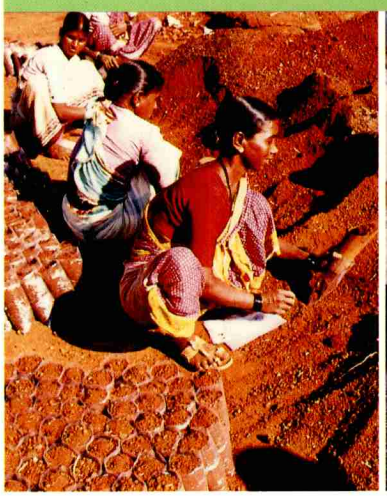
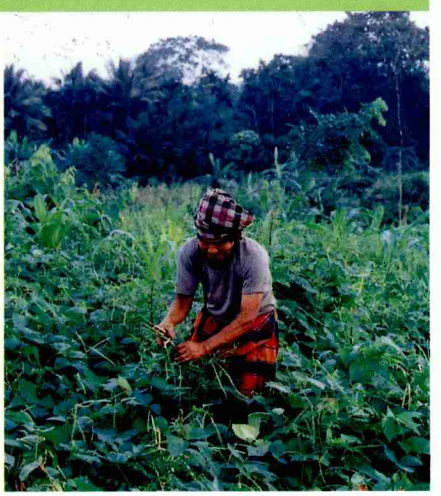
# NGOs and Tree-Growing Programs:

## Working Between Farmers and Governments





## The Workshop Co-sponsors

The Winrock International Institute for Agricultural Development is a private, non-profit U.S. organization with headquarters in Morrilton, Arkansas. Winrock International co-sponsored this workshop under the Forestry/ Fuelwood Research and Development (F/FRED) Project, for which it is the primary implementing agency. Funded by the U.S. Agency for International Development, F/FRED is designed to help scientists address the needs of small-scale farmers in the developing world for fuelwood and other tree products. It supports the Multipurpose Tree Species Research Network, through which scientists exchange research plans, methods, and results. Research and development activities center on the production and use of multipurpose trees that meet the several household needs of small farmers. F/FRED offices are located in Bangkok, Thailand and Arlington, Virginia, U.S.A.

The International Development Research Centre (IDRC) is a public corporation created by the Parliament of Canada in 1970 to support research designed to adapt science and technology to the needs of developing countries. The Centre's activities are concentrated in five sectors: agriculture, food and nutrition sciences, information sciences, social sciences, and communications. IDRC is financed solely by the Parliament of Canada; its policies, however, are set by an international board of governors. The Centre's headquarters are in Ottawa, Canada. Regional offices are located in Africa, Asia, Latin America, and the Middle East.

The FAO Regional Wood Energy Development Programme (RWEDP) in Asia, now in its second phase (1989-1993), is a regional cooperative project for the development of woodfuel resources to meet needs of households and enterprises. The project aims to improve understanding of the role of woodfuels as a source of energy. Project activities focus on the generation and wide exchange of information, and include training and intercountry exchanges. The project publishes a quarterly newsletter, as well as technical material on improved cookstoves, rural energy planning, social forestry, seed collection, and gender issues. Project publications are available from: RWEDP, c/o FAO Regional Office for Asia and the Pacific, Maliwan Mansion, Phra Atit Road, Bangkok 10200, Thailand.

The Nitrogen Fixing Tree Association (NFTA) acts as a catalyst in research, development, and use of nitrogen fixing trees (NFTs) to help meet people's needs for fuelwood, fodder, fertilizer, timber, and other products. The Association was incorporated in Hawaii, U.S.A., in 1981 as a not-for-profit organization.

## The Host Agency

The BAIF Development Research Foundation (known popularly as BAIF) was established in 1967 as a non-profit volunteer organization registered under the Bombay Public Trust Act. BAIF aims to create opportunities of gainful self-employment for rural families, especially among disadvantaged groups, and thereby ensure sustainable livelihood, enriched environment, improved quality of life, and good human values. Starting from a livestock breeding program in Maharashtra, BAIF has diversified into areas of tribal rehabilitation, community health, watershed planning, afforestation, bioenergy, and other rural-based vocations. It is active in a number of states throughout India. BAIF has received assistance in institutional development, including establishment of an advanced Information Resource Centre, from IDRC.

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# NGOs and Tree-Growing Programs: Working Between Farmers and Governments

## Report of an International workshop September 24-27, 1991 in Pune, India

Edited by David A. Taylor


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# Contents

## International Viewpoints

# Preface

This is the report of an international workshop, The Role of NGOs in Promoting On-farm Tree-growing Technologies, held in Pune, India, September 24-27, 1991. The workshop was co-sponsored by the Forestry/Fuelwood Research and Development (F/FRED) Project, the International Development Research Centre (IDRC) of Canada, the FAO Regional Wood Energy Development Programme in Asia, and the Nitrogen Fixing Tree Association (NFTA).

In 1990, the Steering and Research Committees of the Multipurpose Tree Species Research Network outlined plans for the workshop, focussing on the Network's interest in better dialogue among NGOs, research scientists, and government programs. By clarifying and improving these relationships, the Network aimed to make its research more responsive to the needs of farmers. BAIF Development Research Foundation, an NGO active in the Network as well as in IDRC programs, agreed to host the workshop.

For this report, NGOs are simply voluntary organizations pursuing a social mission driven by a commitment to shared values.[1] The workshop did not seek to distinguish between "third party" organizations that seek to serve the needs of a constituency, and people's organizations (or "first party" organizations) that are mutual-benefit associations representing members' interests and having member leadership. The GRID Foundation in Thailand is an example of the former; the Nashik District Eucalyptus Growers' Society in India is an example of the latter. Both types of organizations have lessons to share.

In the past 10 years, NGOs have been recognized by international agencies and governments as important mediators between communities and governments in rural development and technology transfer. However, donors and governments still have lessons to learn in how to work with NGOs in this role. In 1991 alone, several workshops in Asia have explored this relationship. Key points from two of these workshops appear at the end of this report.

In social forestry and agroforestry, NGOs have shown themselves able to gain villagers' participation and work in areas that fall between the mandates of many government departments of agriculture and forestry. This workshop discussed activities in five Asian countries where village-level NGO activities in tree-growing are well developed: India, Indonesia, the Philippines, Sri Lanka, and Thailand. Unfortunately, experiences from Bangladesh, Pakistan, and Nepal were not represented at the workshop. The workshop summary includes a list of recommendations.

The first section of this report presents case histories of NGO activities with farmers related to tree growing, and their lessons. This section includes overviews of India, the Philippines, and Thailand. The second section contains three perspectives on the relationships between NGOs and government extension and research agencies. The third section presents two examples of networking among NGOs and other groups. Papers in the last section of the report address issues of NGO support at the international level.

Thanks go to all participants for their contributions to the workshop and to the goal of better support for farmers growing trees. Thanks to E.L. Smith for editorial comments. Layout for this book was done by Pira Piradej of Viscom Center, Ltd.

[1]*Korten, David C. 1990.* Getting to the 21st Century: Voluntary Action and the Global Agenda. *West Hartford, CT, U.S.A. Kumarian Press.*

# Workshop Summary

At the Pune workshop, NGO leaders, scientists, and government officials presented experiences from India, Indonesia, the Philippines, Sri Lanka, Thailand, and international agencies. Speakers recognized NGOs' strengths and weaknesses and noted where they complement those of government agencies (see the keynote address by Mr. Samar Singh).

## Discussion

Discussion highlighted the variety of conditions under which NGOs in the region work. For example, funding conditions ranged from nearly all foreign sources in the case of Philippine NGOs, to substantial government funds for Indian NGOs.

While everyone agreed on the need for 'people's participation,' interpretations of this concept varied across cultural and national lines. For most, it meant involving farmers from the initial identification of needs through group interviews and rapid rural appraisal. For some, people's participation meant informal community involvement at different points in program development, and the application of local traditions for program aims. In part, this variation may be due to the different natures of the communities involved: in some instances, for example, upland population has expanded greatly in recent decades through migration, and many upland communities are heterogeneous, without long-established social workings. In other cases, forest communities are homogeneous tribal groups with longstanding group identities and ways of ordering social interaction.

A related issue was the use of subsidies to promote participation. Many participants rightly maintained that subsidies cause an imbalance in the partnership with villagers and distort land-use decisions. On the other hand, advocates of subsidies held that in certain cases, small farmers cannot afford the initial costs of a shift in technology without some financial support.

The level of national coordination among NGOs varies widely. Two models of this came from Thailand and the Philippines. In Thailand, NGO-CORD was established in 1985 as a forum for grassroots NGOs; it has over 200 member NGOs and strong regional organization, as well as a national organizing office with information support and some advocacy functions. In the Philippines, the Upland NGO Assistance Committee has identified areas of expertise among its members for technical backstopping, training, and the organization of seminars with government programs for policy clarification.

## Field Trip

The workshop included a field trip to BAIF's central research station at Urulikanchan, about one hour's drive southeast of Pune, which provided one example of how NGOs act as intermediaries on behalf of farmers. Its high-technology facilities in artificial livestock insemination and field trials of fast-growing tree species illustrate that NGOs are capable of advanced technical

*Narayan Hegde explains an exhibit o Leucaena products, including charcoa livestock feed mix, and newsprint, at the BAIF Central Research Station at Urulikanchan. Photo: F/FRED.*

research programs. Workshop participants also visited the Green Pune Project, a joint activity between the Government of Maharashtra and local NGOs, which has planted nearly 1,000 ha of trees on wastelands near the city.

## Recommendations

Recommendations from the group discussions were presented during the final session. Major recommendations, consolidated under three headings, included:

*Technical Support Needed by NGOs*

- More on-farm and farmer-codirected research, as well as more research on indigenous tree species of potential economic value, and their uses
- Mechanisms for greater NGO-government collaboration in technology generation and transfer. These should be coordinated through independent bodies similar to UNAC in the Philippines and NGO-CORD in Thailand.
- More training opportunities to build institutional and technical capabilities, including improved capability for generating technologies with farmers as partners
- A clearinghouse or referral center for NGOs' requests for technical information (for example, BAIF's Information Research Center and the Philippines Upland Resource Center)
- A regional forum for sharing technologies between countries

*Government Policy and Cooperation Needs*

- Recognition of NGOs' importance in decision-making for policy formulation and program planning
- Establishment or strengthening of NGO desks in appropriate government agencies
- Independent national councils of NGOs to represent their interests in planning and reviewing government policy and programs
- Policy measures to formalize usufruct rights for community-based development of government-owned wastelands and degraded lands, with NGOs acting as catalysts for people's participation
- Review of existing legislation on land and tree tenure, with legal and administrative measures to promote tree-growing on private lands
- Policies regarding credit and marketing structures for tree products that encourage tree growing by farmers
- Flexibility to adapt to different local conditions

*Needs for Networking Among NGOs and Linkage with Other Research and Education Programs*

- o Encouragement of networking at all levels–local, provincial, national, and international
- o Promotion by funding agencies of research projects with NGOs, and funds for documentation of the process as well as technical findings
- o Increased emphasis on the exchange of success and failure experiences for collective learning
- o Links between NGOs and government and university research through arrangement for graduate students to conduct thesis research in conjunction with an NGO, on a topic of interest to the NGO

## Follow-up Activities

Within its mandate for research and information exchange, the Multipurpose Tree Species (MPTS) Research Network will sponsor four pilot activities as follow-up to these recommendations.

1. Thesis research by postgraduate students in network institutions conducted at an NGO project site, on a topic co-directed by the NGO
2. Making improved seeds from network-supported seed orchards in India, Indonesia, the Philippines, and Thailand available to farmers through NGOs in the respective countries
3. Field day visits by farmers to on-station network experiments in those countries. The farmers will be invited to provide feedback on needed adjustments for farm conditions. The field days may be used by organizing NGOs as an incentive (in-country travel) for their farmer-cooperators.
4. Small grants for process documentation of near-complete or just-completed NGO on-farm projects that involve either successful or failed linkages to national research programs.

At the national level, workshop participants will be invited to participate in annual meetings of the respective national MPTS networks.

# Keynote Address : The Role of NGOs in Promoting Tree Growing

*Samar Singh*

In considering the role of non-governmental organizations (NGOs), two points have to be made at the outset. First, rather few NGOs in developing countries are engaged exclusively in forestry, mainly because traditionally forest management has been the exclusive preserve of the Forest Department. However, with the advent of Social Forestry, many NGOs have become involved in activities, mostly for promoting tree planting on private and non-forest lands. Secondly, one has to contend with the lack of comprehensive and up-to-date documentation on the work of such NGOs.

NGOs involved in forestry activities, especially social forestry, have proliferated in the past decade. They range from small village groups to national coalitions of NGOs, to large international NGOs based in the developed countries. Their objectives, institutional capabilities, technical expertise, scale and mode of operation, and funding vary widely. Here we will focus on national and local NGOs.

According to FAO's Regional Office for Asia and the Pacific, about 100 prominent NGOs are active in the countries of this region in forestry and environment-related activities. If smaller and informal groups are included, the number runs into several hundreds. Precise information about all of them is not readily available or easy to compile.

India may have the most. This would not be surprising, considering the size and polity of the country, the pattern of development since independence, and the growing awareness of the grave state of the natural environment. The *Directory of Environmental NGOs in India* (1989), published by the Environmental Services Group of World Wildlife Fund-India and the only publication of this type so far, lists 878 NGOs throughout the country. About one-half of these are in some way involved with forestry-related activities. These range from national organizations like the Society for Promotion of Wastelands Development, the BAIF Development Research Foundation, and the Agha Khan Rural Support Programme -- all of which operate in several states -- to small and informal groups operating at the village level.

Specific programs to spread environmental consciousness have encouraged the NGO movement in India. The National Environment Awareness Campaigns promoted by the Ministry of Environment and Forests have encouraged NGOs to link their primary concerns for rural development and welfare with matters of the environment. The Council for Application of People's Action and Rural Technology (CAPART), under the Central Department of Rural Development, has supported many NGOs, primarily for rural development activities but also in tree-planting activities.

In the past five years, the Wastelands Development Programme Board (NWDB) has taken initiatives to involve the people in afforestation activities, including a special scheme to involve voluntary agencies such as non-profit

organizations, registered societies, cooperatives, trusts, educational institutions, and grassroots people's organizations like youth clubs or women groups. In this program, financial assistance is provided for activities directly or indirectly related to tree planting and wastelands development. Between 1985 and September 30, 1991, 553 projects of 364 voluntary agencies had been supported by NWDB in 20 states, mostly in Tamil Nadu (70), Maharashtra (52), Rajasthan (46), Gujarat (44), Andhra Pradesh (44), West Bengal (56), and Bihar (47).

The NWDB has also started a program for setting up tree growers cooperatives and farm forestry cooperatives in seven states. An apex federation called the Rashtriya Vriksha Mitra Sahyog has also been established and the program is being expanded gradually along the lines of the Anand pattern of dairy cooperatives. In Maharashtra, an Agroforestry Federation has been established recently to coordinate the work of 50 tree growers cooperative societies in Nashik and other districts (see the paper by Vinayak Patil in this report).

Apart from this, under the ongoing Social Forestry Projects in 14 states, which are aided by donor agencies like the World Bank and the international development agencies of Sweden, Canada, the United States, and Britain, NGOs are being encouraged to participate in social forestry activities, with varying degrees of success. In view of the emphasis on people's participation in all these projects, the scope for involvement of NGOs is increasing day by day.

Finally, NWDB has been arranging evaluations of all completed projects of voluntary agencies that it has assisted. About 65% of the 99 projects evaluated so far have done 'good' to 'excellent' work. To encourage outstanding work by NGOs as well as individuals, NWDB has instituted national awards, which have been given annually since 1986.

## NGO Strengths

Clearly, NGOs' capabilities can complement the strengths (and limitations) of government programs. NGOs' strengths include:

- Intimate knowledge of local conditions and close communication with the local communities
- Flexibility needed to develop, test, and carry out innovative approaches to working with communities
- A commitment to the rural poor and an appreciation of the need to involve women in rural development programs
- The ability to integrate forestry activities with related agriculture, energy, water supply, health, or other activities within broader rural development programs
- Relatively low administrative costs and ability to mobilize local resources
- A long-term commitment to local self-sufficiency

The major contribution of NGOs can lie in the promotion of community-based, participatory forestry programs that benefit economically or socially disadvantaged groups. In this role, NGOs can take on activities that government agencies alone cannot or will not. NGOs can play especially important roles in information gathering and applied research, extension, and policy advocacy.

**Policy advocacy**. NGOs' role in representing local interests is crucial. As 'watchdogs,' many NGOs can monitor the environmental and social impacts of government policies and programs on the rural poor, and bring the grassroots perspective to government policy-makers.

**Information gathering and applied research**. More and better information from the local level needs to flow 'upward' to government agencies. For example, NGOs can survey local perceptions of problems and needs, conduct on-farm species trials, and monitor field projects.

**Extension**. NGOs can raise public awareness, provide technical assistance, and carry out other extension activities. They can use information they gain at the local level to design and test appropriate models. They can also assist locally with government programs that are compatible with their own objectives.

## NGO Weaknesses

Despite these strengths, NGOs can be constrained by internal weaknesses. The 'ad hoc' nature of many NGO activities and the absence of a clear sense of priorities are common shortcomings. These and other problems stem partly from uncertain availability of manpower and funds. Without reliable administrative and financial resources, NGOs cannot effectively plan activities and their participation in government projects. Since forestry is a relatively new area for many NGOs, limited technical skills also pose constraints. Many NGOs without trained personnel must rely on volunteer assistance. Despite the many NGOs that have grown up in recent years, they tend to act in isolation, and few exchange information or share experiences. Moreover, while some have developed the capacity to use relatively large amounts of funds effectively, most NGOs are not so far along and have received little or no support for institutional development.

## Other Constraints to an Expanded NGO Role

Several external factors further limit NGO involvement in forestry programs. Despite growing recognition of the important role of NGOs, collaboration among NGOs, governments, and other agencies is generally poor. The main reason is often a lack of information on the NGOs: who they are, what they do, and what their technical and administrative capabilities are. Government staff generally have no experience in identifying, assessing, and working with NGOs, and there is no means for direct, systematic communication and interaction. When government agencies do try to work with the NGOs, the former too often direct rather than collaborate, viewing the NGOs only as agents carrying out programs designed by the government.

Government relations with NGOs differ from country to country. In some countries, cooperation is the norm. But in many, skepticism–sometimes even mutual suspicion and mistrust–colors the relations. Most NGOs also lack knowledge of government priorities and programs. A fundamental problem in NGO-government relations is the conflict between the participatory, flexible nature of NGO programs and the need to meet official bureaucratic requirements and priorities. The complicated and time-consuming procedures required by government agencies for project applications, reporting, and monitoring can overwhelm NGOs. Governments also prefer supporting large-scale projects that show quick results--an approach that may be beyond many NGOs' capabilities and incompatible with their priorities and operating style.

Although funding constraints vary enormously among NGOs, a number of problems are common. Often, funding is provided piecemeal and without regard to long-term planning needs. This can disrupt project activities and cause a loss of credibility among the people that the NGO serves. Problems also arise when the government steps in and dictates how the NGO should spend funds. The tendency of government agencies to follow a sectoral approach to funding may conflict with the more integrative approach that the NGOs take to forestry problems.

In general, core funding is not available to local NGOs for institution building, particularly over the long-term. Most funding is for project activities, and comes with no provision for NGOs' institutional development needs.

## Suggestions

The following suggestions are intended to improve and expand collaboration among NGOs and government agencies for more effective forestry policies and programs.

**Commitment to Collaboration**

- Government agencies must recognize NGOs as partners in the development and implementation of forestry policies and programs.

- NGOs must acknowledge the government's primary role in setting national policies and priorities and, without compromising their independence, establish a cooperative working relationship.

**Improving Communication and Understanding**

- NGOs need to clearly define and widely communicate their program objectives and their technical and managerial capabilities, taking care not to create unrealistic expectations.

- National workshops or consultations should be convened to promote a dialogue among the NGOs and government agencies on forestry issues.

**Strengthening NGO Capabilities**

- Improved collaboration among NGOs is necessary. A national NGO network would facilitate information-sharing among the NGOs through newsletters, workshops, in-country training seminars, and other means.

- o Funding agencies should help strengthen the administrative, project development, and financial management capabilities of the NGOs.

- o To strengthen their technical capabilities, NGOs must establish stronger links with the technical branches of government forest departments, other relevant government agencies and research institutions.

**Funding**

New and improved mechanisms must be found to channel funds to NGOs. Funding relations between an NGO and a government agency must be based on mutual understanding, trust, and respect for the NGO's autonomy. They should enable it to achieve its mission and to strengthen the participation of its members and the target community.

A national NGO network could help NGOs obtain funds and meet government requirements for financial accountability and project administration. However, I should note many NGOs are concerned about losing their independence by participating in such a network, and many would prefer to obtain funds directly from non-government and even international agencies.

Local NGOs should help raise funds locally so as not to depend on external sources of funding. Local fund-raising might also increase confidence in the NGOs.

Government agencies need to simplify and better coordinate the application procedures and reporting requirements necessary for NGOs to obtain funding.

## On Achieving Local Participation

Finally, there are some points arising from the experiences gained in local initiative and involvement in forestry activities which need to be made.

1. **Understand and involve local communities early in the planning process.** Success stories are those in which the outside institutions – forest services, NGOs, or other groups – have made the effort to understand how the community perceives their problems and what the local people can do about them. Many times, however, tree planting for fuelwood may be initiated, although the real needs may be for fodder and small timber. We should think in terms of multiple-purpose species, where fuelwood is one of several outputs. Experience indicates that farmers rarely plant trees for only one purpose.

