

SOCIAL FORESTRY NETWORK

**A COMMUNITY SCHEME TO ENCOURAGE
PRIVATE TREE PLANTING BY FARMERS
IN THE HILLS OF NEPAL**

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INTRODUCTION

In recent years in Nepal several government institutions and bilateral aid projects have set out to support tree growing on private farm holdings. However, such programmes are often restricted to the distribution of tree seedlings and the level of success in terms of seedling survival and establishment has been less than satisfactory. The main constraint almost all organisations face is in finding an appropriate channel to involve farmers, especially poorer farmers with limited land resources, in such programmes. The lack of the necessary skills and experience to provide effective extension follow-up is also a problem.

In this context, the Pakhribas Agricultural Centre (PAC) is one of the organisations in Nepal which has approached private tree planting in a structured manner. The innovative approach adopted by the Centre in planning, designing and implementing a private planting programme through a community self-help group is considered to be unique in the country. Based on the case study of Salle village, this paper documents the process involved in implementing such a programme and tries to identify factors that may determine its success.

The survey in Salle Village was carried out after tree planting work had got underway through local initiative with the support of PAC. In the survey an attempt was made to explore people's ideas and attitudes towards the problems and prospects of private tree planting. The changes that have occurred in the farming systems as a result of tree planting are highlighted. Although some principles have emerged from this study, the enormous variation in socio-economic, agronomic and ecological conditions makes it difficult to transfer the experience directly to other communities. An understanding of local conditions is imperative. Through a better understanding of the farmers' strategies towards tree growing, it should be possible to develop more appropriate innovations which may improve the lives of hill farmers. The implications for planning future extension programmes aimed at private tree planting are discussed.

THE SURVEY

The survey was conducted in Salle village during September 1989. A sample of 44 households was taken. One informant from each household was interviewed, usually the household head, some of whom were women. Interviews were conducted both individually at their residence and in groups consisting of 5-6 farmers. Their fields were also surveyed. It should be noted that all villagers were previously known to the field investigator and one

of us had previously spent considerable time in the village and had established good rapport with the people.

The interviews were based on a checklist which was used as a basis for informal discussion, through which general information on problems associated with private tree planting, details of local knowledge and suggestions made by the farmers to improve private tree planting were gathered. A structured questionnaire was also used to obtain quantitative data on demography, farm size, trees on private land and livestock ownership. Seedling production and distribution records were obtained from the register maintained at the PAC, Forestry Section and from the village nursery being operated by the villagers themselves.

SALLE VILLAGE AND ITS SURROUNDINGS

Salle village is in Hattikharka Village Development Committee—VDC (formerly Panchayat), in Eastern Nepal. It is an area of steep terrain, falling from an exposed ridge at 2200m elevation down to 450m. The soil in the area is acidic, with high organic matter in the topsoil. The climate is monsoonal, with 80-90% of the annual precipitation (1400 mm as recorded at the nearest meteorological station) occurring between June and September. Frost can be expected from the first week in December to the third week in February. The population of the sections of Salle village included in the survey is 1332, comprising 226 households with an average of six persons per family. The population is predominately Magar (84.2%) and the Magar dialect is widely spoken.

There are three major types of land use in the village—the area occupied by each is given in Table 1. Human settlement and cultivated land is largely confined to areas below 1800m; above this, at the top of the village, lies about 30 ha of upland grassland locally known as *Nagi*. The cultivated land is predominantly *Bari*—non-irrigated land, on which the main field crops grown are potatoes and maize, although recently wheat has started to gain popularity. A limited range of fruits and vegetables are grown around the homesteads. The village does have a small area of *Khet* (irrigated) land on which rice is grown.

Table 1 Summary of Land Type Distribution

Land Type	Average land-holding per household (ha)	Range (ha)	% of Farmers with Land-Type
<i>Khet</i>	0.23	0-1.2	38
<i>Bari</i>	1.30	0.25-7.5	100
<i>Nagi</i> *	0.61	0-2.0	30

* Non-cultivated land

The average farm size is 1.5 ha. This figure stands much higher than either the national

average (0.4 ha) or the 0.5 ha reported by Conlin and Falk (1979) for the Koshi Hills. Despite this, it is doubtful if subsistence level nutritional requirements are met by local production. Empirical evidence suggests a strong dependence on other sources of income such as working on the farms of other's, wage labour on nearby road construction works, raising and selling small stock (pigs, poultry, goats), portering, or joining a foreign army service.

The village has reasonable access to markets, an opportunity which has recently been further improved by the construction of the Dhankuta- Basantapur road. Despite this, the penetration of development institutions in the area is limited. A primary school was established in 1970 and recently a Water Supply Project has provided water to the school. The rest of the village obtains drinking water from local *Pandhara* (springs).

Livestock play a critical role in the farming system. Almost every household maintains a range of animals including cattle, buffaloes, sheep, goats, pigs and poultry. In addition to manual labour, livestock provide virtually all the draught power required for crop production. They are also the primary means of processing crop residues, fodder and bedding materials into compost which is vital for maintaining the fertility of crop land. Sales of livestock and their products are an important source of farm income.

Trees on private land also play an indispensable role in the farming system and their management is closely interlinked with that of livestock. Since proximity and access to natural forest is almost non-existent, every household depends on private trees for fodder, fuelwood and timber. The species found most commonly are given in Table 2.

