emotional investment is high and it makes the work harder, but more satisfying if successful.

The support of the men in the village was essential. They took on extra household responsibilities to allow the women to be free to attend meetings, and their approbation of the work performed by ABT helped to confirm to the women that what they were doing was worthwhile.

RECOMMENDATIONS

On the basis of the field research and the conclusions drawn from it, the following suggestions for further mobilization of women in forestry can be made:

A relatively long period should be spent in direct interaction with the women in their own surroundings, before any attempt is made to encourage them to act. In this project, six months was found to be insufficient time for the new ideas and concepts to become accepted and understood. In areas where an organized women group does not exist, this initial stage will take even longer.

Traditional systems of organization and hierarchy should be adhered to and utilized. New "improved" organizations should be avoided.

Compassion towards villager's feelings, experiences, and activities is integral to acceptance and effective communication.

While working with the women as leaders in forest conservation, conflict between the men and the women of the village should be avoided. The point is not to create a situation in which the women dominate the men, but in which the women gain an understanding and motivation to become part of the conservation process. Men who are interested should not be excluded from the program in any way.

Selection of a village in which to conduct an action research project should take into account the homogeneity of the villagers. A heterogeneous society may require a different approach.

The leadership of the local organization involved must be taken by a locally accepted and respected individual. The leader plays a vital role in motivating the rest of the group and maintaining that motivation once the researchers have left. The leader should be identified early on in the project and relied upon throughout.

The women should understand that as the primary users of the forest resources, they carry the main responsibility for its preservation. Their realization of the importance of their personal role in the quality of the lives of future generations is imperative.

The observation tour proved to be valuable in broadening the minds of the women. However, the parameters of this technique are entirely dependent upon the situation.

A forestry conservation program is necessarily long-term. Interest is hard to maintain because the benefits are not immediately apparent. To make such a program more practical, it should be linked to the people's basic needs.

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