2. **Reduce conflicts about land use and between community factions.** Project planners must identify potential conflicts and address them early, preferably before the field operations begin. Methods include: (1) clearly designating rights to specific forest or tree outputs at specific times to various community groups; (2) ensuring that every group in the community benefits somehow from the program; (3) ensuring that

villagers understand the project and relevant rules (for example, who gets the outputs); and (4) proper extension and effective monitoring and evaluation, especially to check information flows. Participants should feel secure that the benefits will not be removed once the trees mature for harvest. Often, informal or hidden-use rights exist for common land. All affected parties need to be satisfied to avoid some group undermining the project.

3. **Start small and simple and building up participation through demonstration effect**. Simple technologies that can be developed and replicated easily have also been associated with success. The added advantage may be cost effectiveness. For instance, decentralized nursery operations have proven useful, despite the need for special attention to seedling quality.

4. **Use existing sustainable practices**. Prospects for people's participation are greater when changes in the way they do things are minimized. The best option is generally one that can achieve the objective in the simplest way, while being in harmony with the existing cultural and social values and practices. Quite often, the appropriate solution may not be apparent from the results of a pilot project with heavy inputs of outside, skilled staff, which cannot possibly be sustained over time.

5. **Ensure women's participation**. Rural women in most developing countries are directly and intimately involved in activities concerning the use of forest and tree produce, but unfortunately they are neglected in social forestry programs, often to the program's detriment. It is now recognized that women must receive special consideration, both in terms of active participation starting from the planning stage and in terms of ensuring their share of the benefits.

6. **Remove uncertainty for participants and ensure short-term benefits**. All elements of a program must be developed, explained, and agreed upon systematically and clearly.

7. **Recognize the importance of fodder and grass**. Early social forestry efforts often failed to devote resources to tree fodder and grasses, partly because the foresters did not recognize the importance of such outputs. Foresters now know that in many areas, like the Himalayas, tree fodder and forest grasses provide the major part of animal feed.

These points provide some guideposts, each of which has to be considered in a practical context for each new situation. No doubt, more experience has to be gained and analyzed. Furthermore, social forestry activities tend to be complex and involve a unique, location-specific combination of circumstances and factors that defy classification. Still, something positive can be learned from past experiences.

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# Session Notes

These notes summarize key points raised during the workshop discussions.

## Session 1 : NGOs' Activities

Chairperson: Mr. Anil C. Shah
Rapporteur: Dr. Ratna Sudershan

**NGO programs succeed not by forestry alone.** In Thailand, NGOs have made education a principal component of their forestry strategy, with complementary income-generating activities. Social forestry programs need a long-run perspective, but the Negros Economic Development Foundation's experience of regreening in Camingawan, Philippines showed that some immediate impact on poverty and hunger is necessary for sustained people's participation. In the BAIF Development Research Foundation's programs in India, forestry is one of many instruments through which comprehensive development is sought.

**Land rights is a central issue determining the success or failure of an NGO's tree-growing program.** The Taralabalu Rural Development Foundation in southern India found developing village common lands frustrating, and highly variable, with each experience unique. An unsuccessful attempt by another NGO in Madhya Pradesh to "develop village lands on the basis that these were surplus and wastelands," while in fact they were needed for minor millet cultivation, grazing, and fuel and fodder collection, underscored the fact that in India these lands are necessary for sustaining the poor, although the poor have no legal rights over them.

The Philippines provided other illustrations of the inadequacies of land laws. Presidential Decree 705 prohibits ancestral land owners from making use of and settling on their lands by declaring all lands with 18% slope as "inalienable and indisposable," although 90% of the lands in the Cordillera region of the Philippines have slopes of more than 18%. Other decrees prevent tribal communities from having their lands titled.

Conversely, the granting of title to land for 250 families in Imugan, Santa Fe, Nueva Vizcaya, Philippines, through efforts by the Kalahan Educational Foundation, was followed by a regeneration of both community and forest. This has led to impressive developments in sustainable management of a fragile ecosystem. Land security, not technical inputs or organizational developments, was the primary issue.

**The economics of tree-growing by farmers are heavily influenced by marketing and policy distortions.** Patterns of pricing and markets cause some of these distortions. While there is an acute shortage of fuelwood in India, farmers receive only Rs.250 (US$10) per ton. At this price, it is not worthwhile to sell the wood. Such aspects of economic incentives need further exploration.

**Prerequisite to long-term gains is environmental awareness. Many felt this must be stimulated from childhood.**

NGOs in Northeast Thailand have found that educational activities with school children and Buddhist monks had been effective in changing the attitudes of villagers toward forestry and natural resource management. The Taralabalu Foundation's school nursery program in Karnataka, India involves 2,000 crafts teachers and 20,000 students. In the Philippines, the Igorot Tribal Assistance Group has conducted information campaigns for villagers, students and teachers on environmental concerns, particularly reforestation, ozone layer destruction, chemical pollution, and school nursery establishment. Income generated through new activities and increased productivity in Imugan, Philippines, by the Kalahan Educational Foundation has been used for a high school, making it possible for children to learn about the upland culture and the area's ecosystem.

A concern raised here centered on whether introducing programs through children undercut the parents' authority, and what the implications of this might be. BAIF's experience suggested that parents might find new ideas and activities more acceptable if they come through their children and thorough schools.

**NGOs' power as intermediaries and the nature of people's participation vary widely.** Discussions on the BAIF Tribal Development Project at Vansda, India raised many issues, including whether NGOs foster a "dependency syndrome" through long-term programs. It appeared that the reverse is more true -- that without long-term commitment, development programs are generally unsuccessful. While efforts to increase villagers' skills and competence must begin at the start of a program, it does not mean that the villagers will not need an NGO's support over a long time.

(Perhaps the experience of Barangay Camingawan is relevant here. The project has met with unforeseen difficulties, including the murder of the President of the Farmers' Association, a typhoon, and a drought that damaged most newly planted trees. The fact of the group's vulnerability is what determines the need for support in the first place; overcoming the vulnerability depends on external factors -- like an NGO -- as well as internal organizing and political skills.)

To what degree was community participation and decision making actually achieved? One delegate pointed out a similarity in approach between the government-sponsored Drylands Social Forestry Programme in Tamil Nadu, and the BAIF project, and that in neither case was it clear that people determined the priorities. This point also related to whether "development" carried a danger of imposing a system on people. In reply, Manibhai Desai, President of BAIF, explained how his organization had selectively used indigenous concepts, technical inputs, and a range of support services, to reach people's accepted priorities.

**Conclusions**

NGOs have made important research contributions to social forestry through action research, participatory on-farm research, and process documentation. Their experiences underscore the need for a holistic perspective, and that social forestry is not a single-sector activity. Women's involvement still needs to be strengthened, and there remains the need to forge better linkages among NGOs and with governments.

Respect for indigenous systems and tree species and the granting of land

security to people (both on individual holdings and common property resources) would promote more successful social forestry programs. The level of poverty of an area influences the people's response to a program, the need for long-term support, and more importantly, the pace of change: poorer communities demand more carefully considered introductions to programs. NGOs working with the poor need a long-term commitment not because people become dependent, but because a lame person cannot start running.

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## Session 2 : Scope for Transfer of Technology through NGOs

Chairperson: Dr. Romulo del Castillo
Rapporteur: Ms. Kusum Salgado

**Food security has to be addressed before farmers can be concerned with environmental and forest rehabilitation.**

Confirming experience shared in Session 1, BITRA's work in Indonesia has shown that (1) activities must be diversified (for example, integrating cash crops with soil conservation measures), and (2) the problem of titles to the land had to be solved with government collaboration. Save the Children's introduction of aquaculture as an income-generating entry point to community development and environment conservation in Thailand provided another example.

Similarly, the Kapwa Upliftment Foundation on the island of Mindanao, Philippines, found that solving problems of soil fertility had to come before farmers' interest in tree growing. Their main concerns have been food production, lessening poverty, securing land tenure, optimizing limited resources, and improving women's food habits and nutritional consciousness.

**Technical skills of villagers and NGO staff need to be upgraded.** In this, support groups and networks like the Upland NGO Assistance Committee (UNAC) in the Philippines can help. UNAC helps in the areas of technical information, credit, marketing organizing, etc. Groups like UNAC can also arrange for legal help with land tenure problems and dialogues between governments and NGOs on other policies.

**From the perspective of agricultural credit agencies, NGOs can make a great contribution to technology transfer by bridging the communication gap.** A survey by the Regional Centre of Agricultural Finance Corporation, Ltd. in India found NGOs strong in awareness raising, education and training. Still, problems remaining in community motivation include apathy and a history of exploitation.

**Participatory methods of training provide effective combinations of technology transfer and development.** The Mag-uugmad Foundation's activities, drawing on farmer-leaders and demonstrators and emphasizing farmer-to-farmer visits and farm planning, illustrate this.

**NGOs and the Tropical Forestry Action Plan**

The biggest threat to tree growing in Thailand is not 'slash and burn' agriculture, but industrial logging that continues despite an official government ban. International organizations appear to promote commercial exploitation by encouraging the production of crops for export. Farmers unaware of the risks of export-oriented production merely do what the government's agricultural and forestry extension officers advise.

The Tropical Forestry Action Plan (TFAP), an international effort begun in the mid-1980s, intended to assist countries develop plans for management of their forest resources. However, it has in many countries not produced the type of management planning said to be its goal. Although NGO input was supposed to be included in the long-term resource management plans through a process of round table discussions, this has not come about in many cases. As early as 1989, managers of the TFAP process themselves recognized that participation in country-level TFAP exercises were restricted to government and external aid agencies. From the perspective of many field-level NGOs, TFAP has promoted commercial forestry at the expense of village forestry practices.

**Conclusions**

1. There is good scope for NGOs to develop, adapt, and promote tree-growing technologies, and they should take up this work on a wider scale.

2. NGOs should clearly identify their training needs.

3. NGOs can establish effective linkages between governments, research organizations, and universities. Networking between government organizations (GOs) and NGOs is essential.

4. NGOs should be brought into better dialogues with governments, especially on plans like TFAP and methods (including species selection) for tree-growing programs.

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## Session 3 : Lessons from Working with Research and Government

Chairperson: Dr. Delbert Rice
Rapporteur: Prof. L.L. Relwani

**Organizing tree growers' cooperatives can help members derive benefits** from the latest adapted technology, training, supply of superior germplasm, loan services, marketing of produce, and guidance from expert and credible leadership.

NGOs can serve as an important link between the government and the beneficiaries, particularly in small-scale, self-help schemes. In doing this, they should ensure the sustainability of the projects after their withdrawal.

To avoid failure, NGOs should spend maximum time with the farmers to make their programs effective before any efforts to expand the program.

**Learning to work with the people is a messy process in which GOs can learn from NGOs.** Programs with tribal/ethnic minorities on uplands and wastelands require long-term planning to ensure their socioeconomic growth and harmonious relations with the local people. Project planners must remember that each site is unique and requires study of the socioeconomic conditions of the different strata of society.

The same project planners should then seek linkages with other departments like agriculture, forestry, animal husbandry, health and nutrition, for a holistic approach to improving the living standards of the people. The Sarvodaya ("serving every one") Women's Movement in Sri Lanka illustrates this. Sarvodaya addresses the needs of households not through agroforestry alone, but by combining homestead-raising of fruit and multipurpose trees with potable water security, maternity and child care, indigenous herbal systems of medicine, post-harvest processing, and simple audiovisual aids.

Left to themselves, GOs, despite expertise and enthusiasm, often fail to organize the people to sustain the project after their withdrawal. NGOs are better equipped to execute such jobs, as they prepare the participants from the very beginning and help create leadership to take over the project through constant monitoring and personal contacts.

**GOs and NGOs should coordinate their activities and place major emphasis on people's participation in development activities.** Villagers' skills, confidence, and self reliance should be raised. With closer coordination, though, NGOs must guard against becoming small bureaucrats and an extension wing of the government.

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# *WORKING WITH FARMERS: CASE STUDIES*

# NGOs in Social Forestry in India

*N.G. Hegde*

Deforestation and increasing demand for forestry produce in urban areas have brought a severe shortage of fodder and fuelwood in rural areas of India. Realizing the need for self-sufficiency in these essential commodities, the Government of India began promoting afforestation on non-forest lands. A Department of Social Forestry was specially created in most states of the country. In 1985, the National Wastelands Development Board was established to promote a voluntary movement for the Greening of India.

In India, about 70% of the population of 870 million live in rural areas, depending mainly on agriculture. About 75% of this group are small farmers with holdings of less than 2 ha; the average landholding size is 0.96 ha. Most of these depend on rainfed cropping systems. About 61% of rural families live below the poverty line of Rs. 9,000 (US$360) per family per year.

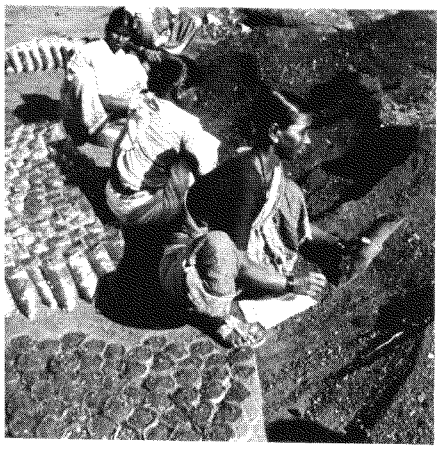
Due to India's history of democracy and cooperatives, NGOs in the country enjoy relatively stronger relations with state and central governments than their counterparts in other Asian countries. While cooperatives successfully organized agricultural credit and produce marketing, however, NGOs focussed on educational programs. Only in the early 1970s did several NGOs launch innovative rural development activities that made a significant impact. To build on this development, the Government of India set up the Council for Advancement of Peoples Activities and Rural Technologies (CAPART), an independent agency to pool financial resources from various government departments and international donors in support of NGO activities. At present about 75% of NGO activities are funded as grants by the government through CAPART.

Yet after a decade of serious effort by the state and national governments, with cooperation of NGOs and material and technical support from developed countries, the country has managed to reforest only about 2 million ha annually, against a target of 5 million ha. As a result, wastelands continue to expand every year. It is estimated that presently more than 100 million ha are underutilized in India. Even with an ambitious target of covering 5 million ha under forest annually, it will take 20 years to rehabilitate these wastelands. Scarce land resources cannot be neglected, nor can the threat barren lands pose to agriculture and environment be ignored.

A critical obstacle to India's Social Forestry Programme is a lack of people's participation. Despite severe pressure on public plantations and forests, people in rural areas remain reluctant to plant trees on their own land. Fodder and fuelwood are basic needs of these households, but most are not interested in producing them since they now collect these products free of charge from community woodlots and forests. The farmers' priority is to generate cash income. Afforestation is attractive to them only when it involves tree species that generate cash income.

Another reason for the current low level of people's participation is that they lack information about cash-generating production systems. Also, many villagers are not aware of the adverse impact of deforestation on their farming operations. A program that informs them of how they may plant trees to earn money and improve food production can remove these obstacles.

Lack of marketing channels for the forestry produce is another factor obstructing the adoption of social forestry, particularly on private land. Despite a growing scarcity of tree products, producers cannot easily market their produce in rural areas.



*Farmers prepare nursery sacks for tree sowing in one of BAIF's social forestry projects. Photo: BAIF.*

## The Role of NGOs

NGOs can play a large role in improving people's participation. Working closely with the farmers as they do, they understand farmers' problems. What farmers expect from the Social Forestry Programme varies with the size of their holding, income, land type, family size, etc. Preferences for species and systems vary widely within a single community. Families will not be persuaded to plant trees unless their needs are identified and considered in these choices. Only NGOs have the flexibility to undertake such a task.

While obtaining feedback from farmers, NGOs can also identify successful models developed by the farmers based on their traditional knowledge. There are many instances where farmers have given clues to scientists for improved, replicable farm designs. NGOs can play a very important role in exploring such cases.

## Motivation

In most of the state social forestry programs, barely 5-10% of the families take part directly in afforestation, except in a few areas where farm forestry already has a marketing link. In other areas there is a need to identify, with farmers, ways in which social forestry on private and public lands can benefit them. Experiences throughout the country have shown that only with motivated social workers do forest conservation movements, such as stall-feeding of livestock, become successful in India.

## Technical Inputs

Availability of good quality seed material of different tree species is another problem for tree-growing programs in the country. Presently, seeds are collected through contractors from unknown sources. As poor varieties tend to produce more seeds, we may be multiplying poor quality germplasm unless we act to improve the selection of seed source. NGOs can share this responsibility very efficiently.

Training farmers how to practice silvicultural operations is equally important for improving trees' productivity. So far, there are no facilities for this. NGOs can work as trainers at the grassroots level to assist the farmers.

## Marketing of the Produce

Marketing of both wood and non-wood produce of the trees is critical to the profitability of any tree-growing program. Yet organized markets are scarce, particularly in rural areas, and middlemen are exploiting both farmers and consumers. An assured marketing network should be set up to safeguard the farmers' interests and expand the demand for the produce. Government agencies cannot easily establish an efficient network at the grassroots level; reliable NGOs or farmers cooperatives could promote suitable marketing infrastructure. Small-scale collective operations may be able to reduce the overhead cost and increase the profitability of farmers.

## Conclusion

Although many efforts are being made to involve people and NGOs in promoting social forestry in India, no serious attempts have yet tapped the potential of these agencies. Trained, professional NGOs can certainly work at the grassroots level to motivate farmers, provide technical support, and help them market their forestry produce. NGOs can effectively link social forestry departments, forestry research institutions, and financial institutions on the one hand, and farmers on the other hand. Governments and donors should encourage competent NGOs to use innovative approaches in social forestry for farmers' benefit and environmental protection.

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# Farm Forestry Cooperatives in Maharashtra : Reasons for Success and Failure

*Vinayak Patil*

Good management is vital to the success of any venture. This has not been well understood in India, where there is a naive belief that knowledge of technology is all that needed. Good management with even second-rate technology can surpass poor management with the best technology. Marketing of farm forestry and agricultural produce has posed a major constraint to the development of rural economics. The small producer does not get a fair price for his effort, receiving only a small fraction of what the consumer ultimately pays; the middle man has enjoyed the lion's share. This system has proven counter-productive as the producer often gets so little that there is no longer an incentive to produce.

Social forestry and farm forestry programs have given much attention to technical aspects, including transfer of technology and supply of planting materials. However, the most important aspect – that of safeguarding the interest of the poor farmers with assured markets and remunerative prices for the produce – has received little attention. It is in this context that farmers' cooperatives can help alleviate social and economic problems through organized production, marketing, and distribution of benefits in a democratic fashion. The self-help approach is also a distinguishing feature of the farm forestry cooperatives in Maharashtra.

The cooperative movement in Maharashtra's agricultural sector, particularly in growing crops like sugarcane, has been a great success story. Farmers' leaders provide managerial skills in a democratic fashion. Strong trust and friendship must exist among the leader, his network of specialists, and the participating farmers.

## Success Story of the Nashik District Eucalyptus Growers' Society

The Nashik District Eucalyptus Growers' Cooperative Society was conceived in 1983, the first of its kind in Maharashtra as well as in India. The cooperative was organized primarily to cater to the needs of less privileged farmers in terms of availability of irrigation facilities. Most farmers with uncertain labor availability and markets for seasonal agricultural crops needed an alternative to the conventional agricultural cropping pattern. They needed an alternative that could ensure economic returns in a short period.

With the goal of quick financial relief to farmers, the cooperative started cultivation of fast-growing trees like *Eucalyptus* species on rotations of five and six years. Eucalyptus had the advantage of coppicing well and efficiently using limited water resources for producing maximum biomass. Eucalyptus has an assured market in the pulp and paper industry, and provides many other products, including posts, poles, firewood, charcoal, and particleboard. These factors are responsible for its adoption in many parts of India.

The Nashik District Eucalyptus Growers' Society was formed and officially registered under the Maharashtra State Cooperative Act on June 20, 1983. The

Society's chief aim is to promote scientifically-proven cultivation of eucalypts and other tree species as an alternative to conventional crops. The society also aims to organize marketing of tree products on a cooperative basis for maximum economic returns to farmers. To achieve this, the society also sets up processing units.

Any farmer can become a member of the society in Nashik District by paying a fee of Rs 1,000 per acre (approximately US$100 per ha). This fee was relaxed for poor farmers who found it beyond their capacity. For them, the amount of the share was reduced to Rs 50 per acre (about US$5 per ha) as partial payment of one share, enabling the farmer to secure membership in the society. The by-laws were amended to accommodate poor farmers in this way. The society provides farmers with technical guidance regarding Eucalyptus cultivation.

The chief aims of the Nashik District Eucalyptus Growers' Cooperative Society are to:

1. Organize a farm forestry extension campaign that stimulates farmers to plant commercially valuable and fast-growing species

2. Transfer relevant technology and impart necessary training to members for proper protection, maintenance and cultivation of the trees

3. Organize the supply of planting material

4. Organize harvesting and marketing of the produce from members' farms to ensure maximum economic benefits

5. Make institutional and fiscal arrangements conducive for setting up processing units, and undertake any activity or venture required for achieving the Society's aims

6. Start processing farm produce for making products like paper, rayon, oxalic acid, particle board, or wood-based materials required for building houses, etc., to ensure a wide range of product marketability

The Society now consists of 2,413 farmers in Nashik District (not including growers of *Jatropha curcas*), and Eucalyptus trees have been planted on 4,216 ha. The Society organized supply of planting material to farmers in collaboration with the State Forest Department and Social Forestry Department. More than 10,000 ha of *Jatropha curcas* (jatropha) have been planted. Jatropha produces an oil that can compete commercially with other fuels such as kerosene, diesel, and coal, and that is also useful in making soap.[1]

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[1]*For more information, obtain* Oil Gloom to Oil Boom: Jatropha curcas *from the author.*

## Harvesting the Tree Crop

For three years, the cooperative has organized harvests of five- to seven-year-old Eucalyptus trees. Farmers are advised not to harvest if the trees are found not ready for harvesting, but the final decision of when to harvest is left to each farmer. In some fields with better soil, proper cultivation, and adequate water supply, Eucalyptus trees are ready for harvesting within four years. In this case, the farmer is advised to harvest before the standard five-year period, so that he or she can maximize economic returns over a shorter rotation.