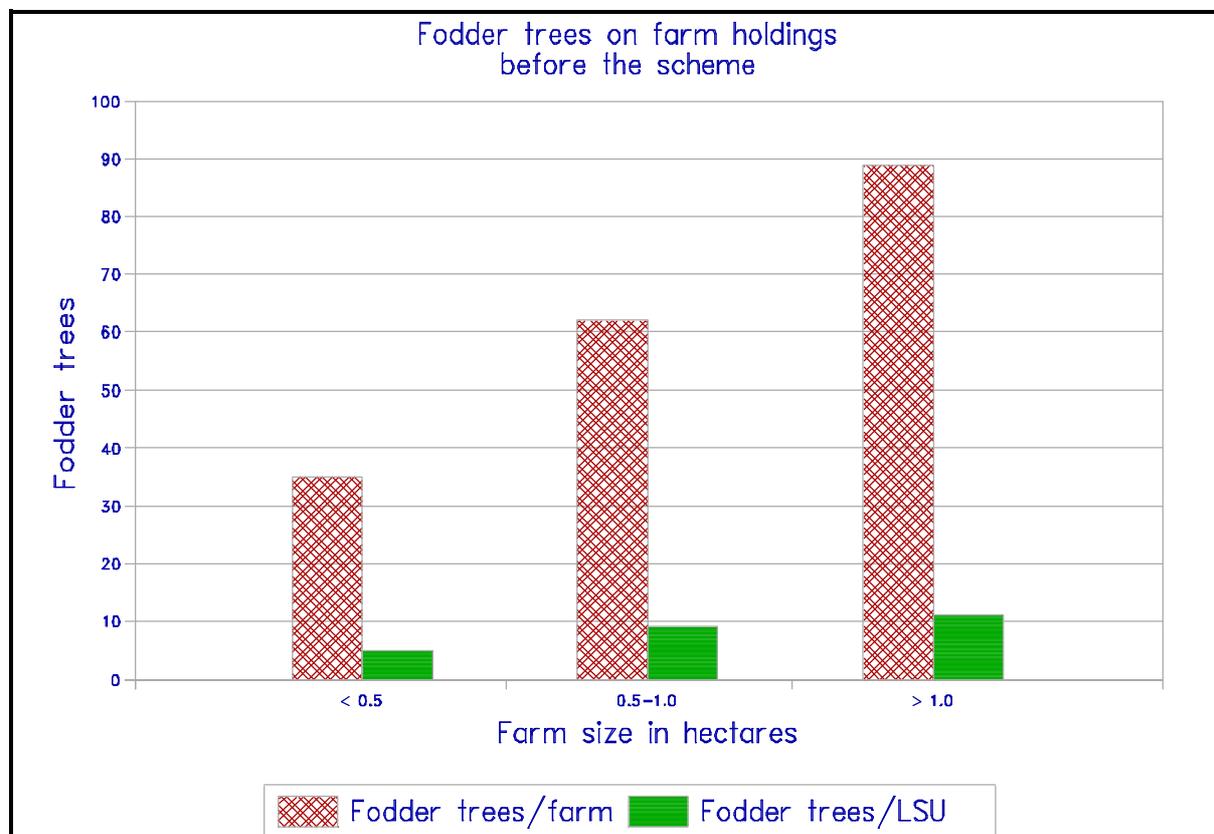
Table 2 Common Farmland Trees and Shrubs before the Scheme

Species	Average N° of Trees/Farm	Range	% of Farmers with Species
<i>Alnus nepalensis</i>	258.2	10-500	100
<i>Ficus neriifolia</i>	31.6	4-70	100
<i>Leucosceptum canum</i>	15.4	7-40	100
<i>Prunus cerasoides</i>	15.1	2-30	100
<i>Saurauia napaulensis</i>	6.2	0-25	92
<i>Ficus auriculata</i>	4.3	0-15	85
<i>Dendrocalamus & Bambusa spp (Clump)</i>	2.0	0-5	74

It appears that livestock population density decreases as the size of land holding increases and farmers with large farms have more fodder trees per livestock unit (LSU) than those with small farms (Figure 1). These figures are considerably higher than those reported by Wyatt-Smith (1982) for the Tinau and Phewa Tal areas and Hopkins (1983) for the Eastern hills in general. The number of fodder trees per farm depends largely on the availability and

proximity of forest fodder. The limited access to natural forest in Salle may partly explain such large numbers of fodder trees per farm.

Figure 1 The Number of Fodder Trees in Relation to Farm Size



THE INCEPTION OF COMMUNITY TREE PLANTING ON PRIVATE LAND

Hattikharka VDC is one of seven VDCs in the Local Target Area (LTA) of the Pakhribas Agricultural Centre where research and extension activities, across various land use disciplines, have been concentrated for over twelve years. Since 1977, a forestry trained extension worker has been working with farmers to encourage individual planting of fodder and fuelwood trees on their own farmland. As a result, many farmers have planted trees within their farms the tangible benefits of which are now becoming apparent.

In late 1987 the call for tree planting in Salle village became stronger. A group of farmers contacted the Forestry Section at PAC seeking advice and help for planting trees on about 30 ha of *Nagi* land at the top of their farms. The land is privately owned by 68 households and was used previously by both the owners and other villagers as open grazing for their livestock which are now stall-fed. One owner in particular (Mr. Padam Bahadur Sinjali) had become especially enthusiastic about tree planting, and it was he who had been the prime mover in urging his neighbours to get together for the present scheme. He has been the instigator, PAC the facilitator. Although the initial scheme was primarily for planting trees

on *Nagi* land, now farmers both who own *Nagi* land and non-owners (by planting trees on their cultivated *Bari* land) are participating actively in the scheme. The scheme is of special importance because it was initiated and organized by the farmers themselves.

EXTENSION APPROACH

Home Visits

Following a request from the villagers, a programme of home-farm visits by the staff of the Forestry Section was launched. The purpose of these visits was to discuss with the farmers their particular problems, needs and opportunities. Further discussions were held with farmers in small groups, in which female farmers in particular were encouraged to participate. These occasions were used to establish rapport with villagers as well as to create awareness regarding legislation governing private tree planting. Similar discussions were held with the local school teachers and pupils and booklets on private forest legislation were distributed.

On-Site Meetings

After the home-farm visits there followed a series of meetings on the *Nagi* land where tree planting was proposed between the forestry staff and the farmers. One member of each household (usually the household head) attended the meetings. As a result of these meetings it was agreed that: i) a farmers' committee should be set up; ii) that the area should be planted over a period of two years; and iii) that there should be collaboration between the village and PAC for advice and help in establishing the village tree nursery. Representatives from PAC expressed the continuing commitment of the Centre to supporting the scheme.

Formation of Farmers' Committee (Community Self-Help Group)

Mr. Padam Bahadur Sinjali was unanimously chosen by the villagers as the Chairman of the committee. Five other farmers, including two women, voluntarily agreed to assist him as committee members. These members included farmers with and without access to *Nagi* land. The rest of the villagers were considered as general members. The role and responsibilities of the committee, as agreed by the assembly, were as follows: i) that it should convene on a monthly basis on the first Saturday of every month; ii) that it should be charged with the development of a village level programme for tree planting in consultation with other villagers; and iii) that it should be the point of liaison between villagers and PAC.

Planning Undertaken by the Self-Help Group

A number of monthly meetings were organized during the first half of 1988 by the committee to formulate the future programme. The staff of the Forestry Section were also invited to attend. Many issues were raised and discussed during these meetings. The plan of action set out by the committee and the villagers included the following:

- ! The construction of a village nursery with contributions (labour) from each household
- ! Organisation of seedling collection and transportation from PAC to the village
- ! Fixing a nominal charge for the seedlings
- ! Preparation of a simple plan for the plantation
- ! The development of local rules and regulations for protection and management of the plantation area.

The Planting Work

One member of the community was selected to work as a nurseryman for which PAC help was requested. After completing his training at the Centre in 1988, the nurseryman went back to the village and constructed the nursery with the help of the villagers. The site for the nursery was provided by the nurseryman himself and excavation, the collection of bamboo poles and soil and preparation of *Bhakar*is (shade) was done by the villagers. The polypots and water pipe were provided by PAC.

A total of 18,000 seedlings were produced by the nursery over two years. Since this number was not sufficient to meet the local demands an additional 42,000 seedlings were provided by PAC. All collection, transportation, distribution and planting activities were organized by the committee and carried out by the participants themselves. As agreed previously between the committee and the villagers, individual farmers were charged 15 paise for fodder tree seedlings and 10 paise for other species. The amount collected was set aside as a community fund which currently amounts to Rs 2,036 (including income from other sources). To prevent any misuse of the fund, a joint account with the committee chairman and ward chairman as signatories has been opened in the bank. In future, it is planned that the nursery will also sell seedlings to neighbouring farmers and use the funds to pay the nurseryman and finance other forestry needs.

Protection and Management of the Plantation

The committee, in consultation with other villagers, has developed and implemented a number of local rules and regulations for the protection and management of the plantation area which is unfenced. A summary of these rules and regulations, as extracted from the meeting minutes maintained by the committee over the period of two years, is as follows:

- ! Each household is to practice a stall feeding system.
- ! A *Kanji Ghar* (animal pound) is to be constructed with help from each household.
- ! Animals found grazing on the plantation area are to be brought and kept in the *Kanji Ghar*. A fine of Rs 50 per cattle or buffalo, Rs 15 per sheep or goat and an extra fine of Rs 5 per night per animal is to be charged to the owner.

An additional fine of Rs 10 is to be charged for each plant damaged.

- ! Non-owners may cut grasses from *Nagi* land without payment, in consultation with the owner. However, anyone found guilty of stealing grasses from the plantation area is to be fined Rs 10 per load (*doko*).**
- ! Each owner of *Nagi* land must provide a watchman in rotation. A member of the household is to collect the rain coat (purchased using the community fund) and walking stick from the committee chairman's house at 8 am in the morning and to return them at 6 pm in the evening on her or his duty day. Absentees are to be fined Rs 35 per duty day.**
- ! All owners of *Nagi* land have to contribute labour for the construction of fire lines.**
- ! Anyone found guilty of setting fire to the plantation area is to be fined Rs 500. An additional fine of Rs 10 is to be charged for each plant damaged.**