Once the decision to harvest is made, the society and farmer agree on a date of felling. Then the society's specially trained team of farm workers conducts the harvesting operation. The number and size of poles is recorded in the farmer's field. The poles are then transported to the cooperative's sale depot. There the poles are categorized according to length and girth classification, with each class placed in separate lots.

The poles are sold at a fixed price indicated for each length and girth class by the Society.

## The Society's Marketing Activities

Since 1988-89, the Society has evolved a system of marketing. During the first year sales amounted to 1.2 million rupees (about US$49,000). During 1989-90, Eucalyptus poles fetched 4.5 million rupees (about US$180,000). The third annual harvest is in progress and the sale results are awaited.

By evolving a systematic procedure for harvesting and marketing, the Growers' Society has proven its managerial capability and established its credibility among farmers. By standardizing the system of retail sale according to each length and girth class, the society obtains an average price of around 2,000 rupees (US $ 80) per ton, compared with 700 rupees (US$28) per ton that farmers would obtain by auction or individual sales. Cooperative farmers are thus compensated fairly for their produce. Consumers, generally poor, also benefit as they can select the material according to their actual requirements at the fixed retail rates, which are considerably lower than the prices fixed by timber traders. Timber traders are gradually accepting reduced profit margins.

Eucalyptus poles have a variety of uses in rural and urban areas. Horticulturists and grape growers in Nashik District use smaller poles to support tender plants. Poor villages use these poles for building huts. In cities, builders use these poles as a cheap alternative to scaffolding. Due to the overwhelming demand, the price of Eucalyptus poles has repeatedly increased.

In practice, the Society has successfully proven that by evolving a sound, rational and credible marketing system that could be truly called a "Sellers' Market," the producers of agroforestry products can get fair prices without punishing poor consumers. This is the hallmark of an efficient marketing system, a fact which both farmers and consumers have started to appreciate.

## Spread of the Tree-growing Cooperative Movement

The story of the success of the Nashik District Eucalyptus Growers' Society has spread throughout the State, and farmers in other districts of Maharashtra have come to the Society for guidance. More than 25 similar cooperatives have been formed in Maharashtra, and many more are being formed. This encouraging response of farmers led, in November 1990, to the formation of a state-level Federation of Agroforestry Cooperatives in Maharashtra.

## Diversification of Tree Crops

Farmers in the forestry cooperatives have diversified their tree crops to include other valuable species, including teak (*Tectona grandis*), bamboo (*Dendrocalamus strictus*), agave (*Agave cantala*), kadam (*Anthocephalus kadamba*), and jatropha. The choice of species is based on agroclimatic factors, irrigation, soil type, fast growth, and the ability to produce a variety of products for ready marketability.

## Cooperation from Financial Institutions

The success of the cooperative venture begun at Nashik has revived the confidence of financial institutions, including the National Bank for Agricultural and Rural Development. They have realized that with proper management and efficient marketing, agro- and farm-forestry projects can be economically viable.

## Cooperation from State and National Governments

The successful organization of the Nashik Cooperative has also attracted the attention and appreciation of the Government of Maharashtra and the National Wastelands Development Mission. The Government of Maharashtra has provided financial incentives by relaxing transit rules governing transport of farm forestry produce derived from species of Eucalyptus, Casuarina, Prosopis, and Leucaena. It has also exempted agroforestry produce from state sales tax. The National Wastelands Development Mission of Government of India, Ministry of Environment and Forests, has come forward to help the Agro-forestry Federation with technical assistance in research and technology extension.

## Factors for Successful Tree-growing Cooperatives

### 1. Attitude of farmers to cooperative discipline

The cooperative formula has worked successfully in Maharashtra for a long time, particularly in agriculture. The cooperative culture is well established among the farmers there. Cooperatives cannot succeed where people are not used to a collective approach.

### 2. Credible leadership

The farmers' cooperatives have been promoted in Maharashtra by experienced and capable leaders with a social equity orientation within a democratic framework. The leadership fulfills the managerial and entrepreneurial needs of the cooperative, although other individual cooperative members may be poor and illiterate and lack managerial capability. The cooperatives can compensate for such inadequacies.

**3. Credible and efficient marketing system**

The economic viability of a cooperative agroforestry venture depends on an efficient and credible marketing system which can ensure remunerative prices to the grower members.

**4. Appropriate choice of species**

The cooperative must select species that can grow well on a particular site, grow fast to rotation age, and above all be readily marketable, preferably backed up by an industry link. The choice of species must be left to the farmers and their cooperatives.

**5. Pragmatic and prompt institutional support**

A pragmatic and liberal approach by financial institutions regarding choice of species and spacing with an eye on economic viability can give a boost to cooperative agroforestry. The financial institutions also feel secure and safe to work with cooperatives.

**6. Support from state government**

Agroforestry is the only effective means to increase the area under tree cover and thus relieve pressure on government forests by meeting demands for fuelwood, poles, timber, and other products. Incentives in the form of simplified procedures for harvesting and relaxed forest rules applicable to harvest and transport of agroforestry produce can foster successful agroforestry cooperatives. Fortunately, the Government of Maharashtra has been very responsive and prompt in removing bottlenecks for cooperatives. Individual farmers could not expect the same response.

**7. Fiscal incentives for technology extension**

Fortunately, the Government of India's National Wastelands Development Mission has launched an innovative plan to provide incentives to agroforestry cooperatives. As it is true that "seeing is believing," demonstration plantations of agroforestry crops go a long-way toward convincing and motivating farmers to grow trees as an alternative and economically viable crop. Illiterate farmers may be slow to change, but once they see things happening, they pick up concepts very fast.

**8. Bio-technical support to provide genetically superior planting material to ensure uniform growth**

A significant lesson learned from the experience of growing Eucalyptus by the Nashik District Eucalyptus Growers' Society is that income from agroforestry

produce can be easily multiplied three or four times, simply by using superior quality planting stock that ensures uniform girth and height growth. The Agro-forestry Federation has joined this high-tech field by undertaking field trials of tissue-cultured plantlets, with the help of experienced institutes like the National Chemical Laboratory in Pune. The Federation will collaborate with such agencies to ensure supply of genetically superior planting stock to the grower members. This will give a further boost to cooperative agroforestry and ensure its success.

Tree-growing can bring about ecological rehabilitation of our barren agricultural lands and wastelands. It can also help usher in an era of all-around social and economic development on a self-sustainable basis and rejuvenate the country's economy.

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# Social Forestry and Farmers' Responses : Experiences of a Voluntary Agency in Karnataka

*M.N. Kulkarni and M.K. Renukarya*

## Taralabalu Rural Development Foundation and its Work

Taralabalu Rural Development Foundation (TRDF) is a development wing of Taralabalu Brihan Math, a 100-year-old secular humanitarian organization devoted to the excellence of human beings. The Brihanmath, or Buddhist monastery, runs more than 152 schools, colleges, and free hostels in different parts of Karnataka. It has a total staff of 2,000 teachers, 20,000 students, and several thousand hectares of school lands and agricultural farm lands. TDRF was founded in 1982 to promote growth in the land and people. In 1984, with the help of Society for Promotion of Wastelands Development, New Delhi, and the Forest Department of Karnataka, TRDF initiated social forestry programs in districts of Karnataka. Our activities consisted of:

- School nurseries in which school children are taught to raise seedlings under the guidance of crafts teachers, with the seedlings turned over to the children and their families
- Developing village common lands, or *gomals*
- Persuading farmers to grow trees with crops (agroforestry)
- Developing biomass reserves in 1,000 acres of land leased by the Taralabalu Brihanmath to demonstrate the importance of biomass production and management.

## Experience with School Nurseries

In the last five years, hundreds of high school students have learned about seed selection and germination, seedling care, and transplanting seedlings to their home gardens. The program also distributed seedlings to farmers for planting and protection. We found that timing of the nursery activity is important -- the vacation months of March to May were bad for growing seedlings because students were not around to water the seedlings. October is the ideal month to start, so that by May the saplings are mature enough to withstand summer months. The program worked through crafts teachers, who otherwise had not enough to do. TRDF is now documenting the long-term impact of school nursery activities in terms of students' "carry home" knowledge on plants and how to produce and protect them.

## Developing Village Common Lands

Developing village commons has proven a most intractable problem. To date we have developed 10-12 village commons, known as *gomals*, and in each case we came up against village politics, economics, and sociology. Politics because all

the commons had been encroached, and the encroachers suspected that TRDF would seize the land from them. We had to explain to villagers that TRDF was interested only in facilitating development and protection of the commons, but the initiative must come from the villagers. In some villages, the revenue authorities stopped TRDF from entering the *gomals*, also thinking that TRDF was a potential 'encroacher'!

The economics of commons development had to be explained, including the value of *gomals* grass and how buffaloes, if stall fed, would give more milk and farmers would get more income. As a result, buffaloes are now increasingly stall fed.

The sociology of *gomals* use presented problems of equitable sharing of their produce of grass and fuelwood, often by caste. TRDF assumed at the outset a theory of unequal sharing in which only the poor would get grass and not the larger landholders. But this did not work in our *gomals* at first. It required appeals from TRDF to landowners to be generous enough to surrender their rights to the commons grasses to the landless poor. This has had success. We are now documenting the experience of each village *gomal* development as a case study, so that the lessons might be useful to other villages.

## Agroforestry

Agroforestry has proved the most frustrating experience for TRDF. In 1985 when the school nurseries raised a variety of seedlings, we thought villagers would freely come and take them. Some villagers did, never before having considered growing trees on their agricultural lands as profitable. Some of the children pressured their parents to plant their seedlings on their land! Some parents planted seedlings on their farm land bunds. But many simply threw the seedlings to their cattle, or dumped them in compost pits! Swamiji, the head of the monastery, organized seedling distribution programs, and many farmers pledged that they would plant the seedlings and protect them.

But TRDF soon realized that in general, farmers are not interested in growing trees on their cultivated lands. TRDF set up a demonstration of the profitability of growing crops with trees. Farmers in the project area expressed genuine fears that:

- trees' shade would destroy their other crops or reduce the yield
- trees would take away valuable land-space from the crops
- tree roots would destroy other crops
- once planted, trees would take many years to be cut and sold. They may not get a better price for the tree crop compared to the food crop yield.

As in many parts of India, Eucalyptus had no market advantage in TRDF's area. In Punjab, Haryana, and other parts of India, Eucalyptus logs are rotting. Many farmers asked TRDF for assured markets for the trees.

In TRDF project areas, government agricultural and forest agencies do not coordinate with each other. Agricultural extension officers and crop specialists do not advise farmers about growing trees. Forest officers never speak of growing trees with crops. Agroforestry extension specialists are needed in the agricultural offices at local and district levels.

## The Importance of Marketing

Our experience is still evolving. We have no answers for many of the questions raised by farmers in our area. Marketing is the **most important** problem. Without marketing arrangements, farmers are not interested in agroforestry. As one farmer said, "Trees are a sunk capital in my crop land. I do not want to lock my investment in trees."

Unfortunately, at the policy level, agroforestry is still not a priority. As public lands become scarce, only farmers' land remains for growing trees.

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# Tree-Growing in Dryland Farms in Tamil Nadu

*E.S. Thangam*

This paper describes tree planting in rainfed farmlands in Tamil Nadu, India. In the late 1970s the National Commission on Agriculture recommended large-scale tree planting through social forestry programs. Currently, the Social Forestry Programme is active in 14 states in India, planting trees on community wastelands.. Still, there is much scope for growing trees on rainfed farmlands.

## About Tamil Nadu

Tamil Nadu, the southernmost state in India, receives an average annual rainfall of only 800 mm, most of it from October-December. As of 1984, about 3.4 million ha of the 6.9 million ha cultivated were categorized as dryland, with an annual rainfall of 500-600 mm (Statistics Bureau 1985).

About one half of the state's population lives in this dryland area, accounting for roughly 30% of the Gross State Product. About 60% of dryland farmers control less than 1.5 ha each, according to the Social Forestry Project in Tamil Nadu (SFPTN)(1989). Many of these fall below the poverty line, as measured by a daily consumption of 2,250 calories.

## Dryland Farming and Agroforestry

Little has been done to increase productivity and income from these dryland areas. The Green Revolution in agriculture concentrated on irrigated land, as have government programs to provide inputs of fertilizers, plant protection chemicals, and seeds of improved varieties. Only recently have there been attempts to improve the productivity of dryland farming methods.

Dryland farming generally means growing one seasonal crop with the irregular monsoon rains. Due to the limited availability of labor and other resources, considerable areas have been left fallow; according to SFPTN, 600,000 ha in Tamil Nadu are 'permanent fallows,' or land that has lain fallow for more than five years.

Although tree planting has been advocated since the 1950s, it has been mainly through occasions like Vanamahotsava (the Festival of Forests). Dryland farmers generally did not take part, although many have for a long time planted trees around their homes, irrigation wells, and field boundaries. Extension agencies did not approach them with agroforestry technology packages.

As agroforestry combines the growing of trees with agricultural crops and/or livestock for sustainable land use, it shows greater potential for meeting dryland farmers' needs than farming agricultural crops alone.

## Existing Activities in Soil Conservation and Agroforestry

The Social Forestry Project of the Tamil Nadu Forestry Department, funded by the Swedish International Development Authority (SIDA), includes a component 'Agroforestry in Drylands.' Since 1988, this component has aimed at providing dryland farmers with a package of agroforestry practices, including silvipasture. For this purpose, on-farm trials are being conducted. The Project has provided incentive payments for farmers who plant and maintain 500 tree seedlings for two years.

NGOs have organized local programs for promoting agroforestry. The Anthyodha, Tiruchi, Boys Town, Madurai, Assefa, Natham, A.M.M. Murugappa Chettiar Trust, Rajapalayam, and Krishnamurthi International Agricultural Development Foundation (KIADEF), Madras, have worked with selected villages. The main approach has been to assist farmers to grow tree crops and agricultural crops in various combinations.

These NGOs have helped farmers construct soil conservation bunds to manage and conserve rain water. Micro-catchments of about 20 square meters or more were prepared using the saucer pan or corner pit method to make more rainfall available to tree seedlings. Fast-growing trees are planted at 2-m intervals, while longer-lived trees are planted at 5-m spacing. Generally, 4-meter-wide 'alleys' are left between rows of trees for cultivation of other crops.

NGOs have grown tree seedlings of *Azadirachta indica* (neem), *Derris indica* (pungam), *Leucaena leucocephala* (subabul), *Sesbania grandiflora* (agathi), *Eucalyptus* species, *Agave sisalana* (agave), *Ceiba pentandra* (kapok), *Anona squamosa* (seethapal), bamboos, and *Tamarindus indica* (tamarind). Farmers grew agricultural crops of sorghum, pearl millet, and pigeon pea among the trees until the canopies closed in about the third year. From then on they received income from harvests of kapok, subabul, and agathi; starting in the eighth year they harvested produce from the tamarind, bamboo, neem, pungam, and the other trees. The NGOs stressed the ability of nitrogen-fixing trees to enrich the soil. Generally, farmers were happy with the additional income received through this program.

Krishnamurthi's activities illustrate what is needed in introducing a new technology like agroforestry. In addition to technical guidance for soil conservation works and seedling production, KIADEF provided seeds and conducted training to the farmers and other NGOs in nursery raising. Its extension efforts included use of local folk arts like puppet shows and *villupattu* (singing with bows) to create popular awareness of the importance of tree growing.

In the future, farmers will be encouraged to organize a tree growers' cooperative for greater collective access to government subsidized fertilizers, seeds, and plant protection chemicals, and for organizing marketing channels for the tree produce. Although the SIDA-funded project's second phase will end in March 1993, there is already a proposal to extend it for a third five-year phase.

## Policy Support

Currently farmers need permits from the forest department to transport trees grown on their lands to market. This policy should be relaxed to give the farmers an incentive to grow trees.

Another incentive would be for easier access to credit for starting economically viable projects. Loans from the National Bank for Agricultural and Rural Development should be available through lead banks.

The government of Tamil Nadu has allotted Rs. 10 million (about US$400,000) for development programs in each local 'block'; some of this money will be available to support tree-growing activities.

## Lessons Learned

The NGOs' work indicate that the most important aspects to consider about on-farm tree growing are:

- o select trees that yield a quick return to the farmer
- o plant seedlings at the right time and place
- o arrange for maintenance and protection of planted seedlings
- o understand the harvesting operations
- o arrange marketing for tree produce

Programs must involve the landowners from the planning stage onwards to ensure their cooperation and willing participation. Programs in Tamil Nadu were more cost-effective where they covered an area of 50 ha or more, pooled by willing farmers.

With these lessons and policies in mind, there is good scope for agroforestry in Tamil Nadu.

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# A Cheap Method of Soil Conservation :
## A Combined Social and Technical Approach in North Sumatra

*Sebastian Saragih*

As an NGO active in conservation, BITRA Indonesia is concerned about critically fragile watersheds like the Bah Hisam River watershed in North Sumatra. The river provides irrigation for the Deli Serdang district, the great rice basket of North Sumatra. From 1960 through the 1980s, the watershed was endangered by extensive logging conducted near Kotarih, a village about 70 km southeast of Medan, the capital of North Sumatra province.

Kotarih is a village of about 4,700 people, located in a hilly area of Kabupaten Deli Serdang. Sixty percent of the people are farmers owning 0.5-0.8 ha of land each; 30% work as farmhands on other land; and 5% earn daily wages as workers on private rubber estates. The remainder are merchants and village administrators. The village receives 1,846 mm rainfall annually, feeding the headwaters of the Bah Hisam River. The land's slope ranges from 30-60 degrees.

Some of the critical land in the area is owned by absentee landlords, who neglect the land in favor of their more fertile holdings. However, most of the critical land in Kotarih belongs to the state, which granted the logging concession. Although reforestation was a condition of the concession granted in 1960, the logging company ignored it and did not replant. The Forest Service had no budget to replant the critical land, a task made more difficult by the remoteness of the site. Several mass tree-plantings were conducted as Environment Days with public participation, but without follow-up maintenance, seedling survival was poor.

Instead, poor farmers followed the logging company in and took up shifting cultivation on the cleared land from 1970 to 1980. As soil fertility declined drastically due to erosion and nutrient mining, the cultivators returned to the village and the degraded forest was again left as bare slopes.

Farmers were reluctant to invest effort in planting trees on the land because they had no secure tenure to the state-owned land. Any improvement to the land would draw attention from other, more powerful people who might then lay claim to the land. Instead, the poor farmers chose to work as wage laborers on nearby private estates during the growing season, and in the dry season took jobs in the lowlands breaking stone for building and road construction. By 1986, the critical land in this village had grown to an estimated 400 ha.

### The NGO's Approach

In 1987, BITRA (Bina Ketrampilan Pedesaan, or 'Activators for Rural Progress') started discussing these problems with the people of Kotarih. These discussions followed earlier work by BINTARNI ('Youth Farmers for Rural Development'), BITRA's forerunner. The discussions were intended to determine the causes of the problems, what options were available, and how these could be realized. BITRA also set out to make the villagers realize that the problem and its

solution were their responsibility. From these discussions grew a proposal for reforestation.

BITRA found that the villagers were concerned not with ownership of the land, but with the right to work the land and harvest the produce. BITRA therefore applied to the subdistrict head to allow poor farmers who would reforest the land to manage it responsibly for food crops also. The government would retain ownership of the land, while the farmer would gain the produce. Sites within 50 meters of the river were considered the most critical for conservation.

When this proposal was accepted, BITRA explained the arrangement to the villagers. As it happened, only small-scale farmers were interested. Farmers with more land were put off by the poor soil fertility and rough terrain.

The soil conservation activities was carried out in groups, involving: land clearing, terracing, nursery care, and outplanting of seedlings. Groups worked together twice a week, with farmers continuing their individual livelihood activities the rest of the time. A group of 18 persons worked an area of 15 ha. Farmers planted rubber trees, along with bananas, peanuts, corn, and chili peppers for short-term cash and food needs. Trees planted included Leucaena as a shade and fertilizer crop, coffee, and cacao.

*A Kotarih farmer group plants trees. Photo: BITRA.*

In addition to technical assistance and organization, BITRA provided tree seeds, including seeds of Leucaena. The project received funds from the Asian Community Trust, based in Japan, and World Education of California, U.S.A. Assessments of promising technologies were based on information obtained from the Department of Agriculture and other agencies.

BITRA acted merely as a link between the poor farmers and the government. The two- and three-year licenses from the subdistrict head enboldened people to work the land by the river and plant trees of Leucaena, rubber, cacao, and other species. The government benefits as the people actively share its responsibility for good resource management.

## Project Results

By 1991, the project had:

1. Motivated the farmer groups to work other critical land, with the government's blessing. This prompted the private landowners with critical sloping land to manage their holdings more intensively, as they feared that if they did not, poor farmer groups would take it over.

2. Regreened the bare sloping land, and increased farmers' income. Rubber trees are now being tapped. Cacao, banana, chili pepper, and other annual crops are all producing.