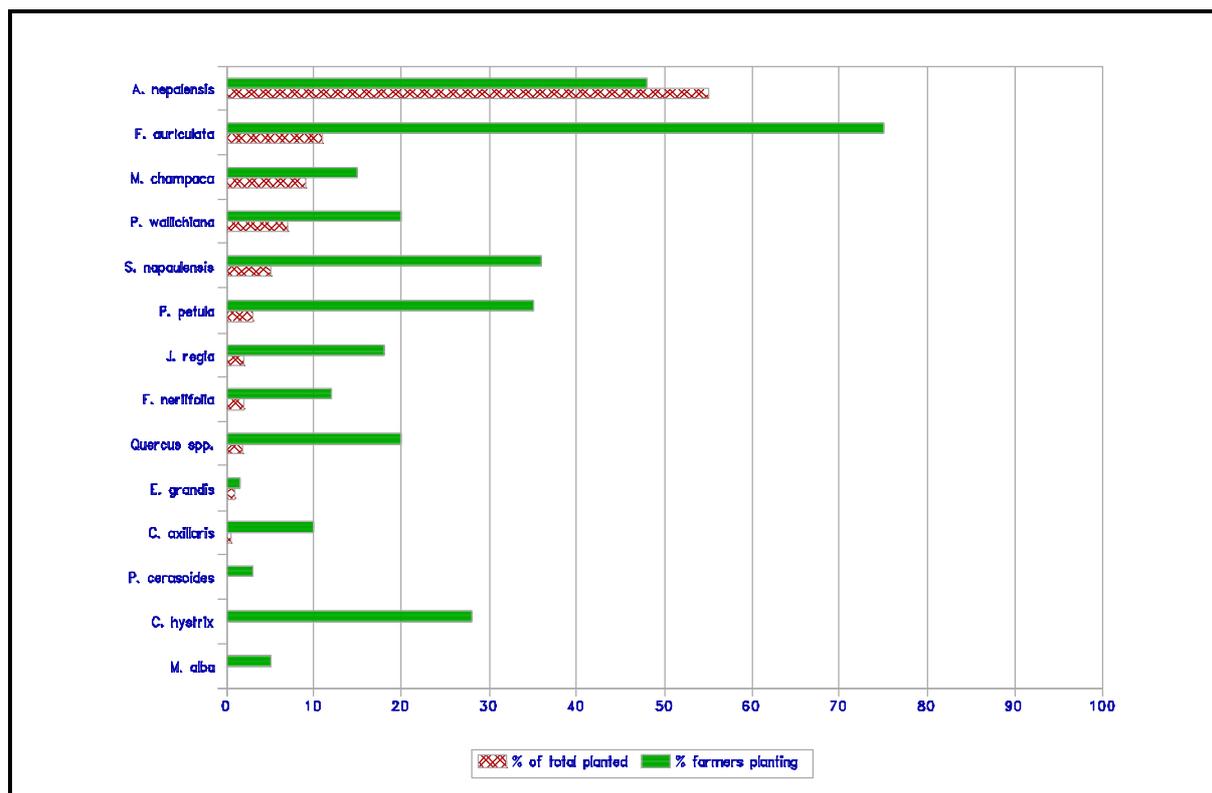
TREE PLANTING AND ITS EFFECT ON THE FARMING SYSTEMS OF SALLE VILLAGE

This section analyses the main factors relating to tree growing including the choice of species, preferred planting sites, survival rates, and the motivating factors and production objectives which led farmers' to become involved in the scheme. Changes that have occurred in the farming system of Salle village as a result of tree planting are also highlighted.

Choice of Species

Over the two year planting period a total of 59,000 trees of 14 different species were planted by the farmers. The species and numbers planted are presented in Figure 2. Of these, *Ficus auriculata* (good for fodder) alone accounted for more than half of the total trees planted (76%) but a large percentage of the farmers (56.7%) favoured *Alnus nepalensis* (a species good for fuel and timber). These two were by far the most preferred species, although this is only a rough way of judging farmers' preferences because their choice is largely restricted to the type of species available in the nursery at planting time. However, we are confident that the seedlings raised were in accordance with the farmers' demand.

Figure 2 Species and Numbers of Trees Planted

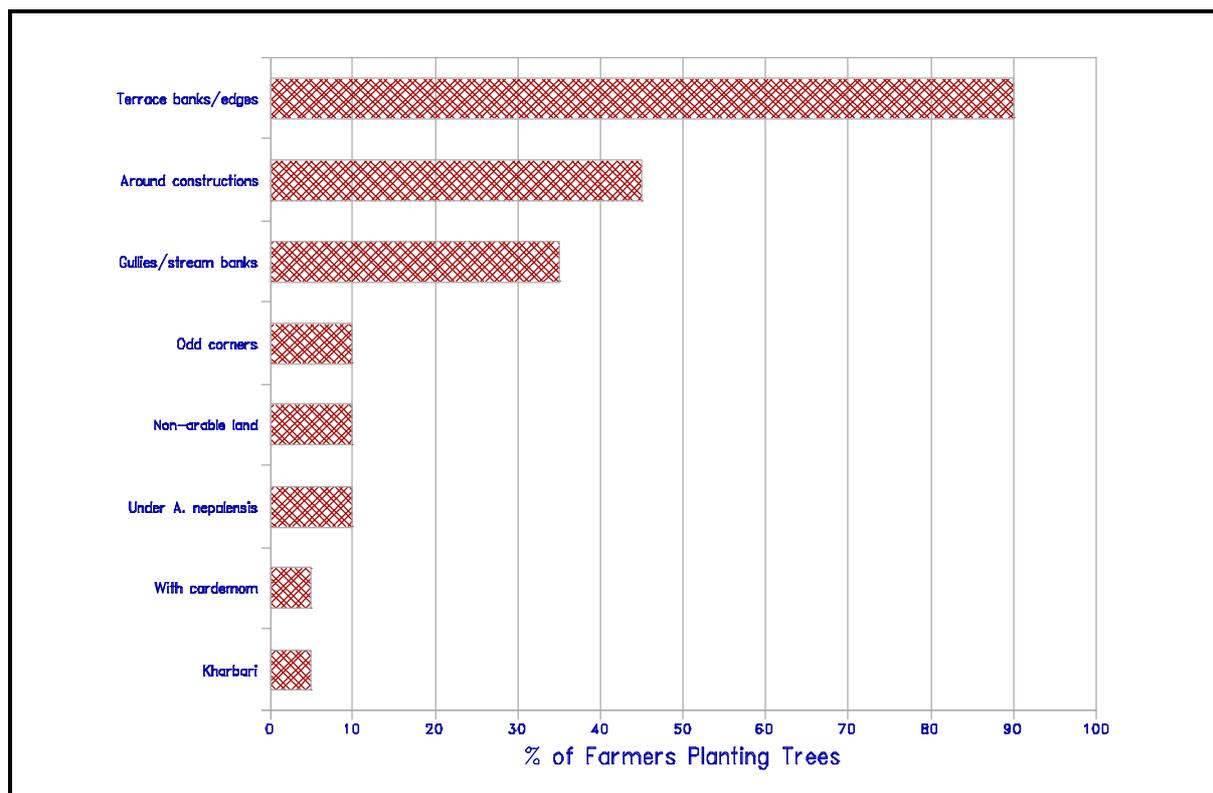


Of the total trees planted by the farmers interviewed, the number of fuelwood and timber trees was approximately 40% more than the number of fodder trees, which matches closely with the figure reported (42%) by Malla (1988) for the Pakhribas Local Target Area. This clearly reflects the prime requirement of the farmers for fuelwood and timber and their reason for choosing *A. nepalensis*, an indigenous fast growing species with multiple use.

Preferred Farm-Sites for Tree Planting

Two main types of land have been used by the farmers for tree planting — *Nagi* land and cultivated farmland. Within the constraints imposed by what will grow on a particular site, farmers were remarkably consistent in the choices they made about where to put particular categories of tree. Species such as *Alnus nepalensis*, *Michelia champaca*, *Pinus wallichiana*, *Pinus patula*, *Juglans regia*, *Quercus glauca & lamellosa* and *Eucalyptus grandis* were planted on the *Nagi* land and other species (mainly fodder trees) were planted on the cultivated farmland. Within the cultivated farmland, eight different sites have been used for tree planting (Figure 3).

Figure 3 Farm-Sites Chosen for Tree Planting



Three main sites have been used by the majority of farmers for tree planting: along the terrace edge and banks; around the house and cattle shed; and along gullies and stream banks. A few farmers have under-planted fodder trees in previously established blocks of *Alnus nepalensis* and in combination with cardamom plantations. This practice is likely to expand in the future as the land available for tree planting becomes more and more scarce. Research to investigate suitable management options for such combinations would thus be worthwhile.

Survival Rates

The results of the survival counts (aggregate of two years) are presented in Figure 4. These figures, however, should be treated cautiously because the results include the seedlings planted in 1989 monsoon, which at the time of survey had not faced the critical seasons of winter frost and spring drought. The overall survival rate, irrespective of species, was 72.3%.

Seven different reasons for seedling mortality were mentioned by the farmers (Figure 5). On both *Nagi* land and cultivated fields the principal