3. Obtained government land certificates for the groups involved.

## Conclusions

Conservation of the critical land in Koratih was cheap because people participated fully. The BITRA approach is much more economical than government methods of conservation, in which a rubber farmer receives approximately 3 million rupiahs (about US$1,500) for each ha of land planted to rubber. Moreover, the government's program for conservation through rubber planting is not selective with regard to participant planters; often the rich receive loans for planting, and for uncreative planting schemes.

The important lessons are the following:

1. There are great expanses of environmentally critical land, and many farmers without land.

2. The major plants are those that farmers have planted before, and that provide alternatives to support their living.

3. The NGO acted only as a mediator to identify and coordinate the needs of farmers and the government.

Natural conservation is everyone's responsibility. On behalf of BITRA Indonesia, I invite you all to visit our activities in North Sumatra and give us your views so that we may continue to improve our work.

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# Opportunities for Upland NGOs in the Philippines

*Romulo A. del Castillo*

## Introduction

In the last five years, developments in the Philippines have created greater opportunities for NGOs to be involved in government development programs. The People Power that ended the Marcos regime in 1986 brought new government programs that mandated participation of NGOs in health, education, and rural development.

This paper focuses on upland NGOs involved in programs of the Philippine Department of Environment and Natural Resources (DENR), examining key upland development programs with NGO participation. This paper also describes an innovative assistance program by concerned NGOs and resource institutions, and highlights opportunities for building NGO capabilities in agroforestry and related on-farm tree-growing technologies through training.

## DENR's Recognition of Upland NGOs

Upland NGOs in the Philippines have emerged at a phenomenal rate in the past few years. Their numbers have rapidly increased with the growing number of government programs requiring NGO participation.

Previously marginalized, the uplands areas of the country have become a focus for development in recent years as increased population pressure from lowland migration has further endangered these fragile ecosystems.

To manage its work with NGOs, DENR in 1989 established an NGO Desk in its Special Concerns Office. The NGO Desk:

- promotes greater DENR-NGO collaboration
- ensures NGO participation in DENR programs
- provides a mechanism for accrediting NGOs involved in natural resources management projects
- channels assistance to NGOs and community-based groups known as people's organizations (POs), and responds to their complaints and suggestions

In the context of its programs, DENR uses the term "NGO" to refer to private, non-profit voluntary organizations committed to socioeconomic development and established primarily for service. This includes cooperatives and other POs that exist for these purposes. Their participation in government programs generally involves: planning and policy formulation, project implementation, monitoring and evaluation, information and education campaigns,

law enforcement, community organizing, and training.

DENR classifies NGOs into the following categories:

- o civic organization, academe-based NGOs
- o private foundations
- o people's organizations
- o religious organizations
- o alliances or federations of NGOs
- o developmental NGOs

These are accredited on the basis of: field experience, integrity and commitment to environmental and social issues, reputation and social acceptability, proximity to the proposed project, adequacy of basic resources, and technical capability. About 580 NGOs are now accredited and included on the NGO Desk's master list.

## Principal DENR Programs with NGOs

NGOs now constitute a major force in urban and rural development in the Philippines. In the natural resources sector, NGOs are active in implementing DENR programs, including: the Integrated Social Forestry Program (ISFP); the National Forestation Program (NFP); the Forest Land Management Agreement (FLMA); and the Community Forestry Program (CFP).

### The Integrated Social Forestry Program

ISFP began in 1982 to address the twin problems of rural poverty and ecological stability in occupied forest lands. Through ISFP, forest land occupants are provided secure access to land and technical and material aid to make the land productive without depleting it. Secure land tenure comes through either Certificates of Stewardship Contract (CSCs) for individuals, or Community Forest Stewardship Agreements (CFSAs) for community organizations. In both cases, farm families are granted renewable 25-year leases on the public land which they occupy and cultivate. In the first years of the lease, the farmer receives technical assistance for developing self-sufficiency and sustainable farming practices.

The program provides assistance in the areas of agroforestry, land tenure, and community organizing. Community organizing is applied to mobilize groups to obtain stewardship contracts, promote agroforestry and soil/water conservation, and build local institutions. ISFP emphasizes improvement of existing farmer practices, not introduction of new ones except in rare cases. Participatory strategies are used to gather data, diagnose field situations, and monitor technical problems. Cross-farm visits and training courses develop farmers' skills in agroforestry and organization. In the process, community leaders are prepared to take responsibilities for continued development after the end of the project, tentatively set at five years.

DENR's Upland Development Program (UDP) began in 1980 as the main research arm of the DENR for community-based projects in the uplands. It develops the research tools used in ISFP.

The Upland Development Working Group (UDWG) provides program direction and closely monitors the UDP. The Working Group is composed of staff of related DENR offices, NGOs, and academic resource institutions, and is chaired by the DENR Undersecretary for Field Operations. NGOs involved include the Philippine Association for Intercultural Development (PAFID), which organizes cultural communities and helps them secure access to land through individual or community leases. The Philippine Business for Social Progress (PBSP), also a member of the Working Group, helps with community organizing activities in DENR. University-based NGOs provide technical support in how to conduct process documentation and research monitoring, develop project monitoring systems, and improve agroforestry practices.

Through its Agency Technical Committee and task forces, including its regional committees, the UDWG decides on issues of upland policy adjustment and refinement of field activities.

**The National Forestation Program**

Started in 1988, the NFP integrates reforestation, watershed rehabilitation, and timber stand improvement. The program's reforestation activities replant denuded forest lands with indigenous and introduced species of forest trees, including fruit trees, bamboo, and other species with industrial uses. One of the strategies used in areas covered by cogon grass (*Imperata* sp.) where broad-leaf tree species grow naturally, is Assisted Natural Regeneration. This is where silvicultural techniques, such as augmentation planting of several climax species, liberate the native broad-leaf trees from competing grass. The result is a multi-storey, mixed species forest stand produced at a relatively low cost.

Watershed rehabilitation activities aim to minimize soil erosion and restore ecological balance. Timber stand improvement and enrichment plantings in second-growth forests remove inferior trees and other vegetation for better growth of future tree crops. In some cases, this involves planting desirable tree species.

Upland settler families, community and civic/religious organizations, entrepreneurs, local and other government offices, and other NGOs may enter contracts with DENR for any of the above NFP activities in areas identified by DENR. The contract may be for project implementation, community organization/training, or monitoring and evaluation. Contract reforestation is usually divided into the activities of seedling production, plantation establishment, infrastructure development, and maintenance and protection.

**The Forest Land Management Agreement**

FLMA is a way of making benefits of the NFP available to the people who plant and care for trees in newly reforested areas, granting farmers access to these areas for purposes consistent with sound ecological principles. When the reforestation contract terminates NFP after three years, the contractor may apply

for an FLMA if at least 80% of the trees planted are surviving and properly maintained. Family contractors must organize in associations or cooperatives covering a total area of at least 100 ha. DENR employs local NGOs to help organize communities and train them in forest management.

Like ISFP contracts, FLMA leases are for 25 years and renewable. The contractor may use the area to grow and harvest minor forest products or interplant cash crops, fruit trees, and other agricultural crops. The contractor may harvest, process, and sell timber when the trees mature, following principles of sustained yield forest management. In return, the contractor must replant the area with the same forest species, and provide DENR a share of the proceeds from the sale of forest products. DENR's share equals the cost of reforesting one hectare of denuded uplands multiplied by the number of hectares harvested.

**The Community Forestry Program**

When residual forests are abandoned by timber licensees, they are usually treated as common property resources, tending to be misused and degraded. For this problem, DENR established the Community Forestry Program (CFP).

CFP makes upland dwellers stewards of residual forest areas. Communities are awarded 25-year Community Forestry Management Agreement (CFMA). Again, these agreements are renewable for another 25 years if mutually agreeable to DENR and the community. The community organization can harvest, process, and sell forest products from the area according to a management plan submitted to DENR beforehand. The plan must comply with prescribed rules and follow principles of sustained yield management.

Under the Community Forestry Program, DENR assists the holder organization to set up and strengthen the community organization. This includes on-the-job training in resource inventory, preparation of forest management and conservation plans, and developing livelihood opportunities. For this assistance, DENR employs qualified NGOs.

## Opportunities for NGOs to Help Each Other

These contracting opportunities for NGOs have benefitted service-oriented NGOs with few resources, but have also fostered the formation of NGOs based on self-interest, including "contract reforestation organizations." Many contracting NGOs were organized strictly for business reasons. Still, many NGOs involved in government contracts have long-term goals, and often their own assistance programs predated their government contracts. Some of these NGOs started by working with lowland villages and have only recently begun working in the uplands. For all of these NGOs, the complex upland problems pose new challenges of working where:

- people have little or no access to credit and markets
- communities are often inaccessible by road, households are widely dispersed

- o planting materials are scarce, often adequate only for subsistence needs
- o making farms productive requires special skills
- o the people still resent past prosecution by DENR agents for trespassing and other legal violations. Without secure access to land, it is very difficult to mobilize them for long-term development

To address these problems, a group of experienced, Manila-based NGOs and academic institutions organized in 1989 to form the Upland NGO Assistance Committee (UNAC). UNAC institutions work together to support NGOs involved in agroforestry, land tenure, and marketing in the uplands. It is a forum through which upland NGOs share experiences and expertise, and receive services that support their programs in these areas. UNAC thus helps newer NGOs to improve their abilities to carry out development projects.

The paper "NGOs Supporting Each Other" by George Bañez describes UNAC's composition and activities in more detail. Briefly, UNAC renders technical assistance to upland NGOs in three basic areas: agroforestry, land tenure, and marketing. It disseminates training materials, conference proceedings, manuals, sound slides and directories, and conducts workshops, seminars and training courses. UNAC also helps to organize exchange programs, and facilitates dialogues and policy reviews among government institutions, NGOs, POs, academic institutions, and business corporations.

The two major activities conducted by UNAC during its first year of operation, with funds from the Ford Foundation, were to prepare profiles of NGOs and conduct the First NGO Consultative Workshop. To date, UNAC has profiled some 48 NGOs throughout the Philippines. Each NGO profile includes a brief history, summary of objectives, relevant activities, geographic areas of operation, program strategies, sources of funds, and the contact person. The Philippines Uplands Resource Center (PURC) has recently published these profiles for UNAC as a directory, *NGOs in Agroforestry, Land Tenure, and Marketing in the Philippine Uplands*.

The First NGO Consultative Workshop helped UNAC to review the needs of newer NGOs involved in sustainable upland development. From this basis, UNAC formulated a strategic support program for upland NGOs, and their relationship with community-based resource management programs of DENR. The workshop also validated UNAC's selection of the three basic areas of support it had identified. UNAC then distributed its work among its members (Table 1).

**Table 1.** Distribution of responsibilities within UNAC.

| Institutional Member* | Main Area(s) of Assistance Under UNAC |
|---|---|
| KEF | Agroforestry technology transfer (PD), and marketing |
| PAFID | Agroforestry technology transfer (national cultural communities), and securing land tenure |
| PBSP | Community organizing, marketing, and resource accessing |
| PhilDHRRA | Community organizing, cross farm site visits, and resource accessing |
| PURC | Information service for UNAC |
| SALAG | Securing land tenure |
| UPLB | Agroforestry technology transfer (NGOs) |

*See the paper by George Banez in this report for a description of each.

## Training Opportunities for Upland NGOs

Based on the support program developed at the workshop, UNAC members made their own assistance programs. The proposed programs were reviewed by the group to make sure they answered the priorities identified at the workshop and complemented each other.

Capability-building through short training courses is a big part of UNAC's program. Some of these courses are described below.

### Training Courses Offered by PBSP

- Community Organizing Skills Development (14 days) - reviews NGO approaches for organizing upland communities around land tenure, agroforestry, and marketing; and studies government policies on land tenure, stewardship contracts, and social forestry to help participants understand how to select appropriate strategies.

- Community Organizing Program Management (10 days) - discusses approaches to development *vis-a-vis* poverty in the uplands; evolves. appropriate management tools and systems for a community-organizing program; and identifies supervisory techniques.

- Agroforestry-based Enterprise Development (10 days) - discusses the bases for enterprise identification and planning; reviews principles and management of marketing; and develops basic skills in agroforestry-based enterprises and marketing management.

- Agroforestry Enterprise Development and Marketing Assistance Program Management (8 days) - reviews opportunities and threats in

the uplands and their implications for NGO programs; identifies appropriate management tools and systems; and identifies and practices with appropriate supervisory tools and techniques.

**Training Courses Offered by the UPLB Program for Upland NGOs (UPUN) under the UPLB Agroforestry Program**

- Agroforestry Production and Post-Production Systems (3 weeks) - reviews agroforestry systems, identifies bases for and methods of evaluation, and selection and use of appropriate production and po production technologies.

- Seed Technology and Nursery Management (2 weeks) - reviews applicable technologies for producing cheap, high-quality planting materials and effective nursery management for agroforestry.

- Integrated Pest Management (1 week) - covers concepts and practices including familiarization with major agroforestry pests, their biology, ecology, and control.

- Soil and Water Conservation and Management (2 weeks) - deals with cost-effective soil and water conservation measures and manag ment appropriate for agroforestry production.

- Technology Verification Through On-Farm Trials (1 week) - focuses on technology development and how to evaluate and verify agroforestry technologies on the farm.

*A farmer stands beside her hedgerows grown to provide fertilizer for the crops nearby. Photo: MFI.*

These courses were designed by multidisciplinary teams based on analysis of the problems expressed by NGOs at the First NGO Consultative Workshop. The curriculum is evenly divided between classroom discussions and field exercises. Near the end of each course, participants must prepare a plan addressing the key issues in the places where they will work. Completed plans are critiqued by the whole class.

## Concluding Remarks

This paper illustrates only some of the creative opportunities by which NGOs can help relieve rural poverty and rebuild the Philippine uplands. The recent explosion of upland NGOs is both good and bad. It is good in that it reflects the fact that the government's eyes have at last opened to the great potential of NGOs as working partners in development. Probably more importantly, it clearly indicates that government has matured to the point where it can share authority with NGOs in the management of the fragile uplands, which previously had been the exclusive domain of government.

On the other hand, the rapid rise in the number of NGOs involved in upland development could erode the NGO community's technical credibility. Increased competition for government- or foreign-funded projects can be an irresistible temptation for some NGOs to take short cuts. If NGOs do not learn to

police their own ranks soon, they may fall victims to the same loss of credibility experienced by some government projects.

Another concern is institutional sustainability. Unlike governments, which have a steady source of core funding, most NGOs must rely on external funding sources. These are almost exclusively available for short-term projects. As a result, NGOs' futures are often uncertain. Project priorities are often dictated not by an NGO's own perception of development needs, but by the funding agency's priorities. One example is the choice of planting materials in contract reforestation. Often, a contracting NGO must plant prescribed tree species, even if its own analysis indicates other species would be more appropriate.

These problems may not have immediate solutions. Still, the development community must be aware of them so that they can continue to search for ways to address them.

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# The Mag-uugmad Foundation's Approach to Agroforestry

*Lapulapu Cerna*

## Introduction

The roots of the Mag-uugmad Foundation go back to 1981, when the Cebu Soil and Water Conservation Program began. Assisted by World Neighbors, the program was designed to address the problems of (1) severe erosion and declining soil fertility; (2) low income levels of upland farmers; and (3) the flooding of lowlands and the decrease of potable water sources in mountainous areas.

Cebu is a long, narrow island (200 km x 40 km) located in the Central Visayas region of the Philippines. Its land area is about 405,000 hectares, mostly rugged and hilly terrain except along the coastal areas in the north. Seventy percent of the island has slopes greater than 18%. The island has been severely deforested. The estimated soil loss in the last comprehensive soil survey (1953) for the island was 700 million cubic meters or an average of 13 centimeters of precious topsoil for all arable land. Recent satellite photos show that the virgin forest cover has been entirely removed.

Population pressure on the land is severe. The average farm, primarily rainfed, is about 0.75 ha and can barely sustain its six-person family. As a result, people migrate to the city. Much of the out-migration is absorbed by Cebu City, the country's second largest urban center.

The Cebu Soil and Water Conservation Program addressed environmental problems in Guba, a small *barangay* (village) located in the mountains behind Cebu City and in the southern municipality of Argao. In 1984, the program added another site, Pinamungajan. Another program was recently established in Santo Domingo, Albay, Luzon, in collaboration with the International Institute of Rural Reconstruction.

World Neighbors started the program with no local organizational counterpart. So in June 1988, the program and another World Neighbors project working on coastal communities started the Mag-uugmad Foundation, Inc., a local organization for program activities. *Mag-uugmad* is the Cebuano term for tiller. The Foundation's Board of Directors is composed primarily of the staff of the two programs, comprising three farmers and one fisherman.

This case study is about agroforestry approaches practiced by the participating farmers in Guba, Argao, and Pinamungajan.

## The Project Sites

Guba is a barangay about 25 kilometers from the center of Cebu City, with an elevation ranging from 200 to 600 meters above sea level. The community is

quite hilly, although some areas have only gentle slopes (less than 10%). The soil is heterogenous - generally acidic with some outcrops of coral limestone. They are primarily heavy clay loam with slight to severe erodibility. Annual rainfall is 1,600 - 1,800 mm, most of which falls from June to December. No month is entirely dry.

Crops include vegetables, flowers, fruits, root crops, and grains. Goats, hogs, chickens, and cattle are raised for food, income, and organic fertilizer. Firewood gathering and charcoal production are other major economic activities. All lands are privately owned and farmed by individual families. Some land is cultivated under share-cropping arrangements with local and absentee landowners.

Argao and Pinamungajan are located on opposite sides of the southern part of the island. Soils of both municipalities are of limestone origin with high pH values, ranging from 7.2 to 8.2. The soil is generally shallow, with virtually no topsoil remaining on the steeper hillsides. Elevation in Argao ranges from 300 to 700 meters; farms in Pinamungajan range from 25 up to more than 300 meters above sea level. Annual rainfall in these locations is about 1,500 mm, most of which falls between June and December. February to May are dry months.

Major crops are maize, cassava, sweet potato, and banana. Vegetables such as onions, tomatoes and sweet pepper are also grown.

The rugged area's poor roads and limited transportation facilities make access to markets a major problem in Argao. The farming areas in both municipalities are 2-15 km from the market place.

Both project sites are considered government forest lands.

## Problems

Environmental degradation is worst in Pinamungajan, where the rocky calcareous soil that remains is infertile. Irregular seasons dominated by long dry periods and flush rains in between have resulted in extremely low crop yields. The hard rains flood the lowlands, damaging crops and silting marine ecosystems. The fish catch has greatly reduced in once-rich fishing waters. Both fishermen and farmers are poor. The most difficult problem is that most people in the area do not realize how their traditional practice of "slash-and-burn" monocropping has contributed to the exhaustion of their resources.

## The Mag-uugmad Approach

The farmer-based extension system of the Mag-uugmad Foundation, Inc. is anchored in the following principles. First, a sustainable farming system must be **economically viable**. Each production system must provide an adequate return on investment. Second, it must be **environmentally sound**. Third, it must be **culturally and socially acceptable to the people**.

The Foundation employs the six-step approach of community development methodology:

1. Start where the people are
2. Discover the limiting factors
3 Choose a simple technology
4. Test the technology on a small scale
5. Evaluate results
6. Train trainers to spread the technology

In initial meetings with farmers, program staff emphasized that the program would work to overcome fundamental factors limiting farm production by showing farmers technologies that could help them solve their problems. The staff also stressed that the program would not offer financial assistance or dole-outs, in contrast to farmers' experiences with other agencies. The program participants themselves would judge whether the practices could produce adequate returns to their time and labor.

**The First Step: Soil and Water Conservation**

The first step to increase crop yield was to improve the soil's condition and conserve water. Soil and water conservation, soil fertility management, and cropping systems aim to (a) stop soil erosion and conserve water; (b) improve soil fertility; and (c) improve yields of their cropping systems.

The soil and water conservation practices that participating farmers adopted may be divided into two methods:

1. **Vegetative cover**. By planting trees and cover crops in small woodlots (preferably on the upper portion of the land) and along boundaries, farmers reduce soil erosion, improve soil moisture and fertility, and obtain fodder, fuelwood, timber, and food. Multipurpose trees serve most of these needs. Most commonly planted species are *Leucaena leucocephala* (the most popular tree before the infestation by the psyllid pest), *L. diversifollia, Gliricidia sepium, Sesbania grandiflora, S. sesban, Albizia* sp., *Cassia siamea, C. spectabilis, Calliandra tetragona,* and *C. calothyrsus*. These trees thrive in diverse and harsh conditions. Other trees commonly planted for timber are *Gmelina arborea* and *Swietenia macrophylla* (mahogany). Fruit trees are among farmers' favorites, including *Artocarpus heterophyllus* (jackfruit), *Persea americana* (avocado), *Chrysophyllum caimito* (caimito), and *Mangifera indica* (mango). Several indigenous species are also planted for timber and fuelwood.

   Shrubby and bushy trees are also planted in feed lots and hedgerows along contour lines. These provide livestock feeds and green manure. Leguminous species most commonly planted in hedgerows are *Flemingia macrophylla, Desmodium rensonii, Sesbania sesban, Cassia*

*siamea*, and *Desmantus verigatus*. Broadleaf indigenous species like *Alnus* species are mixed with leguminous species.

2. **Mechanical Measures**. In this method, farmers construct contour and drainage canals to remove excess water from the fields, and soil traps and check dams to stabilize the soil. Related technologies include bench terracing, contour plowing, hedgerow planting, in-row tilling and rock wall construction. Not all participating farmers use all these practices, but this list supplies a range of conservation farming options for sustainable upland farm management.

### Soil Fertility Management

To improve the depleted, stony topsoil, farmers must first increase organic matter by applying 'green' and animal manures. Our participants now plant trees and cover crops for green manure and forage.

### Crops and Cropping Systems

Diversity of crops is the key to successful upland farming. Rotating different crops with legumes ensures higher yields and conserves soil fertility.

### Farm Planning

After Mag-uugmad introduced the above technologies, the project gradually encouraged farmers to include planning in their farm operations. In farm planning, farmers envision what crops and tree species they would like to grow on their farm, anticipate likely problems, and analyze the causes of these problems. A farm plan also includes a list of the family's basic needs for food, clothing, shelter, and education. In making their plan, farmers also estimate farm income and expenses, and identify resources for meeting the family's needs.

## Tree-Growing Technologies

### Selection of Species

The need to cut trees is stronger than the desire to plant. Farmers cut trees to convert land to agriculture and other reasons. They find it difficult to understand the benefits of growing trees for the environmental value of producing oxygen that we breathe. But farmers understand the value of trees if told that trees can provide wood to build homes and fruits to eat. In view of these values, they will want to grow trees.

Helping farmers to match needs with uses can motivate farmers to grow trees on the farm. Table 1 shows different species and their local uses.

From such a tabulation of species' various uses, farmers may select which ones to grow. Some farmers may consider other criteria, such as biomass

**Table 1**. Sample table shows tree species and their uses.

| Species (Tree/Bush) | Fodder | Firewood | Charcoal | Timber | Fruits |
|---|---|---|---|---|---|
| Mahogany (*Swietenia macrophylla*) | x | / | / | / | x |
| *Gmelina* species | / | / | / | x | / |
| Jackfruit (*Artocarpus heterophyllus*) | / | / | / | / | / |
| *Cassia siamea* | x | / | / | / | x |
| *Gliricidia sepium* | / | / | / | / | x |
| *Leucaena leucocephala* | / | / | / | / | x |
| *L. diversifolia* | / | / | / | / | x |
| *Calliandra calothyrsus* | / | / | / | / | x |
| *Calliandra tetragona* | / | / | / | / | x |
| *Alnus* species | / | / | x | / | x |
| Cacao | / | / | x | x | / |

production for both livestock feeds and green manure. The criteria below provide additional guidelines for species selection.

1. Adaptability to the locality
2. Availability of seeds/planting materials
3. Ability to coppice well and withstand frequent pruning
4. Good biomass production
5. Tolerance of close spacing
6. Early maturity
7. Resistant to diseases and pests
8. Drought-tolerant
9. Palatable to livestock (with high nutritional value)

**Seed Technology and Nursery Management**

As part of Mag-uugmad's program, farmers are taught appropriate techniques for producing quality seed, including how to select mother trees, harvest, handle, dry, and store seeds. Farmers also receive training in basic technologies on nursery management for healthy seedlings. These technologies include different methods of seed germination and seedling care.

## The Role of Mag-uugmad Foundation, Inc.

Together Mag-uugmad Foundation and the farmers identify possible causes of farmers' problems. Farmers recognize the need to increase their farm production to provide for their family needs. The Foundation can provide technologies to answer these needs, and monitors and evaluates program implementation.

In the program, farmers group themselves into *alayons*. The *alayon* system is a traditional practice where farmers volunteer to work on group members' farms. An *alayon* could be a mixed male-female group, an all-male group, a women's group, or a children's group. An *alayon* generally meets two days each week, rotating work on members' farms. Members agree on a schedule and system of

farm work, and the farm owner decides what he wants to do with his land. Members bring their own food for the *alayon* session. This system also allows for the sharing of draft animals. To become an *alayon* member, a farmer must be hard working and able to relate with other people.

The *alayon* plays an important role in sustaining the initial gains made by the project. For an individual farm family, applying soil conservation measures requires a large amount of labor. The *alayon* reduces this burden and represents the transition towards formalization of a people's organization (that is, a truly community-based group) following a plan that the Foundation prepared over a two-year period. In this role, then, *alayon* also serves as a tool for planning and decision-making, monitoring and evaluation, and technology transfer. The Mag-uugmad Foundation will phase-out when the people's organization becomes self-reliant.

*An alayon group makes improvements to a member's farm. Photo: MFI.*

**Evaluation**

Project evaluation takes place at several levels. Within an *alayon*, each member's farm is evaluated by the whole *alayon*. Each Farmer Instructor's operation is evaluated by all the other Farmer Instructors and Senior Farmer Instructors in the area. These evaluations are based on the farm's objectives and the degree to which they have been achieved. Finally, the Foundation assesses project impact by the number of adaptors and the relative improvement of their lives.

**Extension**

With the exception of the program manager and assistant program manager, the project does not rely on professional extension workers. All extension activities are handled by part time farmer-instructors who work two days each week with other farmers in their *alayon* groups.

Since its beginning, the program has also organized farmer exchange visits. These cross visits stimulate farmers to share ideas and experiences and learn technologies successfully applied by farmers in other areas. "Intra-site" visits take farmers to other farms within the same project area. "Inter-site visits" expose them to other Foundation sites. On "extra-site" visits, Mag-uugmad farmers see other projects in the Philippines. Finally, international visits take farmers to learn from projects in other countries.

**Training**

Mag-uugmad Foundation, Inc. has shared its experience in soil and water conservation with farmers and technicians from other areas in the Philippines through an outreach program funded by the Ford Foundation. This program conducts monthly training sessions for visiting farmers, government field technicians, and non-governmental organizations (NGOs) involved in upland farming development. This training course is conducted at the Foundation's program sites. Farmer-instructors serve as the primary training staff, assisted by a small support staff with skills in community extension. The course is composed of farm tours, small group discussion, slide presentations, farm analyses, and planning sessions.

The program has produced training materials in English and local languages (Cebuano and Bicolano) for wide distribution. Booklets produced include "Simple Soil and Water Conservation Practices for Upland Farms," "Proper Goat Management Practices", and "Iras-Iras, High-Yield Hillside Farming Method." The technologies illustrated in these booklets are verified methods adopted by local farmers. All materials are extensively field-tested by farmers before publication.

**Phase-Out Activities**

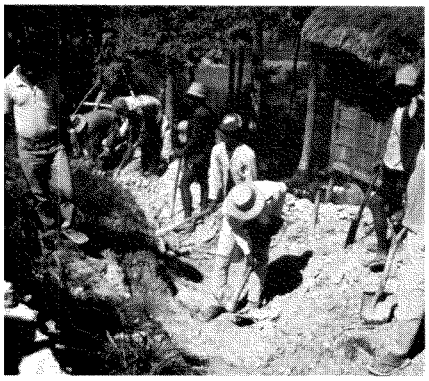
The Foundation is preparing for the phase-out of its activities from the project areas through three main activities. First, it is helping each community to form a legally-recognized people's organization that can provide the community with access to services and resources of both the government and NGOs.

A second activity is training in leadership skills, financial management, and value formation. The Foundation has developed training modules based on farmer-defined needs, experiences, and lessons learned.

The last activity is organizational collaboration, which involves linking up the new People's Organization with other organizations to share technology, information, and resources.

After phasing out from the project area, the Foundation plans to become active in other areas.

## Summary of Lessons



*Mag-uugmad Foundation training in soil conservation measures includes hands-on practice.*

The Mag-uugmad experience shows that to interest farmers, an innovation must be economically viable and culturally and socially acceptable. In addition, a sustainable farm system must be environmentally sound.

Rather than introduce a package of technologies at once, the Mag-uugmad experience shows success by introduction of only one new practice at a time, starting with that most critically needed. In the case of the rugged terrain of Cebu, water conservation had to be improved before crop yields could be increased. The first technology must also be simple and tested.

An NGO must be clear with farmers at the outset as to what it will and will not provide.

Farmers become more interested in growing trees when they see how different species can answer their specific needs for fodder, improved soil fertility, food, or other products.

To reinforce farmers in their innovations, Mag-uugmad adopted the traditional group-work system of *alayon* for its regular activities. This makes soil conservation practices more feasible for individual farm families and prepares the communities to manage a legally-recognized people's organization when the Foundation leaves the area.

Hands-on training and farmer-to-farmer cross visits to successful farms are important for improving skills, exposing farmers to new practices, and increasing confidence.

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# Barangay Camingawan Agroforestry and Regreening : A Three-Year Upland Community Development Project

*Edwin P. Abanil*

## Background

In 1988, the total forest cover of the Philippines was about 21% - 25% of the country's total land area. The forest depletion rate is 119,000 ha per year from 75% in 1950, the Philippine forest cover went down to 25% in 1988 (Bautista 1988).

Western Visayas (Region 6) is one of 13 regions of the country with a total forest cover of only 7%. Negros Occidental, on Negros Island, is one of five provinces in Region 6, with a population density of 2.78 people per ha. Only 5% of the province is forest covered, most of it located in the north. In the south, flash floods and heavy river siltation are common and long droughts have become more frequent. Lowland crops have suffered with increased erosion.

## Problem Statement

Camingawan is one of the most depressed *barangays* (villages) in Negros Occidental. Its population of 7,216 (1,208 households) occupy about 3,000 ha; 90% of them live below the poverty line.

Although most people in the barangay inhabitants are Roman Catholic, most of the project beneficiaries are Baptists, a close-knit congregation. The Agroforestry and Regreening Project site is 4 km upland from Barangay, Camingawan and involves 139 families covering 426 ha. These families, a clannish group of settlers, came from Negros Oriental, where they were mostly *kaingeros* (slash-and-burn settlers), relying on charcoal-making for extra income.

The average family holding is 3 ha, including 1 ha of rice and other cash crops. For lack of better technology and inputs, coupled with soil erosion, they produce just enough for their consumption needs.

Probably due to the site's remoteness, government workers are rarely seen in the area. When they do appear, they make promises that are never fulfilled. Generally, the inhabitants did not trust the government.

To help regenerate the forest and improve the villagers' living conditions, the Negros Economic Development Foundation (NEDF) selected the area as a project site.

## Site Geography

Barangay Camingawan, in the municipality of Kabankalan, southern Negros Occidental, is 19 km from the town proper. It is accessed by a national road crossing to Negros Oriental. Topography varies from moderately flat to rolling with

the steep slopes of less than 50 degrees; elevation ranges from 400-1200 m. The area is a major source of the Ilog river, the main source of irrigation for three lowland municipalities.

## About NEDF

NEDF is a private, non-stock, non-profit service organization formed in 1970 to assist the Province of Negros Occidental restructure its economy for diversified development.

NEDF concentrates on uplifting the province's poor, primarily through assistance programs designed to provide livelihood opportunities. These programs include a Food Production and Livelihood Assistance Program for fisherfolks and marginal farmers, Sugar Workers Development Assistance Program for the landless sugar workers, Micro-Enterprise Development Assistance Program for the urban poor and small entrepreneurs, and Agroforestry for upland dwellers.

## The Project

The Agro-Forestry Project was first implemented in Patag, Murcia, Negros Occidental in 1987 with funds from the U.S. Agency for International Development. In 1988, however, civil disturbances made it dangerous for NEDF staff to monitor. The area was abandoned and Barangay Camingawan was selected as an alternative site.

The project aims to:

- work with the villagers to reforest 284 ha of the land held under renewable 25-year Certificates of Stewardship Contract. Forest and fruit trees would be planted.
- involves organizing the people in the area into a cooperative and building their capability as a group.
- increase the farmers' income by at least 30% and make them self-reliant and protectors of the forest.

The project's time frame is May 1989 - May 1992, with a total budget of 1.8 million pesos (US$72,000).

## Strategies

### 1. General

- Stop charcoal-making at the project site to preserve remaining trees.
- Provide alternative income generation activities that can show quick results, maintaining them until the farmers can continue on their own. Each farm's one-hectare lot is used to produce short-term crops.

- Plant fruit trees that bear fruit in five years, along with forest trees. Both fruit trees and medium-term forest trees, like *Gmelina*, begin to yield in 4-5 years.

- Plant long-rotation forest trees that can be harvested after 15-25 years.

2. **Specific Strategic Project Components**

- **Develop a cooperative** with a legal identity and democratic mechanisms. They will receive training in organizational leadership and management.

- **Provide financial assistance** to farmers at low interest rates for rice production support, draft animals, and farming equipment.

- **Provide training** on appropriate technology and values formation to the cooperative.

- **Link farmers to markets** to ensure better, fairer prices for their produce.

- **Establish a community development center** on a nine-hectare lot in the area. The center will include a nursery for forest and fruit tree seedlings, which will be provided to the farmers on credit, and a training center. The center will also test, with farmers, technologies like the Sloping Agricultural Land Technique.

- **Arrange Cross Visits** by farmer-leaders to other agroforestry projects in the country to observe and learn techniques that may be adapted to their own area.

- **Link the cooperative with the Philippines government and other NGOs** for coordination and access to other resources for meeting farmers' needs.

## Accomplishments and Key Issues

After two years of work in Barangay Camingawan, the project has:

1. Organized the 139 farmers into an association called Kasamahan ng mga Mambubukid para sa Kaunlaran (Association of Farmers for Progress), or KASAMAKA. They have selected officers and meet regularly to discuss concerns.

   In March 1991, the president of the KASAMAKA was murdered. Members believe that the crime may be connected with the project. Members did not meet for almost three months. NEDF began again the organizing process and the farmers resumed their meetings in July.

2. Provided loans to KASAMAKA for agricultural production inputs, working animals, and pre- and post-harvest equipment. The loan

repayment rate is 100%. The average monthly farmer income, excluding household consumption of basic food stuffs, has risen from roughly US$20 to US$50, or by about 150%.

3. Provided farmers with seedlings from the community development center at minimal cost, account payable after five years. As of early November 1990, 150,000 fruit and forest tree seedlings had been planted. Farmers used the Sloping Agricultural Land Technology in planting slopes.

   On November 13, 1990, one of the strongest typhoons of the decade hit Negros Occidental, damaging 70% of the newly planted seedlings. This was followed by a drought. As a result, less than 20% of the seedlings were still growing in June 1991. Still, farmers are not discouraged, but are eager to replant.

4. Established the Community Development Center, where farmers have received training in uplands technologies, environmental awareness, values education, and leadership skills and team-building.

   An illustration of the farmers' use of their new skills came when they confronted the local head of the Department of Agriculture to receive equipment promised in exchange for appropriated fertilizers. When it became clear that the official had misappropriated the equipment funds, the farmers brought their grievance to the provincial head of the Department, and were later compensated.

5. Linked KASAMAKA to the Department of Environment and Natural Resources, through which it obtained funds for projects to impound drinking water, widen an access road of 5 kms, and obtain 500 coffee seedlings. The Department of Agriculture funded the water-impounding project for irrigation. The Department of Health now regularly visits the area for immunization and routine health check-ups.

   Through a local network of NGOs and NEDF, the Office of the President/Presidential Management Staff funded a two-room school building in the area.

6. Arranged to send 12 farmer-leaders on field trips to observe and learn methods of tree growing.

7. Linked KASAMAKA to other organizations funded by NEDF for marketing support. As a result, a micro-entrepreneur group of urban poor are buying KASAMAKA produce at a better price than formerly obtained from middlemen.

## Lessons Learned

The Barangay Camingawan Agro-Forestry and Regreening Project may be a sustainable model for others. Among the lessons learned so far are:

1. Upland farmers must be educated on the value of the forest and the inter-relationships of elements in the environment.

2. A project's entry into the community must show immediate results, preferably something to arrest poverty and fight hunger.

3. The project must have the support of local government officials.

4. People's participation must be top priority.

5. An organizing component for advocacy and collective group action must be intensive and sustainable.

6. Strong leadership within the group is essential. A strong leader must be identified when the core group is formed.

7. Religion and faith are vital factors when problems arise. Most members of KASAMAKA are Baptists. This common bond makes it easier to resolve problems.

8. Mechanisms for project phase-out must be clear to all participants.

The project has one more year to go. The best judges of whether the project is successful are the farmers themselves. Indicators at present show that the project is making a difference.

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## Focus on : Kalahan Educational Foundation

**Program**: Reforestation with tribal communities

**Program aim**: To help forest dwellers achieve sustainable livelihood and improve the ecosystem.

**Target clientele**: Tribal forest dwellers in northern Luzon, Philippines.

**Timeframe**: Phase 1 activities began within the Kalahan Reserve in 1977. Phase 2 activities in areas adjacent to the Reserve began in 1988. Both programs are ongoing.

**Resources**: In Phase 1, US$8,000 from the Ford Foundation supplemented over US$32,000 from KEF's own resources. For Phase 2, the Government of the Philippines contributed US$360,000.

**Activities**:

KEF has worked with tribal communities to obtain communal land rights to 15,000 ha of tribal lands in forest reserve areas of northern Luzon.

With Ikalahan farmers, KEF has helped plant fruit trees and *Alnus japonicum* for fuel, lumber, and soil improvement. KEF also supports other activities in processing and marketing fruits and spices.

Some families are developing new niches in the forest areas, such as mushroom and orchid production, that employ the forest environment without depending directly on the land or depleting the soil.

**Lessons**:

1. Given communal control over significant portions of their tribal lands, tribal communities can and will plant and protect these areas for their own livelihood while expanding the environmental value of production forests and watersheds.

2. Through research into appropriate processing and marketing options for selling local produce in larger markets, NGOs can help stabilize rural communities and improve local employment opportunities for young people. This is needed to ensure the communities' future leadership.

3. The Ikalahan have found *Alnus japonica* to be an appropriate tree for many uses in their area. It builds phosphorus in the soil when used as a fallow crop between sweet potato crops. It also is good for erosion control and fuelwood production, and when mature appears to provide good lumber.

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# Farmer-Centered Tree-Growing Trials and Extension

*Samuel C. Operio*

In the Bicol region of the Philippines, intensive cultivation of annual crops on hilly land has led to rapid soil erosion and reduced crop yields. Construction of terraces is one way to control erosion, but it requires much labor and capital, both of which are scarce among upland farmers. A cheaper and easier approach favored by upland cultivators is to grow trees for slope stabilization. This paper deals with field experiences of the Upland Farm Management project, and its activities in promoting leguminous multipurpose trees in Santo Domingo, Albay, Philippines.

## The Project Site

Santo Domingo is one of 17 municipalities in the province of Albay on the island of Luzon, with an area of 4,700 ha and a population of 23,000. It has both small lowland rice plains and very undulating hilly areas, including the Mayon volcano. The area has a pronounced rain season from November to January and no prolonged dry season. Temperatures range from an average of 20° C from November to February to an average of 29° C during April and May; the average annual rainfall is 3,280 mm. Soils in the municipality's upland areas is clay-loam with an average pH of 6.3, medium nitrogen (N), low phosphorus (P) and sufficient potassium (K). The steepest slopes are 45°.

## The Upland Farm Management Project

Since 1986, the International Institute of Rural Reconstruction and World Neighbors, with technical assistance from Mag-uugmad Foundation Inc., have jointly undertaken the Upland Farm Management Project in Albay. It addresses the problems experienced by marginal upland farmers: low farm yields, soil erosion, low income, lack of on-farm diversification, and fodder shortages.

The project's long-term objectives are to:

1. Build up a sustainable and ecologically sound farming system
2. Diversify sources of farm income
3. Increase farm yields and cash income
4. Increase the availability of fuelwood and fodder

The project started in Salvation village with only five farmer-cooperators. Since then, 125 more farmers from 5 more villages have asked to join the project and are now involved in project activities.

### The Project's Tree-Growing Activities

The project emphasizes soil and water conservation, promoting a farming system that combines food crop production with soil and water conservation, and meeting some of the family's needs for fodder, fuelwood, and 'green manure.' This system includes construction of contour and drainage canals, check dams, and soil traps. Farmer-cooperators plant perennial plants at close spacings along contour bunds to form living barriers. This reduces the speed of rainwater run-off and helps retain the soil.

Farmers in the project also practice small-scale woodlot and orchard farming. They plant forest/timber trees, including acacias, *Gmelina* species, and *Swietenia* species, along farm boundaries or on upper slopes of farms or watersheds. These trees are planted mainly for firewood, construction materials, furniture, and lumber. Farmers plant fruit-bearing trees, including *Artocarpus heterophyllus* (jackfruit), *Psidium guajava* (guava), and *Persea americana* (avocado), elsewhere on their farms. Forest and fruit trees are divided into those which can be harvested in 1-5 years (short term), 6-10 years (medium term) and 11-20 years (long term).

## Farmers' Experiments to Identify the Best Hedgerow Trees

Farmers are carrying out two kinds of experiments to identify promising hedgerow tree species: on-farm trials and species trials.

### On-Farm Trials

Five farmer-instructors, the main promoters of project technologies, planted 10 species of multipurpose trees as hedgerows on slopes. The experiments were planted for observation of variables that the farmers themselves selected (see Table 1). The seeds were sown at a spacing of 2-5 cm in each row, an average of 50 linear meters of hedgerow per species. The trials have been under way in actual farming conditions since the start of the project in 1986. They are intended to be carried out for eight years.

Generally, farmers have ranked *Gliricidia sepium* highest overall among the 10 species, although it does not produce seeds in high quantities or high quality. *Flemingia congesta* ranks second overall, and best in seed production. Kurokalungay, a local *Cassia* species, ranks third overall, although it does not produce good green manure. Farmers place *Leucaena leucocephala* fourth on the list, but it appears not to coppice well. Farmers report that *Leucaena* has not been attacked by the defoliating psyllid pest for seven months now; during the infestation, which started in the mid-1980s, it was attacked every 2 months. *Cassia siamea* has placed fifth and performs poorly in erosion control.