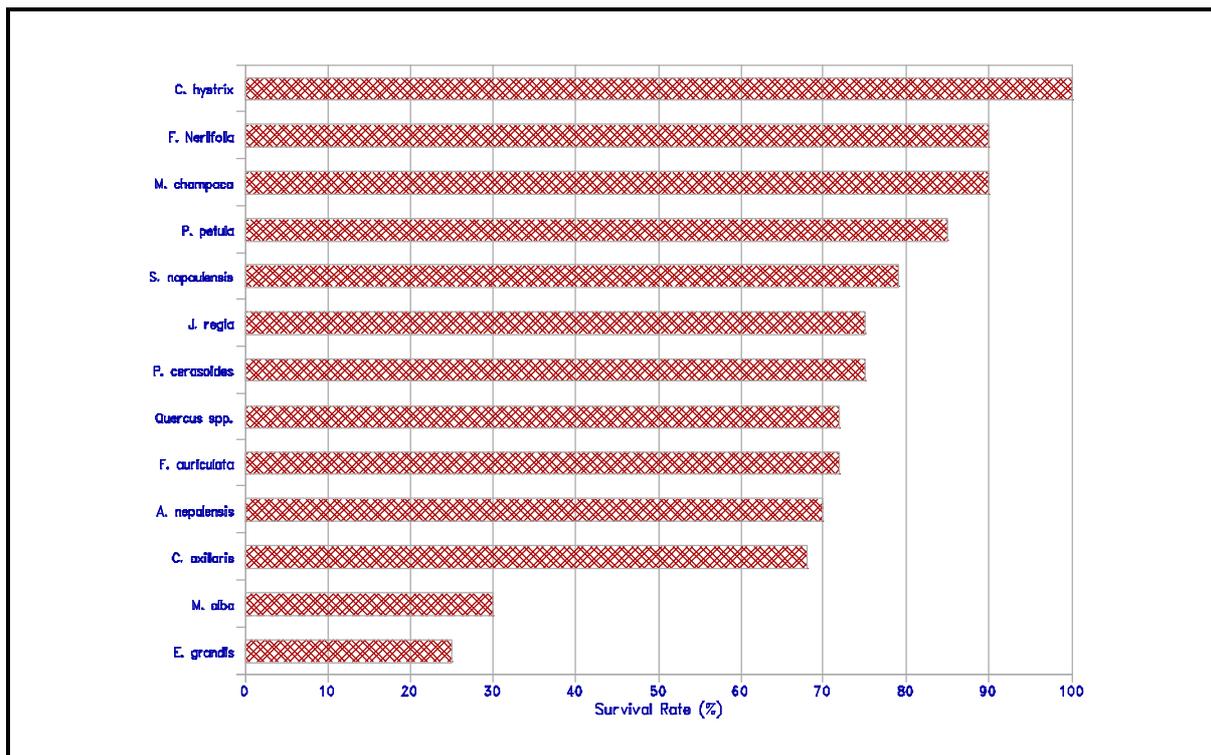


Figure 4 Tree Survival Rates

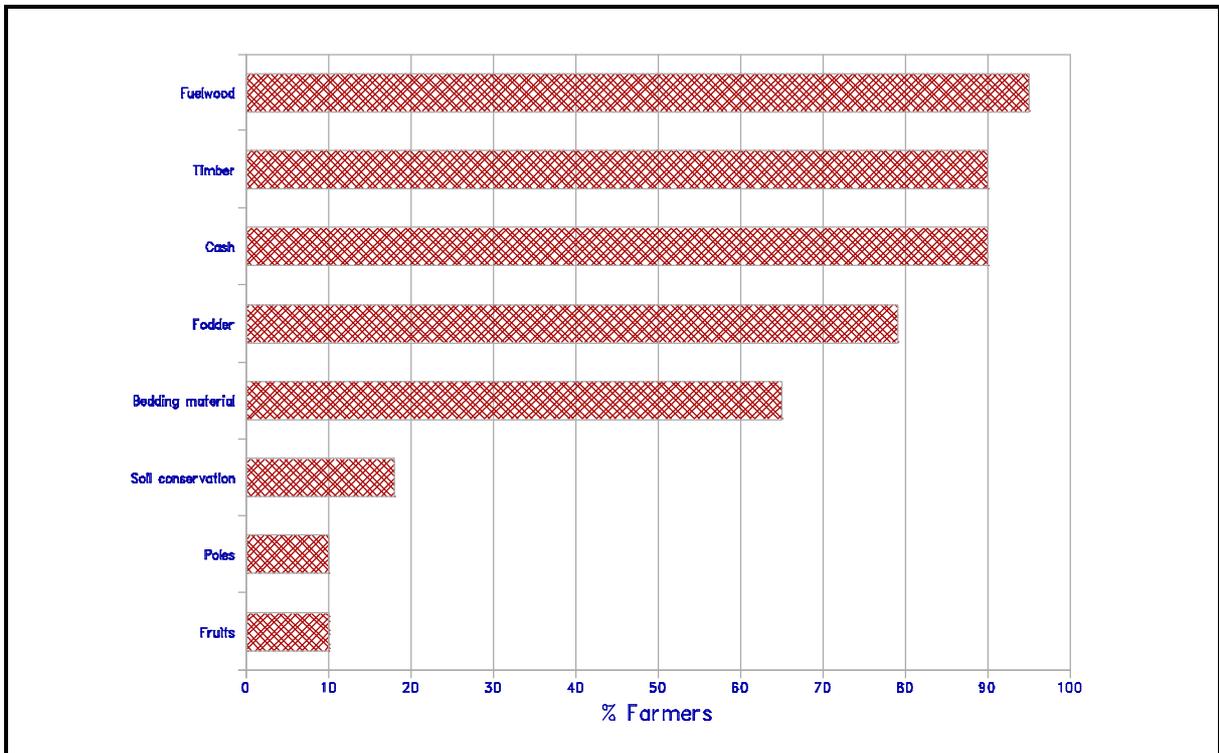
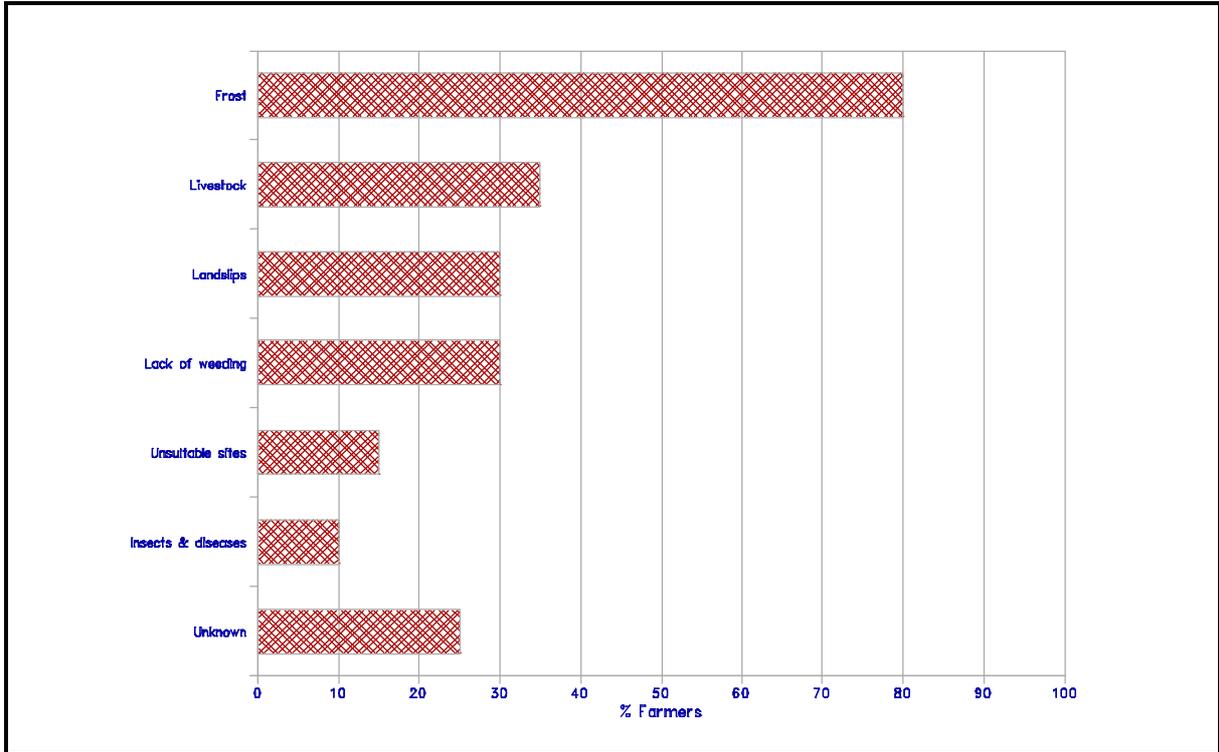
single reason given was frost. This again has important implications for research. On cultivated farmland the second most frequently mentioned reason was livestock damage; although grazing is restricted on the *Nagi* land, it is apparent that the farmers do allow their animals to graze on the cultivated fields during fallow periods. Effective protective measures are not adopted which suggests that improved extension services could considerably increase survival rates.

Farmers' Objectives for Planting Trees

The farmers were asked for what purpose they had planted trees, in response to which several reasons were mentioned and these were subsequently grouped under eight headings (Figure 6). The need for fuelwood, timber and fodder is apparent. Thus the primary motive was to attain self-sufficiency in these basic needs. However, it is interesting to note that 90% of the farmers plan to sell trees for cash in the future. This suggests that access to markets and the existence of the road network has to some degree influenced the tree planting activities in the study area. This has important policy implications, especially in relation to the farmers' security of rights and freedom to cut and sell trees. Some farmers also seem aware of the need to plant trees for conservation of the farmland and to protect land from further degradation.

Figure 5 Reasons for Seedling Mortality on Cultivated Land

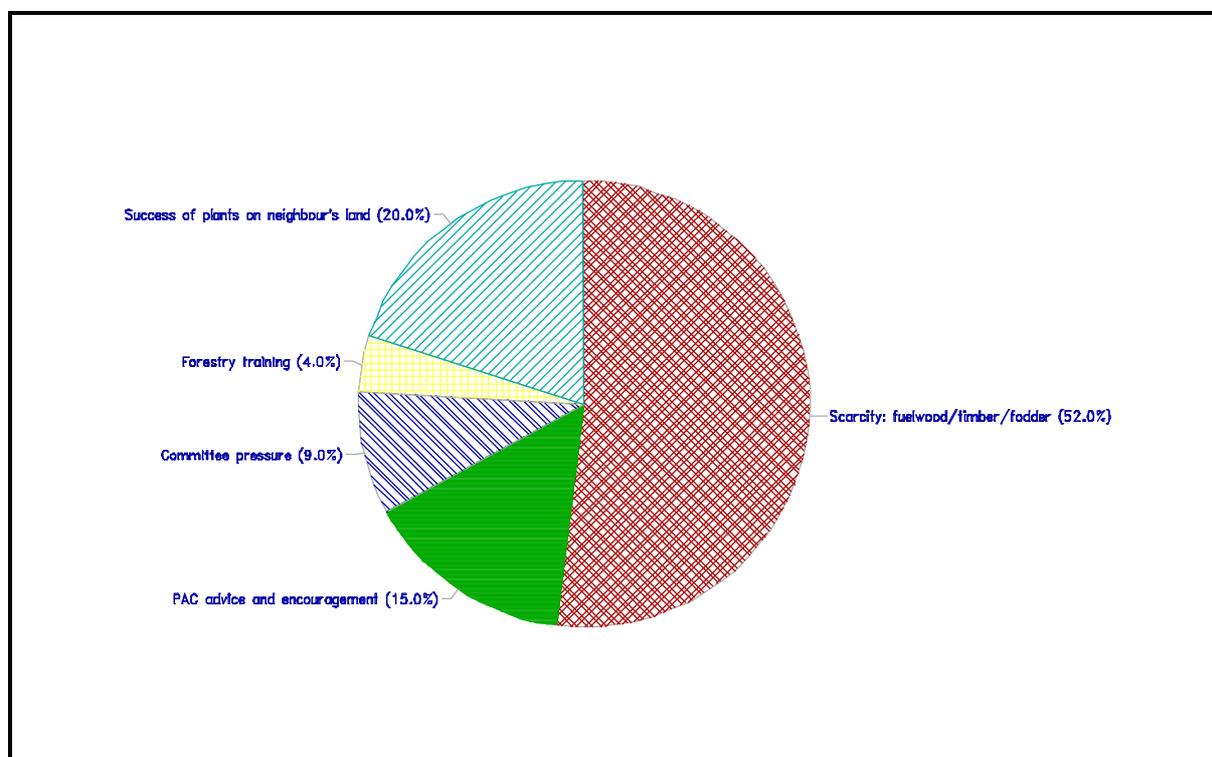
Figure 6 Farmers' Objectives for Planting Trees



Factors Motivating Farmers to Plant Trees

In response to the question of what actually inspired farmers to plant trees, a number of reasons were given which are presented in Figure 7. While the scarcity of fuelwood, timber and fodder was an obvious motivating factor, the trees planted previously by individual farmers have certainly played an important role in encouraging other farmers to plant trees. The long-term involvement of PAC with the farming community was yet another contributing factor. Some farmers mentioned that they planted trees because of the committee pressure; although it is not known whether these farmers planted just to be cooperative or were eventually convinced and planted willingly. Training was mentioned least.

Figure 7 Factors Motivating Farmers to Plant Trees



CHANGES IN THE FARMING SYSTEM

To document the details of changes that have occurred in the farming system of Salle village as a result of tree planting is beyond the scope of this paper and will be the subject of a separate study. However, over the period of two years the major changes which have become apparent are in relation to farmers' strategies for fodder provision.

Within a short span of time many farmers in Salle village have adopted stall feeding systems for their animals. Various authors have concluded that stall feeding of livestock is a necessity in the hills of Nepal and should be more widely adopted (Sharma & Pradhan, 1984; Hopkins, 1983). However, attempts to promote stall feeding systems have failed in

many places. Thus it would be useful to study what farmers found attractive about stall feeding and identify factors that determine the success of this effort.

Of the total farmers interviewed, 33% said that they have enough fodder from their private land to feed animals throughout the year. The rest of the farmers (67%) have achieved fodder sufficiency by reducing animal numbers on their farm (Table 3). This clearly indicates that the farmers are very selective in choosing the type of livestock they own. Although the average buffalo holding per farm decreased from 3.9 to 3.0, the percentage of farmers keeping buffalo increased from 76% to 95%. One notable point here is the large reduction of cattle (33.3%) as well as the reduction in the percentage of farmers keeping cattle. Table 3 also indicates that almost 50% of farmers do not have cattle, the only source of draught power in the hills of Nepal. Although there is a tradition of pairing oxen or borrowing from neighbours, how these farmers are meeting their requirements for draught power is not known. In the case of sheep and goats, a massive reduction was observed.

Table 3 Livestock Ownership Pattern Before and After the Scheme

Livestock Type	Before Scheme		After Scheme		% Change	
	Average holding (ha)	% of farmers owning	Average holding (ha)	% of farmers owning	Average holding (ha)	Farmers owning
Cattle	2.4	85	1.6	57	-33.3	-33
Buffalo	3.9	76	3.0	95	-23.1	+25
Sheep	3.6	28	0.2	4	-94.4	-86
Goats	4.3	52	1.9	42	-55.8	-19
Pigs	1.4	100	1.2	92	-14.2	-8
Chickens	15.9	100	16.9	100	+6.3	0

Source: Field survey (1989)

The farmers' criteria for choosing a particular type of livestock is not known. Further study to investigate this would be worthwhile. One reason for a large percentage of farmers keeping buffalo may be associated with productivity. The major reduction in sheep and goats may be associated with their browsing habit and the difficulties being faced by the farmers in stall feeding them. It should be noted that the survey work was carried out immediately after the earthquake of 1989. The desperate need for cash and the easily saleable nature of livestock such as sheep and goats could well be another reason. These figures therefore may not give a true picture, however, the trend is clear.

When asked what farmers found most attractive about stall feeding, several advantages and disadvantages were mentioned (Table 4).