### Species Trial of Different Legume Trees for Hedgerows

In February 1989, project staff started a joint trial with farmer-cooperators on the farmers' land. The trial was designed to test hedgerow species, providing benchmark information and guiding the project in selecting promising hedgerow species. Specifically, it aims to:

- o Identify suitable tree species for hedgerows
- o Determine survival and growth rates of the species
- o Determine biomass and wood production of the species
- o Determine coppicing ability

**Table 1.** Variables observed in farmer-run trials, with farmers' preliminary ratings of best five species for each.

| Tree Species | Grows easily by Cuttings/Seeds | | Erosion control | Biomass production | Fuelwood/ Charcoal | Fertilizer green manure | Forage | Coppicing ability | Seed production |
|---|---|---|---|---|---|---|---|---|---|
| *Gliricidia sepium* | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 5 |
| *Flemingia congesta* | | 1 | 1 | 2 | | 4 | 3 | 2 | 1 |
| *Cassia* sp. (Kurokalungay) | 2 | | | 3 | 2 | 5 | | 4 | 2 |
| *Leucaena leucocephala* | 3 | 4 | 4 | | 4 | 2 | 2 | 5 | |
| *Cassia siamea* | | 3 | 5 | 4 | 3 | | | 3 | 4 |
| *Desmodium rensonii* | 5 | 3 | 5 | 5 | 3 | 4 | | | 3 |
| *Sesbania grandiflora* | 4 | | | | | | | | |
| *Calliandra calothyrsus* | | | | | | | 5 | | |
| *Sesbania sesban* | | 5 | | | | | | | |
| *Calliandra tetragona* | | | | | | | | | |

In all, 16 species in the Leguminosae family were collected and identified. Selection of species for the trial was based primarily on potential uses and benefits to the farm family, including fuelwood, fodder, and green manure.

The site was cleared and soil and water conservation structures were established. Bunds were constructed above the contour canals and the tested species were sown on the bunds. Four contour hedges were constructed, with a total of 64 linear meters planted, 4 m per species.

The hedgerows were planted in double rows 10 cm apart, with 10 cm within-row spacing. Two to three seeds were sown in each hill. After two weeks, seeds were resown to fill the gaps. Seedlings were thinned to leave only one healthy seedling per hill, for a total of 40 seedlings per row, 80 seedlings for 2 rows. Data were gathered from five randomly chosen seedlings per species.

Soil and water conservation structures are maintained from time to time. Weeding was continuously conducted for the first three months to prevent overcrowding and promote good seedling growth.

## Preliminary Results

After two years of quarterly data collection, survival and growth rate were assessed (see Table 2). In September 1991, all species were coppiced for the first time to begin study of the trees' abilities to coppice and produce biomass.

**Table 2.** Preliminary results of the collaborative trial by farmers and UFMP staff, at 24 months (February 1991).

| Tree species | Diameter (cm) | Rank | Height (cm) | Rank |
|---|---|---|---|---|
| *Cassia siamea* | 5.5 | 1 | 409 | 2 |
| *Delonix regia* | 4.8 | 2 | 270 | 5 |
| *Gliricidia sepium* | 3.8 | 3 | 197 | 9 |
| *Leucaena diversifolia* | 3.1 | 4 | 442 | 1 |
| *Parkia roxburghii* | 2.4 | 7 | 169 | 11 |
| *Calliandra tetragona* | 2.3 | 8 | 237 | 6 |
| *Albizia lebbek* | 2.1 | 9 | 162 | 12 |
| *Samanea saman* | 2.0 | 10 | 113 | 14 |
| *Tamarindus indica* | 1.8 | 11 | 103 | 15 |
| *Sesbania sesban* | 1.6 | 12 | 220 | 7 |
| *C. calothyrsus* | 1.5 | 13 | 211 | 8 |
| *Cajanus cajan* | 1.4 | 14 | 190 | 10 |
| *Flemingia congesta* | 1.3 | 15 | 161 | 13 |
| *Tephrosia candida* | – | DEAD | – | – |

## Growth Rate

Of the species tested, we can initially conclude that *Cassia siamea* shows the best overall growth. It ranked second in height but the difference is small. *Gliricidia sepium*, which placed first in the farmers' on-farm trial, ranked third in diameter and is not among the five tallest species. *Flemingia congesta*, which farmers included among the best five species in their on-farm trials, falls near the bottom of the 16 species in growth rate.

## Survival Rate

*Tephrosia candida* died from an attack of root knot disease. Farmers found this species cannot thrive in windy or hilly areas. Three months before dying, it was among the five best-growing species (third in height and fourth in diameter). *Cajanus cajan* and *Sesbania sesban* are starting to die after two years, apparently not due to any specific pest or disease attack.

## Project Strategies in Promoting Multipurpose Trees

The key to the Upland Farm Management Project is the development of an effective extension system for spreading improved technologies and assisting farmers to develop their own technologies. The project applies the following strategies in its tree-growing activities.

**Demonstration Farms**

The Project has helped farmers establish five demo farms with different tree species to test their adaptability. These farms were run by the farmers themselves. They are living testimonies in the promotion of MPTS to other farmers.

**Farmer-to-Farmer Group Work and Training**

Farmers have their own language and can place their experiences in a context familiar to other farmers. The project's original five farmers worked together on one of their farms for one day each week. Each week they worked on a different farm. These mutual-help groups are called *hunglunan*. After one year, they became farmer leaders, organizing groups of interested farmer-cooperators to use the same technologies. They then became farmer-instructors to other farmer-cooperators. Ten farmer-instructors are now the project's main promoters and extensionists. A farmer-instructor must have implemented and maintained the UFMP technologies on his or her farm and must be willing and have time to teach other farmers. From the five initial farmers, the project has expanded to 130 farmers in five years.

**Farm-Planning Activities**

Farm planning starts by identifying problems and setting very basic objectives. Discussions of agroforestry or tree-planting follow a broader and more fundamental assessment of the whole farming system. The farmer-cooperators make these assessments to plan which tree species to plant and when, among other things.

**Supply of Planting Materials**

The project established tree nurseries to raise fruit and forest tree seedlings and for seed multiplication. Farmers are required to distribute the same number of seedlings, seeds, or cuttings as they received from the project to other interested farmers. This system taught the farmers seed production technologies, and provided a way for them to 'pay' for the planting materials they received.

**Cross-Farm/Project Visits**

Through cross-farm visits, farmers learn from each other's experiences about trees best suited to their climate and objectives. The visits also provide more information on potential tree uses.

**Only One Technology at a Time**

The strategy of teaching only one technology at a time and waiting until it is mastered before introducing the next motivates farmers to learn, and enhances their mastery of the technologies adopted.

The first technology introduced to a new farmer-cooperator is soil and water conservation to address the most basic problem in upland farming, soil

erosion. Once this is mastered, it is followed by livestock management to grow fodder trees along the contour and for 'green manure' in their farms. After that, farmers learn soil fertility management to restore and maintain their soils, which are usually quite degraded when they join the project. Next they learn an improved cropping system for increased farm yields and continuous production. Then woodlot/orchard farming is added to support their long-term objectives. Finally, participants learn backyard gardening for providing nutritious vegetables for their consumption.

**Informal Training and Follow-up**

Farmer-instructors, backstopped by project staff, conduct informal training and follow-up by showing slides of different technologies, including tree planting, to prospective farmer-cooperators. A practical session is conducted on the following day for hands-on experience in applying the technologies on one's farm. Farmer-instructors and staff follow-up regularly to reinforce the ideas and practices learned.

## Lessons Learned

In the past five years, the project has learned that:

1. A farmer-centered approach is effective for promoting trees among farmers. Farmer-leaders play the role of extension worker in disseminating tested or improved tree species to other farmers.

2. Small-scale farmer experimentation helps farmers to learn how to evaluate their options and decide for themselves what tree species are suitable. They are also then able to design their own experiments.

3. Observation, farm visits, and project visits to successful tree-growing farms increase farmer motivation.

4. Farm systems that integrate animals, crops, and trees reduce the farmer's risk.

5. Seed availability is one of the most limiting factors for farmers planting hedgerows.

6. Tree growing not only provides produce for the farm household, but also strengthens neighborhood ties, as farmer-cooperators gives surplus fodder and fuelwood to neighbors. This encourages neighbors to plant trees so that they will not need to ask for these products from the tree farmers.

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# Social Forestry Programs with Tribal Groups in Northern Philippines

*Michael A. Bengwayan*

For Igorot tribal groups in Northern Philippines, social forestry is ingrained in the way of life – most prominently among the Ifugao and Bontoc tribes. The Ifugao's *muyung* – or wood, food and medicine lot – is a case of indigenous social forestry in which culture integrates and supports forest conservation and development. The same is true with the Bontocs' *tayans* and *lakons*, which developed from the need to co-exist with nature.

These tribal practices reflect the basic law of survival, in which means must be found to adjust to the limited resources that the environment offers. Despite the fact that social forestry is in some ways native among these groups, problems can arise with social forestry programs that originate with government agencies or NGOs. This paper focuses on the more serious obstacles facing social forestry programs, and possible solutions. It will draw from the experiences of the Igorot Tribal Assistance Group (ITAG) and its work in promoting *Morus alba* (mulberry), *Pinus kesiya* (pine), and *Alnus japonica* (alnus).

## Major Problems in Social Forestry

**1. Some laws show a bias against indigenous concepts of land ownership.**

Philippine Republic Act 3071 categorizes tribal peoples as *kaingeneros* (slash and burn farmers), although some practice farming systems more sustainable than modern farming. Another law prohibits ancestral land owners from making use of and settling on lands with 18% slope or greater. In the Cordillera region where ITAG is active, over 90% of the land has a slope of greater than 18%. Other laws prevent tribal communities from having their lands titled. Tribal peoples have therefore become very suspicious of government forestry programs.

**2. Social forestry programs disregard tribal culture and indigenous practices.**

The *muyungs* and *pinugos* of the Ifugaos and the *lakons* and *tayans* of the Bontoc people involve people's participation in decision-making. Such systems should be recognized in social forestry plans.

**3. Social forestry programs often fail to involve tribal women and recognize their potential.**

Tribal women ensure environmental survival. Women are the ones who handle seeds and ensure that local seed selections are carried on. The handling, planting, harvesting, cleaning, storing and regeneration of local varieties rests in women's hands. Forestry programs have failed to recognize these contributions.

**4. Tribal peoples and government foresters share a mutual distrust.**

"Government foresters are number one enemies of forestland dwellers." This notion is widespread among tribal peoples. Local people believe that forestry programs and their implementors intend to seize their lands, mainly through laws that refuse to recognize ancestral ownership.

Conversely, many government foresters believe that forest dwellers should not be included in programs. They still think that such peoples are unskilled and incapable of developing their own environment.

**5. NGOs lack funds for long-term projects and research.**

For six years, ITAG has depended on small grants from foreign agencies to support its work. Most of these funds were for projects lasting only one year. Other funding sources are needed for research, training materials development, community organizing, and village-level pilot projects.

## ITAG's Work on These Problems

### Recognizing Ancestral Land Ownership

Early in 1991, ITAG joined a coalition of NGOs and sympathetic civic leaders to draft a set of policies that would create an Ancestral Land Commission in the Philippine Congress. The Commission would address tribal claims to own their ancestral land. ITAG helped organize lobby groups among grassroots organizations and conduct ancestral land congresses to dramatize the issues among tribal groups.

### Recognizing Cultural Values and Indigenous Knowledge

With funds from the Inter-church Fund for International Development, ITAG:

- conducted five village trainings on indigenous forest conservation strategies among five different tribal groupings
- established five pilot areas in five provinces which showcases indigenous activities on:

  soil and water conservation
  *muyung* establishment
  village nurseries
  communal tree planting strategies

- packaged indigenous conservation techniques in a farmer's technical guide
- conducted five symposia and seven workshops on indigenous forest conservation to students and researchers, with experienced tribal members as resource persons

**Recognizing Women's Role in Forestry**

ITAG submitted a proposal to the Department of Environment and Natural Resources (DENR), the government agency responsible for social forestry programs, on the need to involve women in social forestry programs. ITAG's proposal was recently accepted by the Regional Forestry Master Plan. The proposal includes efforts to:

- Make women key beneficiaries in training on leadership, nursery establishment, seedbanks, and agroforestry
- Provide input assistance to women who work as farm/forest laborers to establish cottage industries
- Provide health and family-planning services to women forestry workers
- Establish a multipurpose cooperative for women workers
- Deputize women as technicians in social forestry programs

ITAG's core of women members and staff formed a group, "Women in Development for Tribal Women," that with support from Women Worldwide is: training women on low-input agroforestry techniques, networking with other women groups, conducting cross-site visits, and establish bio-intensive gardens.

**Improving the Image of Foresters and Government Programs**

Most NGOs that work directly with grassroots people enjoy more credibility than their government counterparts. By working together with government agencies, NGOs have an opportunity to improve the situation. In 1989, ITAG entered a collaboration with DENR on research, training, reforestation, and information campaigns. This has involved:

- Research on control of the beetle, *Xyleborus destruens* Blanford, infesting *Casuarina equisitifolia* trees
- Control measures against Alnus and pine beetles which have still not been identified
- Monitoring and evaluation of family and community contract reforestation projects in the region
- Conduct of information campaigns for villagers, students and teachers on reforestation, ozone layer destruction, chemical pollution and school-nursery establishment
- Membership to the DENR Regional Forestry Master Plan's (RFMP) planning and steering committee that contributed to policies on women involvement, village level participation in planning and implementation and, training of youth as community forestry volunteers.

**Correcting the Image of Tribal Peoples as Forest Destroyers**

In addition to the activities mentioned above to recognize the value of indigenous knowledge, ITAG has also recommended to the DENR-RFMP that indigenous conservation strategies be studied, documented and adopted to reinforce forestry program activities.

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## Focus on : Sarvodaya Women's Movement

**Program:** Agriculture, Forestry, and Environment Programme

**Program aims**: To motivate villages to participate in forest and environmental conservation and homestead agroforestry, provide community education in forest conservation through extension, engage women in income-generating activities, such as collecting and processing herbal and forest produce, and raise school children's awareness of their role in conserving the environment.

**Target clientele:** Families in 100 villages in Moneragala, Hambantola, and Padaviya districts of Sri Lanka.

**Timeframe:** The five-year program began in March 1990.

**Resources:** Financial support comes from the Alton Jones Foundatio, Inc., Virginia, USA. The program receives collaboration from the Sri Lanka Department of Forest Conservation, the Central Environmental Authority, and the Department of Agriculture, University of Peradeniya. In addition, the Sri Lanka Forest Department has provided resource personnel, information, and technical guidance. Local government staff have been helpful on the basis of personal interest, not official policy. The Ministry of Education has been very enthusiastic in involving school children in the program.

*Community members work in a village nursery. Photo: K. Salgado.*

**Activities:** After surveying perceived problems (40 villages in each of the first two years, an additional 20 villages per year after that), the project is promoting soil conservation techniques and tree-planting on community land. Sarvodaya has developed two central nurseries that produce a total of 100,000 seedlings annually. The project also helps villagers to select tree species, and provides limited supplies for raising village nurseries.

Its awareness-raising program has included sponsoring essay-writing contests, promoting fuel-conserving stoves, and training 20 women extension workers in a three-week course. The female extension workers have been trained to provide on-site, village instruction for farmers, mothers, and youth groups. By the third year, each district extension worker will be responsible for supervising 25 villages, and training 5 village conservationists and 25 village leaders.

**Key problems:** Technical problems include difficulties in obtaining data on the actual forest situation from academic and technical institutions through official channels. While government policies are helpful, resources for implementation are insufficient. The program has overcome these problems only through the persistence of Sarvodaya staff and the personal commitment of some government officials.

**Lessons:** Communities are interested in addressing forestry and environmental problems, provided they are involved actively from the start. Incentives such as technical knowledge, credit, and marketing networks for produce are needed.

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# NGOs and Social Forestry in Thailand

*Pornchai Vetayanugul*

## Introduction

The threat of accelerating deforestation has been recognized for many years in Thailand, but there is still no effective plan for how to deal with the issues. National policies tend to ignore long-term problems in pursuit of short-term urgencies.

The short-term increase in agricultural production has been impressive. Few Thai people are hungry, although the growth in the national economy is unevenly distributed. Household income from agriculture in 1988-1989 averaged B15,252 (about US$610)(Center for Agricultural Statistics 1990). This is roughly one tenth of the average for city dwellers (Technical Committee on the Global Environment 1992). Still, exports of food products have given a major boost to the national economy.

The hidden costs are beginning to show, however. Farmers are noticing increasingly longer droughts and shorter rainy periods. Without forest litter adding nutrients and improving soil structure, decreased productivity has reduced many small farms, in a country where the average farm size is 4.5 hectares, to marginal or sub-marginal.

Forest destruction will complicate future policies for rehabilitation, particularly in the Northeast, which is the most populous region as well as the poorest. Rehabilitation of some sites may be impossible, or require huge investments of time and money. If the basic genetic material -- local species adapted to these sites -- is lost, the damage will be irreparable.

With the loss of the forest, part of Thai culture and tradition will also be lost. Replacing the many disappearing local species are foreign tree species of Eucalyptus and Leucaena. They are economical to grow but they are not Thai.

## NGOs' Involvement

Many local NGOs are giving increasing attention to the problems of forest destruction and reforestation. Involvement by NGOs began with their prime concern for rural people and their livelihood. NGOs appreciate the facts that changes of traditional attitudes and practices require education, understanding, and, most important of all, participation.

NGOs' forestry activities in Thailand include the following:

1. **Education**. Most NGOs consider education to be the most important component of a forestry strategy, starting with children at schools. Activities include school nurseries and tree planting on the national arbor (planting) day. Often, if the children take the initiative, other

family members take pride in the 'forest' around their home. Where relevant to the specific sites, NGOs have provided information on these species, including Eucalyptus and Leucaena. Some NGOs have organized drawing competitions among school children to create awareness of the harmful effects of forest destruction.

2. **Supplementary Income-Generating Activities.** The government's forest village program, sponsored by the United Nations Food and Agriculture Organization (FAO) and the U.N. Development Programme (UNDP), has provided alternative income sources to villagers who previously cut trees illegally for a livelihood. However, daily wages from tree planting for industrial and environmental forests are inadequate. NGOs have launched their own income-generating activities: beekeeping, soybean and ground nut cultivation, aquaculture, and weaving.

   Other incentives include establishment of an environmental society fund. Members must pledge not to cut trees illegally and to protect their forest from being destroyed. In return, they can apply for loans for income-generating and other useful purposes.

3. **Fruit-Tree Forest Planting.** NGOs also help villagers to plant fruit trees, such as *Mangifera indica* (mango), *Litchi chinensis* (lychee), and *Dimocarpus longan* (longan). During the first three years, NGOs helped the farmers to grow cash crops of soybean and corn to provide income until the trees bore fruits. Trees for needs such as bridge materials, fences, and fuelwood have also been promoted. Normally, farmers require technical assistance in species selection, preparation of seedlings, and how to use and process the trees.

Several encouraging developments in the past few years should foster NGO participation in social forestry. First, the sixth five-year plan (1986-1991) recognized the role of NGOs in development. A new program on Participatory Forestry Development through Extension, sponsored by UNDP, FAO, and the Swedish International Development Agency, was made to include NGOs.

An NGO consortium, the Coordinating Committee of NGOs for Rural Development (NGO-CORD), was set up in 1985 to provide a forum for dialogue among NGOs and between NGOs and government (see description on page 100). More NGOs have become development-oriented and increasingly aware of environmental issues, including deforestation.

Finally, training programs have developed to strengthen NGO capabilities for project planning and implementation.

## Lessons Learned

In our experience with social forestry in Thailand during the last four to five years, we have learned that:

1. Without an effective government coordinating mechanism, it is difficult for NGOs to participate fully in government reforestation efforts.

2. NGOs must continue to improve their technical skills, particularly in nursery management.

3. Effective social forestry requires long-term commitment. Most donors are not willing to commit support for more than three years.

4. In areas where government officials are implicated in forest destruction, NGOs receive no cooperation from local officials. This makes it nearly impossible to work with villagers. Formal recognition of NGOs' roles in social forestry is very desirable.

## Future Directions

One proposed strategy for the future is to form an NGO Subcommittee on Social Forestry and Rural Development under the umbrella NGO Consortium. This would provide NGO representation in government programs for coordination. Training programs to prepare NGOs for work in social forestry are also being designed. Currently, about 20 NGOs are involved in environmental issues and development.

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# The Case of Grass-Roots Integrated Development (GRID)

*Yenuedee Wongs-budh*

Thirty years ago, the expanses at the edge of Thung Kula Ronghai and the Mun River basin and its two tributaries provided the local people in Northeastern Thailand with a rich variety of food, including fish and other marine and wildlife, and naturally-grown vegetables. Since 1961, however, most forests there have been destroyed to make way for cash crops: jute, tapioca, rice, maize, and eucalyptus. People have now begun to realize that the rich soil and food from nature have gone away since the forest was destroyed.

Without immediate creative measures, the problems are likely to become more intractable. The GRID Foundation is applying its seven years of experience in the area toward continued work with local people on collective attempts to address these problems.

## GRID Project and the GRID Foundation

GRID is a consortium of one governmental organization -- the Khon Kaen University Research and Development Institute -- and three NGOs: Appropriate Technology Association, Foundation of Education for life and Society, and Thammasat University Graduate Volunteer Group. GRID's main objectives are to raise living standards of villagers and increase their self-reliance by motivating them to use their human and material resources effectively.

From 1984 to 1991, the project covered 22 villages around the Thung Kula Ronghai (translated as "the Weeping Prairie") in Roi Et Province. Since then, GRID has changed from a pilot project to a foundation registered with the government.

The Executive Committee of GRID Foundation includes five GRID staff members, four village representatives, and three local government officials.

The GRID Project's activities fell into two main categories: developing people's organizations, and improving quality of life through activities in agriculture, health care, and non-formal education.

### Developing Local People's Organizations

GRID urged the villagers to organize themselves to address community problems. Groups formed as a result include: a rice bank, buffalo banks, village shops, village rice mills, a scheme of rice price-control, and a community forestry project.

### Improving Quality of Life

These activities focussed on agriculture, health care, and non-formal education. In agriculture, GRID promoted integrated farming and water resource

development. Health care activities involved herbal medicine and improved nutrition. In non-formal education, GRID organized study trips and training courses to expose villagers to new practices, and to increase their skills.

An assessment of the GRID Project found that the project was strategically successful in promoting people's organizations and better quality of life. The assessment stressed, though, that women should be involved more fully in activities.

GRID has established a training center with an advisory committee of village representatives. The center serves as a forum where people's organizations in the area exchange experiences in rural development.

### Local Demand for Community Forestry

In 1990, one year before the end of the pilot project sponsored by the Canadian International Development Agency, the people in Thung Kula Ronghai campaigned for tree planting and a community forest. Village leaders' awareness of environmental issues helped to make the Community Forest Project a reality.

After the GRID Foundation became legally registered, its Executive Committee and field workers set up policy guidelines in a five-year plan (1991-1995). The plan includes training of village leaders in how to present projects for government support, and technical instruction. This training will be conducted with support from Sukhothai University.

In discussing the environment, people in the area state that 30 years of forest destruction have resulted in droughts, floods, soil salinity and erosion, siltation of rivers and tributaries, reduced natural food resources, malnutrition, and wood scarcity for fuel and construction. In some villages, women and girls must walk 10-15 km to fetch firewood in the remaining community forests.

In response to this demand, GRID added environmental development to its original policies of people's organization and quality of life. In this area as in its other activities, GRID aims to gain participation from both government and other NGO agencies.

### The Community Forestry Project

The Roi Et Community Forestry Project proposes to recover and preserve forest resources in the area through local management and people's participation. The project plans to cover the five provincial districts of Phonesai, Suwannaphum, Kaset Wisai, Mueny Suang, and Pathumrat. GRID Foundation has requested funds from CEBEMO, an international NGO based in the Netherlands. Representatives from CEBEMO visited the project site in May 1991. Pending their approval for funds, the project will proceed to implementation.

The project is planned for three phases, covering a total of seven years. The initial phase would cover one year, from April 1991 through March 1992. This would be followed by two three-year phases, finishing in March 1998.

To be successful, the project's efforts must be holistic. It must be prepared to get involved in other sectors. The project has four main directions of work.

**1. Reforestation**

The project aims to preserve the remaining forest and wildlife, and reforest degraded areas and village common land. GRID plans to motivate the local people by organizing school essay contests, providing seedlings, helping temple school nurseries become established, and planting trees on common land.

Specific targets include: protecting about 1,300 ha (8,136 rai) of forest in primary forest areas, and reforesting about 430 ha (2,670 rai) of degraded areas and village common land.

**2. Conscientization**

The project's work in reforestation will clearly involve raising the community's environmental awareness and motivating them for collective action. The target groups for project training are community leaders, women, and young people in 71 villages. This includes 5,150 school teachers and students in 23 schools, as well as Buddhist monks and novices in 10 temples.

**3. Income generation**

The project aims to improve local people's living standard and systems of production in ways compatible with natural resources and environmental conservation.

**4. Cooperation with related GOs and NGOs**

The project aims to help develop people's organizations to play a role in the management of the environment through cooperation with related government organizations (GOs) and NGOs. Cooperations with GOs will be at the district and sub-district levels. At both levels, GRID aims to help government officials to understand the project and in turn obtain information from them. This may involve start-up of information facilities.

The project plans to exchange working experience and information with other NGOs, and cooperate in distributing information on natural resource and environmental conservation. The project will also cooperate with funding agencies to obtain knowledge, techniques, materials and financial support for the planned objectives.

**Plans for the First Year**

Project staff will collect information and select target areas using the criteria of: (1) forest area's richness; and (2) the nature of land ownership -- whether protected forest area, degraded forest, or forest next to villagers' cultivating area.

The project area will be divided into four groups of communities, ranging from 12 to 31 villages each, in which project staff can work closely with the communities. Each operational area will be permanently manned by a staff to coordinate activities and promote cooperation among people's organizations in different areas.

The project will work through subdistrict (*tambon*) councils, the government's local administrative bodies responsible for the management of local common land and forest areas. The project will also work with community leaders, both formal and informal, Buddhist temples in the communities, and schools.

The Buddhist temple, or *wat*, has long been the center of culture and beliefs for community members. At many temples, natural resource conservation is already practiced. Through meetings with monks, the project will help temples to play a larger role in community conservation. A gathering of monks in July 1991 with resource people from Khon Kaen University took place at Kasetvisa, near the GRID training center.

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# Catalyzing Farm Forestry Through Integrated Agriculture

*Andrew Mittelman and Vichien Srelukwa*

The Agro- and Community Forestry Project of Save the Children, an NGO based in the United States, is active in two districts near Nakhon Sawan, in lower northern Thailand. The project started in 1990, and now cooperates closely with several hundred demonstration farmers in 15 villages. Its goal is to establish adoptable models of integrated agricultural systems (including trees) in collaboration with farmers.

Early in project discussions, farmers in the area commonly expressed the problem that moisture was not adequate for good crop yields. They generally agreed that this problem arose in the last 20-30 years, with the destruction of forest cover. Intermittent droughts became increasingly frequent. They agreed also that erosion reduces the soil's capacity to retain water and thus makes plants more vulnerable to drought.

Project discussions with village groups in this way facilitated an analysis of the key problems of poor crop production and farm degradation. Farmers were primarily concerned with short-term production, not with environmental rehabilitation. However, when they realized that year-round income from raising fish, chickens and vegetables would compensate for reduced yields caused by crop competition with trees, they became much more open to alternatives of integrated farming.

Village farmer groups have organized and have reached consensus that farming systems integrating food crops with livestock and tree products, centered around a small year-round water source, are most effective. In integrated aquaculture systems that they have designed, short-term benefits compensate for the time required for tree crops to mature.

The project provides funding support to farmers selected by the farmer groups to establish demonstration farms. This support generally comes through village revolving-loan funds for agro-and community forestry development. Demonstration farmers also receive seeds for cover crops, biological pesticides, and rhizobial inoculants.

During the first year of developing the demonstration farms, a group of project staff and farmer-group members periodically assesses what is needed to improve the farm system. Based on that assessment, Save the Children often provides the additional inputs -- such as seeds, small amounts of inorganic fertilizer, or loans for purchasing poultry feed -- without charge. Small subsidies are available only after a farmer has already made a substantial cash investment of his or her own.

To interested farmer-group members, the project supplies seedlings and selected other inputs, like herbal pesticide solutions. Farmers understand that later, if they are still interested, they will need to either purchase or produce these inputs

on their own. Like demonstration farmers, other group members are entitled to staff visits as they develop alternative systems. Unlike demonstration farmers, however, they must request the staff visits.

In cases where the demonstration activities of members-at-large are better than those of the formally selected demonstration farmers, the project provides them with a level of support similar to that received by the formal "demonstrators."

As for training, the project organizes hands-on workshops for farmers and field trips to see techniques in action. "Farmer-adapted" training materials from other sources are distributed, and new ones developed when possible. For trips lasting longer than one day, the project generally compensates farmers for the time away from their farms.

Staff follow-up with regular support visits, intended to give encouragement and timely information for problem-solving, to participating farmers. Visits also aim to stimulate awareness of ecological processes.

*A farmer-expert shows nursery managers how to graft fruit trees. Sales of fruit-tree seedlings make farmer-run nurseries viable enterprizes.*
*Photo: Save the Children.*

## Collaborative Planning Meetings

The series of five or six collaborative planning meetings described below are vital to Save the Children's approach. The meetings tailor the project to needs and interests identified by farmers. Farmers are encouraged to identify and prioritize local agricultural problems, and to recommend potential strategies for their solution. Information and recommendations by project staff help to guide discussions of appropriate strategies toward a recognition that many of these problems are a result of environmental degradation. Integrated agriculture, agroforestry, and community forestry are explained as farming and land management packages from which farmers can select technologies appropriate to their key problems. Many of these techniques are already familiar to farmers.

As far as possible, farmers groups are given responsibility for designing the project: from demonstration systems and selection of demonstration farmers, to decisions on how best to use project support funds. The main objective is to confirm the villagers as the project's "owners." Project staff serve as facilitators. As the project is woven into the fabric of on-going village activity, the task of ensuring its continuation should become easier.

### The First Meeting

The first meeting with farmers surveys farmer-identified agricultural and environmental problems and identifies possible causes for each commonly perceived problem. Project staff elicit farmers' suggested strategies for solving each problem, and encourage farmers to rate the feasibility and likely effectiveness of each strategy. The group then discusses the inputs required for each strategy. The project staff facilitate a better appreciation of the causes of the commonly perceived problems, and suggest strategies that farmers may not be familiar with.

The meeting includes a slide show entitled, "Environmental degradation and production decline: Integrated agriculture, agro- and community forestry to improve productivity in damaged agro-environments." The lessons from the slide show are:

- o Forest destruction has led to soil and site degradation and lower farm production.

- o Cash-crop monoculture requires many external inputs for fertility and pest management. It often leads not to expected profits, but to debt nd continued land degradation.

- o Integrated agriculture with tree-growing systems offers a range of techniques for rehabilitating damaged ecosystems and restoring productivity and economic stability.

**The Second Meeting**

At the second meeting, the farmers and project staff:

1. Review the recommendations for addressing commonly perceived agricultural and environmental problems.

2. Discuss appropriate roles for local farmers and the project in developing on-farm demonstrations of promising techniques.

3. Farmers propose options for on-farm demonstrations.

4. Modify demonstration designs based on farmers' and project staff feedback.

5. Consider criteria for selecting five farmers to serve as demonstrators in the project's first year.

Videos shown during the second meeting highlight: the harmful effects of deforestation on watershed ecology; multipurpose trees in farm systems for environmental and economic benefit; and intercropping under fruit and multipurpose trees.

**The Third Meeting**

At the third meeting, project staff elicit recommendations of how the project could be most useful to local farmers. They invite participants to join a village farmers' group and discuss appropriate methods of providing support for members.

Discussion also includes integrated agriculture and agroforestry methods, reasons and techniques for using various natural crop-protection techniques, and low-input techniques for pond fish culture.

Farmers receive order forms for fruit and multipurpose (mostly nitrogen-fixing) tree seedlings and seeds, cover and green manure crop seeds. The key characteristics of effective demonstration farmers are explained, and group members are asked to suggest effective demonstrators.

### The Fourth Meeting

Farmers are asked to list the kinds of agroforestry, integrated agriculture, and community forestry activities they would like to demonstrate or have demonstrated in the first year.

Project staff review the important characteristics of effective demonstration farmers and ask farmers again to recommend several people whom they feel would serve best as the project's Phase I demonstrators. The meeting then selects five demonstration farmers.

The project's planned material and technical support to demonstrators is discussed and adjusted according to feedback. The group aims for consensus on the support to be provided to demonstration farmers and farmer group members.

Project staff collect the tree and seed order forms distributed at the fourth meeting and discuss with farmers any potential technical problems related to their choices. The staff answer questions regarding other issues and farming problems, and clarify the project's plan for operations.

### The Fifth Meeting

The group discusses and adapt agreements for loans (actually, deposits to village revolving-funds) to be made by the project, particularly to demonstration farmers. Loan agreements are then signed, and logistical arrangements are made for tree and seed distribution.

As training, the group discusses the uses and appropriate planting sites for various cover/green manure crops and multipurpose trees. A lesson is provided in how to plant trees on different types of sites and soils.

The group reviews the farmers' agreements regarding tree planting and husbanding procedures to qualify for project-subsidized seed, seedlings, and organic pesticides. Project staff clarify points for farmers as necessary.

### The Sixth Meeting

An optional sixth meeting would take place if the above objectives are not fully accomplished in the first five meetings.

## Potential for Synergy Among NGOs, Research, and Support Agencies

Many NGOs have knowledge and experience important for planning projects. Along with farmers, these organizations probably represent the greatest existing storehouse of field-tested experience in sustainable agriculture and resource management. The lessons gained from this experience should be catalogued for use by others.

Even the most experienced NGOs, however, lack access to state-of-the-art technical inputs. This is where research and support institutions can help. Efforts to build technical capacity among NGOs would show great returns in increased

NGO effectiveness. It would also provide researchers with opportunities to target their research on needs as perceived by farmers. Effective collaboration among the two groups would create a dynamic synergy.

## Lessons Learned

*A farmer demonstrates a device he invented to make narrow wood strips for handicraft production. Photo: Save the Children.*

Trees are only one component of small-farm and rural resource systems. They are a critically important component, but small relative to farmers' livelihood needs.

Save the Children in Nakhon Sawan is helping farmers to analyze their main farming problems, their causes, and organizing resources for addressing them. By working on farmers' terms to remove constraints to food production and small-scale income generation, the project is opening opportunities for growing trees.

Understanding farmers' decision framework is an area where NGOs can help technical support agencies to make their services more effective. With a more holistic view of farmers' problems and opportunities, support and donor agencies could work with NGOs to catalyze a renewed effort by rural people at restoring their tropical forests.

**Acknowledgements**

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# Agroforestry for the Subsistence Cultivator

*Payong Srithong*

> "If we destroy the forest, we destroy the streams.
> If we destroy the forest, we destroy the rain.
> If we destroy the forest, we destroy wildlife.
> If we destroy the forest, in fact, we destroy ourselves."
>
> Uncle Yoong Lao, former Karen headman of Ban Nam Phu, a Karen village in Srisawas district, Kanchanaburi province

The cultivation and livelihood of native peoples depend on the good condition of nature, particularly that of the forest. Still, government and urban environmentalists identify the farming practices of so-called "hill tribes" or "ethnic minorities" as a major cause of forest and watershed destruction. Their hunting is condemned as a major cause of wildlife extinction. While such a claim is not wrong, it is not always true, either. The Phlow Karen (or Pwo Karen) who live in mountainous areas of Suphanburi province show that indigenous people can live, and have been living, in the virgin forests. There they have used the environment for their livelihood without causing destruction for hundreds of years.

This short paper will discuss the impacts of tropical forest destruction on the livelihood and ecology of the Karen people, reforestation programs initiated or licensed by the government, and an agroforestry program initiated by the local people as an attempt to cope with these problems.

## The Karen Subsistence Cultivators

In northwestern Suphanburi province in western Thailand live about 1,300 Karen people. They earn their living by swidden agriculture in which they grow several varieties of upland rice and around 100 cultivars of root crops, vegetables, fibers, and ornamental plants. Their practices of swidden cultivation on a rotation of two or three years of crops followed by a fallow cycle of around four years shows a sound understanding of natural resources and sustainable use (Srithong 1990). Other systems of ecologically sound community resource management in northern Thailand have been reported by Ganjanapan (1992).

Yet the livelihood of Karen swidden cultivators is threatened. Over the last 15 years, an estimated 80,000 ha (500,000 rai) of virgin forest surrounding their communities has been destroyed by timber companies and land-hungry farmers. This destruction has affected the Karen in many ways. Mushrooms, bamboo shoots, vegetables, and wild animals, formerly plentiful, have vanished. Dry seasons have grown longer. The weather has become warmer. These changes have severely affected the productivity and stability of traditional agriculture, particularly the rice harvest, upon which the Karen depend.

## Reforestation: Is It Just Growing Trees?

Shortly after a large area of the forests had been cut, the Royal Forestry Department in the Ministry of Agriculture and Cooperatives, showed concern about the need to rehabilitate the deforested areas. Two forms of reforestation programs began. First, the Forest Industry Organization planted a large-scale Eucalyptus plantation, mostly *Eucalyptus camaldulensis*. The stated aims are to reforest degraded forest land, improve the forest environment, and improve forest economics. The last stated reason appears to be the most important, since the trees grown are *Eucalyptus camaldulensis, Gmelina arborea, Leucaena leucocephala,* and *Melia azedarach.* These fast-growing trees provide raw materials to plywood and pulp industries (Korvanich 1985; Sribasri 1985; RFD 1985).

The second type of program started in 1987, when the Deputy Minister of Agriculture and Cooperatives signed a concession allowing the timber company that had destroyed the forest to reforest the area with *Tectona grandis, Pterocarpus macrocarpus, Melia azedarach,* and *Azadirachta indica.* Ecologically, growing these local trees is much more sound than growing Eucalyptus. But when social and economic variables are considered, problems become clear. About 16,00 ha (100,000 rai) is held by a few individuals. The local people gain nothing from such a program, not even the right to collect vegetables and bamboo shoots. In other words, the politically powerless local people are excluded from sharing any benefits from the forest which they have preserved for centuries.

## Agroforestry by the People and for the People

The Karen's traditional agriculture is therefore under these pressures and more exposure to market economics. Now, their cultivation goals are based not only on subsistence but also on the market. Programs intended to aid development in the Karen communities must therefore aim to:

- help villages attain economic self-reliance
- generate a small income
- protect the environment

Recently, staff of Technology for Rural and Ecological Enrichment (TREE) analyzed and designed several environmentally sound agricultural techniques for the Karen communities of Tapern Ki, Ban Kluay, and Ong Phra in Danchang district. These include hedgerow cropping, alley cropping, and agroforestry (Srithong 1991). Here we will mention only agroforestry innovations.

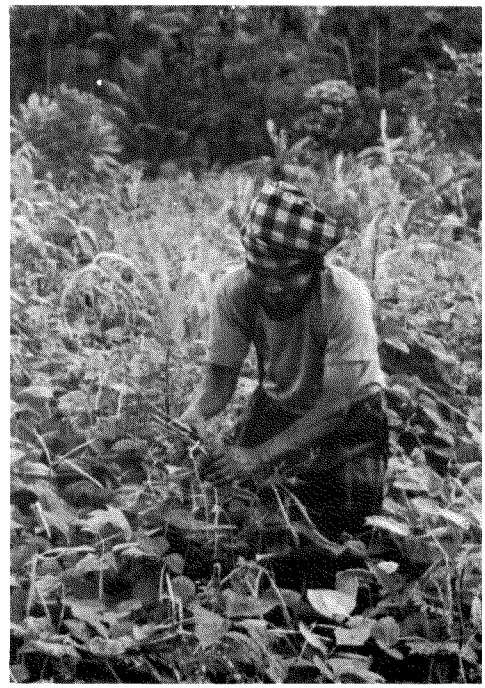
Agroforestry is a land-use system where trees are intentionally incorporated into the same pieces of land with agricultural crops and/or animals, either in some form of spatial arrangement or temporal sequence (Farrel 1983). In the case of the Karen, agroforestry refers to a combination of perennial trees, annual food crops, and some shadelike herbaceous plants grown simultaneously on the same piece of land.

In determining what tree species to grow and how, staff considered:

- o economic objectives of the local farming practices
- o social and cultural contexts of the communities
- o ecological potential

Before starting the pilot project in 1989, group discussions were organized in the evenings. The villagers received help in analyzing their problems and the search for solutions. In fact, the villagers initiated the project by requesting seedlings of fruit trees.

Agroforestry is easy for the Karen to understand since in fact they have been practicing it for a long time. In deep forest, some villagers clear the small bushes and leave the big trees standing, growing cardamom (*Amomum kervahn*) under the canopy (Purseglove 1972). Formerly, the Karen sent cardamom as tribute to the royal court of Siam. Nowadays, if not severely damaged by wild rodents, the Karen in these villages, particularly Tapern Ki, harvest around 3-4 tons of cardamom each year, valued at 360,000-480,000 Baht (US$14,400-19,200). Some villagers also grow kapok (*Ceiba pentandra*) and banana (*Musa paradissaca*) in combination with upland rice (*Oryza sativa*) and cotton (*Gossypium herbaceum*).



*A Karen farmer in Danchang village harvests produce from a "relay" cropping system that combines nitrogen-fixing crops wi traditional food crops for better land use. Photo: Payong Srithong*

Considering the area's ecological factors -- soil, temperature, humidity, rainfall and sunlight -- a variety of perennial species may be suitable, including: *Mangifera indica, Baccuaura ramiflora, Artocarpus heterophyllus, Citrus maxima, Cocos nucifera*, and even *Coffea arabica* and *Hevea brasiliensis*. Socioeconomically, however, *C. arabica* and *H. brasiliensis* are not suitable since their markets are highly commercialized, monopolistic, and very far from the production areas.

In group discussions, the villagers expressed the desire to grow only fruit trees, particularly *M. indica*, for family consumption. Later, if there is some surplus production, it may go to markets. Another species desired by them is *Citrus hystrix*, fruits of which are used in cooking. In the long run, the combined needs for food, tree cover, and income may requre the farmers to grow fruit trees commercially. This will depend on the farmers and their choice of which species and how many trees of each. This, in turn, will depend on the roles the trees serve as a supplementary or major source of income.

## Roles of TREE in Tree Growing

TREE is the only outside organization currently working with the Karen. TREE is an NGO that advocates eco-farming and environmental protection. It receives funding from Bread for the World and other international groups. TREE's present roles are:

1. helping villagers to assess the importance of nature to their livelihood, and assist them in identifying their problems and real needs

2. providing fruit seedlings and technical assistance in areas such as soil preparation and grafting, and conducting research on suitable cover crops

TREE is now helping 85 families to grow fruit trees in their home gardens. Each family has received 7-10 seedlings, composed of 6 cultivars of *M. indica, A. heterophyllus, Citrus auramtifolia, C. hystrix*, and *Cocos nucifera*. This has served as a pioneering activity for an upcoming long-term TREE project, Plant Genetic Resources Conservation and Sustainable Development in the Karen Communities, which begins in January 1992.