Table 4 Advantages and Disadvantages of Stall Feeding

Advantages		Disadvantages	
	% of farmers		% of farmers
More manure	95	More fodder required	77
Healthy animals and more milk	19	Forced to reduce number of animals	19
Protection from leech	19	More bedding material required	100
More children can go to school	47	More tethering required	5

The most striking point arising from Table 4 is the increased number of children attending school since the adoption of stall feeding systems. These children were previously engaged in herding animals. The adoption of stall feeding has eliminated this need which in turn has encouraged parents to send their children to school.

It was noted that no significant changes have occurred in the allocation of farm labour. All the farmers interviewed said that the labour requirements for fodder collection have remained static. The argument is such that even under the previous free grazing system, at least one member of the family had to be engaged in herding animals full time, which was regarded as an inefficient use of labour.

Currently, children collect fodder during the morning before they go to school and adults do so either during morning or afternoon. Farmers believe that farm labour is better utilized now. This contradicts the commonly held belief that more labour is required for stall feeding animals. One reason in this particular case could be a reduction in animal numbers thereby reducing demand for fodder and labour. Further investigation is required to verify this argument.

DISCUSSION AND CONCLUSIONS

Based on the case study of Salle village, several features stand out as important or supportive of self-sustaining tree planting by farmers in the hills of Nepal. The fundamental prerequisite is that farmers must themselves recognise that tree planting is to their own benefit. Outside interventions by government institutions or projects can only affect their decision to plant trees either by demonstrating tree planting where farmers do not recognise this already or by removing constraints to planting such as the provision of seedlings, technical information and advice on government forest legislation.

Farmers in Salle Village are certainly aware of their dependence on trees. They clearly perceived the problems associated with a declining supply of forest products and have reacted to this by increasing the number of trees on their private land. However, many

government policy makers still believe that farmers lack such awareness or any knowledge regarding the management of trees on their land. Programmes based on such a misconception are almost bound to fail.

The Salle Village experience shows that if private planting schemes are to be successful, local groups with a common interest must be identified and contacted. This can be difficult, but experience is now showing that farmers often do group together to manage natural resources and these groups can provide an ideal point of entry into the local community. Salle Village provides a very good example of these sort of groups. Thereafter, the way in which such groups are approached is of immense importance and considerable time may need to be spent with farmers exploring their needs and opportunities to ensure that their requirements are met. This demands skills of communication in which many Forest Department staff are still lacking, thus highlighting the need for a greater concentration of resources in the retraining of Forest Department Staff and technicians in the form of participatory workshops, seminars and meetings (Gronow & Shrestha, 1988; Gibbon & Schultz, 1989, see also Network Paper 12b).

In the hill farming systems crops, livestock and trees are strongly interdependent. Interventions in favour of tree production will only be successful if they can be integrated in the farming systems by the farmers. The choice of species and timely availability of seedlings are essential to any acceptance of tree planting by the farmers. The issue is of immense importance because it demands a major shift in emphasis from the present practice of raising whatever species are available to the ones most preferred by the majority of farmers. This can be a problem to many of the government institutions whose main objective is planting large areas of government land primarily with pines. The encouragement and promotion of private nurseries, as in the case of Salle village, may help eliminate this problem.

Experience from Salle has also shown that adequate extension follow-up visits may be required until the farmers have achieved confidence in tree planting. In Salle village, a few farmers initiated the practice and their success and social status was instrumental in convincing others. Getting tree planting started is inevitably a slow and difficult process. In Salle it took sustained, systematic extension over two planting seasons for farmers to be receptive to trees.

There appears to be considerable interest in private tree planting by farmers in the hills of Nepal. However, this would probably be much greater if the legal aspects were clarified and adequate information on such matters widely disseminated. At present there are many forest regulations regarding the harvesting and transportation of trees from both government and private land. Many of these regulations are difficult to interpret due to frequent amendments which pose constraints on farmers who wish to market their trees. These regulations should be simplified to encourage private tree planting on a wider scale.

In Salle, despite the good relationship which has developed between the farmers, the Ranger and the District Forest Officer (DFO), some farmers still fear that their plantation might be taken away by the government. Whenever farmers had doubts about their ownership of the trees and their right to dispose of them as they wish, this feeling of insecurity was an obstacle to planting. This was demonstrated by the fact that only 62% (42 farmers) of the

total participants registered their private forests at the District Forest Office.

There is an argument that increased private planting may widen the gap between rich and poor by encouraging the larger farmers to sell products for cash, while continuing to use common resources for their own subsistence purposes (Malla & Fisher, 1987). Criticisms levelled against the private planting programme are that it is cash oriented rather than aiming to supply subsistence fuel, fodder and timber, and that only the big farmers are benefitting from the programmes. Contrary to these assumptions, the Salle experience has shown that the primary motives of the farmers, whether big or small, is to attain self-sufficiency in meeting their basic needs for fuel, fodder and timber. Interest in markets, and therefore cash, tends to develop later.

In this paper we have shown how a private planting programme can be effectively designed and implemented in cooperation with the farming community. The Salle experience has demonstrated that a private planting programme is not just the distribution of seedlings, it goes far beyond this. The scheme is now emerging as a model covering the range of activities which private planting involves. It has not only stimulated interest among farmers in neighbouring VDCs but has also provided a greatly needed training and motivation resource for several organisations of both national and international interest. This innovative idea could well be extended in other areas. However, in considering the scheme and the possibility of similar developments elsewhere, it is important to bear in mind:

- 1. The long-term involvement of PAC with the farming community;**
- 2. The prior development of individual private plantings and the visible demonstration effect of these trees;**
- 3. The presence of an enthusiast who stirred his fellow farmers over several years before they agreed to act;**
- 4. The homogenous ethnic groups;**
- 5. The physical help of PAC in training and seedling provision to enable planting to go ahead quickly once the interest had been established;**
- 6. The rapport that developed between the farmers and PAC forestry staff;**
- 7. The likely need for continued support and extension follow-up albeit at a relatively low level.**

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