## Conclusion

In this paper, we have seen that indigenous people in western Thailand have been living and making use of the forests for hundreds of years. With the rise of the modern state, however, management and utilization of these invaluable resources have excluded roles of the local people. Destruction of tropical forests has resulted directly in the deterioration of livelihood and ecology of the indigenous people.

Attempts to rehabilitate deforested areas should consider not just the ecological requirements of tree species, but the economics and social participation of local people. TREE's agroforestry project recognizes the capability of under-privileged people in determining problems, needs, and remedial measures proper to their specific environments. Reforestation means not only growing trees but also growing ecological consciousness and comprehensive thinking in the minds of those who determine policy, as well as villagers.

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# *WORKING WITH GOVERNMENT*

# New Challenges for the State Forest Departments

*Anil C. Shah*

Consider the following noble objectives:

". . . is intended to be planned and implemented by the villagers themselves, Government offering technical and financial assistance."

"It is for the villagers to tell us what they want and for us to assist them."

"No programme, howsoever well conceived, can succeed without the active participation of the people."

"People's participation is a dominant theme . . . runs like a central thread to the whole . . . programme."

"Creating massive people's movement . . . programme cannot survive without the willing support and cooperation of the people."

## Noble Objectives Do Not Produce Results

The first two objectives were expressed by India's highest policy makers in the 1950s on the Community Development Programme. The last three objectives appear in official documents on the National Forest Policy and the Mission on National Wasteland Development Programme, issued 1988-1990. Despite a gap of more than 30 years, the similarities are striking. In the interim period, the participatory approach has been incorporated into various development programs for agricultural extension, irrigation management, and others.

The first set of Community Development projects in India in 1952 were seen as successes and extended to cover the entire country. A major review by Balvantrai Mehta Committee, however, found the program seriously lacking in people's participation, and recommended control by elected representatives to ensure the people's key role in decision-making. This led to the shift to the *panchayat* system of the 1960s in most states in India.

Soon, though, *panchayat* institutions and elections were ignored and bypassed. As for Community Development, the concept and title were both dropped in 1971 and replaced with 'Rural Development.' An independent program evaluation in the late 1980s concluded, "Notwithstanding the lip service to the importance of people's participation, people and their organizations have all along been kept at a distance." Like rural development, other development programs are still struggling to realize the objective of people's participation.

Since the participatory approach was introduced in forestry relatively recently in the 1980s, it has the advantage of learning from the strengths and weaknesses of other development programs. This is especially important for state forest departments (SFD) in India, which for over 100 years had to deal with the

people only as laborers. Incorporating people's participation will require major reversals.

### Understanding People

First, foresters have to know and understand the people living in and near the forest (which in many cases is only denuded forest land). They have to meet these people where they live, and observe their relation to the forest and its various products. When foresters speak openly with the people they will find how much the villagers know about the forests. In tribal areas of Gujarat, the Aga Khan Rural Support Programme (AKRSP) conducted participatory rural appraisal in which villagers listed 13 varieties of grass; the technical experts only knew of 6 varieties.

To indicate their preferences for tree species, villagers listed 18 criteria and quickly ranked various species against each criterion. The resulting matrix helped the program to select species that were both desired by the people and technically appropriate for the sites. Quite possibly, species selection in a participatory forestry program may shift from rotational species to non-rotational species that benefit the people through the forest produce gathered by people from standing trees, rather than from the trees' timber value when felled (Chambers et al. 1989).

With the help of experts from the Government and non-government sectors, the National Wastelands Development Board is preparing guidelines for village-level planning. The guidelines will be useful for gauging the state of a village's natural resources as well as the villagers' perceptions and priorities for their use. Still, such guidelines presume that those who undertake participatory planning believe in the people's knowledge and skills and value their cooperation. Mutual distrust between foresters and villagers will not disappear easily. The first challenge in the participatory approach is to transform the present adversarial relationship into one of common purpose.

> A diagnostic research found that most conflicts between the foresters and forest communities could be attributed to three factors. These were: longstanding disputes between forest villagers and state foresters over forest lands; a history of bureaucratic misbehavior among many field foresters, including corruption, exploitation, and involvement in teak theft; and the failure of the highly centralized state forest department to adapt its . . . policies to diverse ecological and socioeconomic circumstances.

This finding comes from a study by Peluso et al. (1990) on Java in Indonesia. To the extent that it is also true for India, heroic efforts will be required to change this relationship.

At the same time, foresters will have to learn not to be put off by the usual class/caste conflicts in the village community, as elsewhere, and to learn along with the villagers how to deal with local 'bullies' who would try to distort development programs to their own advantage. Realizing that only people can save the forests, the wise course is to accept them as they are and work with them to bring out their potential, just as foresters attempt to realize the potential of forest land, however degraded.

The real test is how foresters react when villagers are emboldened to criticize the department and its officials. When I took a Conservator of Foresters with me on a village tour, without his subordinates, and introduced him as a guest, he was stunned by the villagers' criticisms of his department and its officials. One benefit of the discussion was that he learned how the bribery practiced to let animals graze in a protected sanctuary had become almost systematized.

### Flexibility to Respond to Local Variations

Participatory village-level planning has meaning only if the emerging priorities are respected and accommodated within state forest departments' programs. This requires far more flexibility than these departments, like other government agencies, are used to. Even in the 'social' forestry program, a study revealed that in Tamil Nadu the staff spent only 6% of their time on extension, against an expectation of 40%. To implement the Government of India's June 1990 landmark guideline on village and NGO involvement, state departments must include in their plans mechanisms for evolving plans with the forest communities, plans that reflect the communities' views and needs. Only then will the communities work to make the plans successful.

### Working with Village and Voluntary Organizations

The Ministry of Environment and Forests' June 1990 instruction mandates state forest departments to work with forest communities through the communities' organizations (not necessarily formal ones) and voluntary organizations active in their area. This challenge will require a new partnership approach, sharing of responsibilities and authority. AKRSP has found that foresters are quite uncomfortable in dealing with villagers' organizations, even ones with demonstrated capabilities. In one project village where members of a village organization voluntarily protect forest land, the foresters insist that the volunteers take payment for protecting "their land," so that they may be equated with paid *chowkidars* (watchmen). The volunteers accepted the payment, and promptly deposited it with their organization! Villagers' organizations are not contractors, not agents, but partners in joint management.

### Better Communication of Policies and Programs

The participatory approach is new to state forest department officers, and is to be applied not just to non-forest land (as in the social forestry program) but to the holy of holies -- forest land. Therefore the local officers will need great support from their senior officers.

They will also have to change their mode of communication with villagers. AKRSP has found that 23 villages near Gir forest have been deprived of 10,000 ha of panchayat grazing land for expansion of the Gir lion sanctuary. Fifteen years after acquisition by the Forest Department, as recently as 1990, villagers still refer to this land as "Section 4 land"; they were not informed that the SFD holds these lands under Section 26. The process of establishment and management of wildlife

sanctuaries is a mystery to villagers in the area. With the SFD inviting village and voluntary organizations to enter and protect the forests as their own, they will have to entrust them with information about the new plan for participatory forest management.

### Learning Through Pilot Projects

To avoid the pitfalls of earlier participatory efforts, state forest departments should experiment and learn from pilot projects. These may draw on NGOs that could share their experiences in working closely with the people, and that can provide frank feedback. Since a significant part of the program will be simply to protect land for natural regeneration (unlike the more high-profile social forestry), the program will not attract a large budget. In addition to people's participation, technical soundness, cost-effectiveness, and equity will be crucial issues to guide the initial phase. Only after these have been proven should the program expand. Targetism in area or numbers of trees, as the Programme Evaluation Organization of the India's Planning Commission has noted, is sure to kill participatory quality.

Training can help. Exposure, preferably through deputation and association with successful experiments in the participatory approach, will be more useful. No training, however well designed, is as good as hands-on experience.

### Support from the Top for the Challenge

The *ad hoc* experiments in participatory forestry undertaken by some forest officers and NGOs are now being recognized (and almost sanctified) by the National Forest Policy, the Technology Mission on Wasteland Development, and above all by the policy instructions of the Government of India in its communication of 1 June 1990. This last has been called a watershed in the history of forest management in India, and will generate impulses from the top to move in new directions. Its success will depend on top officers in the forest departments demonstrating clear understanding, personal interest, and involvement in field operations. With the benefit of the experience of other development programs and an encouraging environment of fresh thinking at the national level, there is reason for hope. With these, state forest departments can reverse natural bureaucratic tendencies for centralized, standardized planning to decentralized, innovative experiments. Then we can hope to see custodial forestry become participatory forestry.

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## Focus on : The Aga Khan Rural Support Programme in India

**Program:** Watershed Development and Management

**Program aim:** To restore the productivity of wastelands as a source of fodder, fuel, timber, and cash; and to develop water and animal resources for raising incomes among rural poor.

**Target clientele:** Poor farmers, landless people, and women, with an initial focus on poorer areas of Gujarat state.

**Timeframe:** The overall Aga Khan Rural Support Progamme in India started in 1985. The Watershed Development and Management component began soon after that, and is ongoing.

**Resources:** As of March 1991, 16.45 million rupees (about US$632,700) were spent. Of this, 49.7% came from the Government of India, 36.7% from the Aga Khan Foundation, and 13.6% from villager participants.

**Activities:** Through the program, farmers have set up 342 decentralized nurseries, and have reforested 1,171 ha public wasteland and 1,064 ha of private wasteland. Agroforestry is a key technology in this.

Village institutions have set up and run commercial fodder farms. A differential price policy allows the poorest farmers to buy fodder at a cheaper rate. Through these fodder farms, the program links with its sister animal husbandry program.

*Gujarati farmers protect their watershed by planting trees Photo: AKRSP.*

**Lessons:**

Through grassroots experience and constant interaction with the government, NGO programs can influence government policy on program areas. In this case, the most notable instance has been the Government of India's policy shift in June 1990. At this time the government issued a statement explicitly directing state forest departments to involve village communities and voluntary organizations in the protection and development of degraded forest lands.

# Transfer of Social-Forestry Technology Through NGOs : Problems and Prospects

*A.P. Dikshit and Y.P. Singh*

## Introduction

People's participation in social forestry is among the most important elements of forestry development policies of the Government of India. It has been given top priority, with the objective of meeting a target of 5 million ha annually through involvement of NGOs. There is growing awareness that NGO participation and a joint approach are essential ingredients for faster afforestation in developing countries. In India, this importance has gained wider recognition relatively recently.

With encouragement from the Government, several NGOs have taken on social forestry and wasteland development activities with great enthusiasm. They have proved their worth as catalysts for social forestry in the country. There are a few cases, however, where performance is less satisfactory.

In view of this variable performance, the Regional Centre on Social Forestry set up by the Agricultural Finance Corporation conducted a study of NGOs in the states of Rajasthan, Uttar Pradesh, and Haryana.[1] The study set out to identify problems and suggest specific means for meaningful NGO participation in social forestry. Out of 56 NGOs receiving support from the National Wastelands Development Board for social forestry, 39 were included in the study. Poor response to an initial mailing of questionnaires caused a switch to a case study approach.

## Lessons from the Study

From the case studies, the following conclusions were drawn.

### Farmers' Lack of Conviction about Tangible Benefits

The most challenging task for NGOs is to foster social awareness and community consciousness in the villages. Unless individuals are convinced that they will receive benefits, there will be little scope for motivating the community. Despite being informed of the advantages of the social forestry program, participants remain skeptical of its benefits.

### Lack of Consciousness about Community Participation

Without community consciousness, it is difficult to mobilize community action. NGOs are experiencing difficulties in motivating communities and creating

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[1]Report on Role of Non-Government Organisations in Social Forestry, *1991, by A.P. Dikshit et al. New Delhi: Northern Regional Office of the Agricultural Finance Corporation Ltd.*

such a consciousness. A fact of community life in rural India is that despite the strength of community values and social cohesiveness, the individual retains top priority in decision-making. The fear of not reaping any individual gain tends to discourage the villager from collective effort. In a number of cases, NGOs have created a commendable community consciousness and the desirable community action has materialized. Still, the general tendency of apathy among villagers towards community action poses a considerable problem.

**Weaknesses in Communication**

Often, controlling activities from a distance reduces effective NGO functioning. Some NGOs are off-shoots of bigger organizations with headquarters at state or national level, and find themselves virtually handicapped. For example, some NGOs in Rajasthan are run by a national organization, Serva Sewa Sangh, that has its headquarters at Varanasi district, in Uttar Pradesh.

**Supplement to Extension Efforts**

Technology transfer is not NGOs' main role. They could, however, effectively supplement the extension efforts of government agencies. It is usually through education and enlightenment that potential tree growers and plantation workers receive technical know-how on planting, protection, and forest management. Efforts to promote plantation on community land and on individual holdings require different approaches. The former demand a "group approach," while the latter needs personal contacts' for strengthening the transfer-technology systems.

## Recommendations for NGO Activities

Measures which could promote people's participation in community and farm forestry include:

1. Creating better awareness about the economic advantages of growing trees both on community land, and on individual holdings.

2. Providing needed and dependable information about government policies and programs on social forestry in general; and specific information about government incentives like grants, subsidies, input support, and market trends.

3. Adapting technological recommendations to farmers' areas and ensuring adequate and timely supply of inputs.

4. Arranging field visits to persuade tree growers about the success of a recommended technology, following the established value of 'Seeing is believing.'

5. Organizing training courses on aspects of forestry technology, local and profitable species, timing and density of plantations, use of fertilizer, plant protection, inter-cropping (for sustaining economic interest of the tree growers), and proper harvesting.

6. Distributing useful literature on the above aspects of forest technology.

7. Arranging village exhibitions to demonstrate different types of wood products obtainable from social forestry.

8. Organizing special campaigns on fuel-saving techniques that demonstrate the use of smokeless *chullahs* and pressure cookers.

9. Developing and promoting different models of farm forestry and silvipastoral practices.

10. Promotion of farmer and school nurseries.

## Roles for NGOs

NGOs may incorporate the above activities into the roles described below, in order to be effective change agents and carriers of technology to potential tree growers.

### 1. Helping Extension and Research Agencies to Generate Technologies

An important role of voluntary agencies is to provide feedback to government agencies. This helps researchers to develop demand-based technologies for a wider range of beneficiaries. This role would justify the extension role in the context of the two-way channel of communication.

### 2. Adopting and Adapting New Technologies

NGOs should emphasize adoption of appropriate technology for different types of activities. Some NGOs with adequate resources may evolve innovative technology. A leading NGO in Uttar Pradesh is already doing this. The NWDB can explore the possibility of encouraging capable NGOs to do this elsewhere.

In this respect, NGO personnel could receive training in different extension methods from any of the education programs run by the Director of Extension, GOI, or by the Directorate of Extension Education of state agricultural universities.

### 3. Training in Transferring Technology

Training, defined as 'a planned communication process which results in changes in attitudes, skills and/or knowledge in accordance with specified objectives related to the desired pattern of behavior,' is essential to the extension process. NGOs can impart preliminary training to potential tree growers, forestry labor, village youths, farm women, grass-root level functionaries of village panchayats, schools, and cooperatives. Training may nursery raising, plantation, irrigation techniques, preservation and protection of forests against fire, soil erosion, and problems of plant pathology. Special training programs may address the needs of particular

groups, for example rural youths and farm women. The scope of training can be widened to cover fuel-saving techniques, wood-product processing, and orchard growing.

Effective training is based on a needs assessment of the target group(s). A training program should emphasize task-oriented objectives and provide for evaluation using quantitative methods. For example, if the task is to train tree growers in proven plantation practices, the impact of training should be measurable in terms of added knowledge about how to prepare mixtures of earth sand and manure for seed beds and polypots, and the names of recommended species. The type of training determines the training methodology. An emphasis on 'learning by doing' is often very effective.

**4. Linking People and Government in Promoting Farm Forestry**

Farm forestry is an important component of the social forestry program and provides NGOs the greatest opportunity for meaningful participation. In this context, NGOs should strengthen the links between the state forest departments and villagers and bridge the gap between the government and people to make them equal partners in forestry. NGOs must take this role cautiously to avoid confusion among villagers about the NGO's motives. NGOs have to understand the psychology of the rural community and remove misconceptions about the government machinery.

**5. Facilitating Input Management**

Farm forestry is an enterprise, which, in addition to adequate technology, also can require credit, fertilizers, plant protection, chemicals, and sometimes equipment and irrigation facilities. NGOs can help to provide or arrange these facilities to prospective entrepreneurs. Here again, this means a linkage role for the NGOs.

**6. Replicating Successful Models of Participatory Development**

Once they have proved themselves, models of participatory development and participatory management in social forestry may be replicated on a wider scale. The models developed scientifically and adapted systematically are few. Some that can be successfully replicated are the Sukhomajari Project Model of participatory Management, IFFCO Farm Forestry Model of Community Organization, Jawaja Project Model of participatory development, Sewa Mandir Model of voluntary action, PEDO model of functional training, and extension-oriented model of Sanjeev Sewa Samithi, Udaipur. However, replication should come only after assessing the model's suitability to local conditions and making modifications where necessary.

**7. Giving Counsel in Management and Marketing of Forest Produce**

NGOs should advise village forest committees on wood products management and marketing activities. In this, they can help organize village marketing cooperatives.

### 8. Providing Education in Fuel Saving

As mentioned above, NGOs can promote smokeless chullahs and solar cookers. In addition, they should educate people in construction and use of improved crematoria - an issue which involves community and social values.

To summarize, there is great scope for NGOs in transferring technology to prospective tree growers. NGOs can link villagers to government programs and resources. The task, though challenging and bound to produce variable results at first, is worth taking up because of the great potential benefits -- improved management of natural resources, tree products that meet people's needs, and better links between the people and government programs.

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# Partnership Between Government and People's Organizations :
## The Case of the Agroforestry Livelihood Project in Luzon, Philippines

*Carlos C. Tomboc and Anita S. Guillen*

### Introduction

This paper relates the one-and-a-half year experience in the Agroforestry Livelihood project, one component of the Integrated Social Forestry-Comprehensive Agrarian Reform Program. The paper outlines lessons learned from both the government side and the people's organizations in three sites in Region 1 on the island of Luzon, and how these relate to the promotion of tree-growing technologies.

The Philippines has a long history of tree-growing by farmers. The first official record of tree-planting there was in 1915 on the slopes of Mt. Makiling in Los Baños, Laguna. This was followed by several reforestation projects by the former Bureau of Forestry. The creation of the Reforestation Administration in 1960 gave new momentum to reclamation of denuded forest lands through tree growing. Still, government efforts at replanting denuded forest have been outpaced by forest denudation, and environmental stress is becoming evident. Accelerated soil erosion, siltation of rivers and dams, rapid loss of soil nutrients, droughts in summer, and floods in the rainy season now occur in regular cycles.

In the search for solutions to these problems, the government believed that the key to successful reforestation is involvement of the citizenry. This paved the way for the "Tree Planting Act," signed in 1977, which made tree farming the entry point for people's participation in the national reforestation program. Several programs started as a result, including the Forest Occupancy Management program, designed to limit "slash and burn" activities by granting forest dwellers a renewable two-year forest occupancy permit on the condition that the holder plants trees in his or her area.

Another program begun was the Family Approach to Reforestation, which contracted forest land occupants and their able family members for reforestation. Later this was expanded to benefit landless farmers in adjacent rural communities, and in turn led to the Communal Tree Farm Program.

Despite these tree-planting programs, however, reforestation has not kept up with forest destruction. The upland population increases at an alarming rate and forest destruction continues unabated.

### The Integrated Social Forestry Program

In 1982 DENR, recognizing the potential of upland communities as partners in development, launched the Integrated Social Forestry Program (ISFP).

ISFP merged all the government's socially-oriented upland development programs. Its main objective was to convert denuded occupied forest into productive, stable, and sustainable ecosystems for the benefit of the communities in those areas. The main feature of the program was the awarding of a Certificate of Stewardship Contract, which is issued to qualified participants to guarantee them land tenure for 25 years, renewable for another 25 years.

In the later 1980s, the Aquino government made the Comprehensive Agrarian Reform Program (CARP) central to its rural development programs, with ISFP as a strategy for the uplands. Hence the start of the ISF-CAR Program, with the Department of Environment and Natural Resources (DENR) as the lead agency.

## The Need for Research

Plans for merging the two programs identified lack of appropriate upland technologies as a major constraint. Planners felt that existing upland practices were inadequate, and recommended pilot testing of technologies found successful elsewhere. In many cases, such technologies require adjustment. Adoptability of introduced technologies by upland dwellers was another problem demanding attention. Through the Ecosystems Research and Development Bureau (ERDB, formerly FORI), DENR launched the ISF-CAR Research and Development Program to address the program's technology needs.

## The Agroforestry Livelihood Component

The Agroforestry Livelihood Project is one of nine components of the ISF-CARP R&D Program. Its main goal is to create livelihood opportunities for ISF-CARP participants without adversely affecting the environmental balance. As with the other eight livelihood projects, it works through collaborative partnerships between government personnel and community participants (See Figure 1). Its specific objectives are to:

1. Generate employment opportunities and enhance the rehabilitation of upland resources

2. Characterize each selected area in terms of edaphic and climatic conditions and determine suitable tree-crop combinations that would give substantial economic returns

3. Assess existing agroforestry practices and introduce new ones that would fit the ecological systems and the people's economic demands

4. Generate and package sustainable technologies through the conduct of relevant research for formulation of upland development policies

5. Establish demonstration areas that could serve as models for possible adoption by upland dwellers

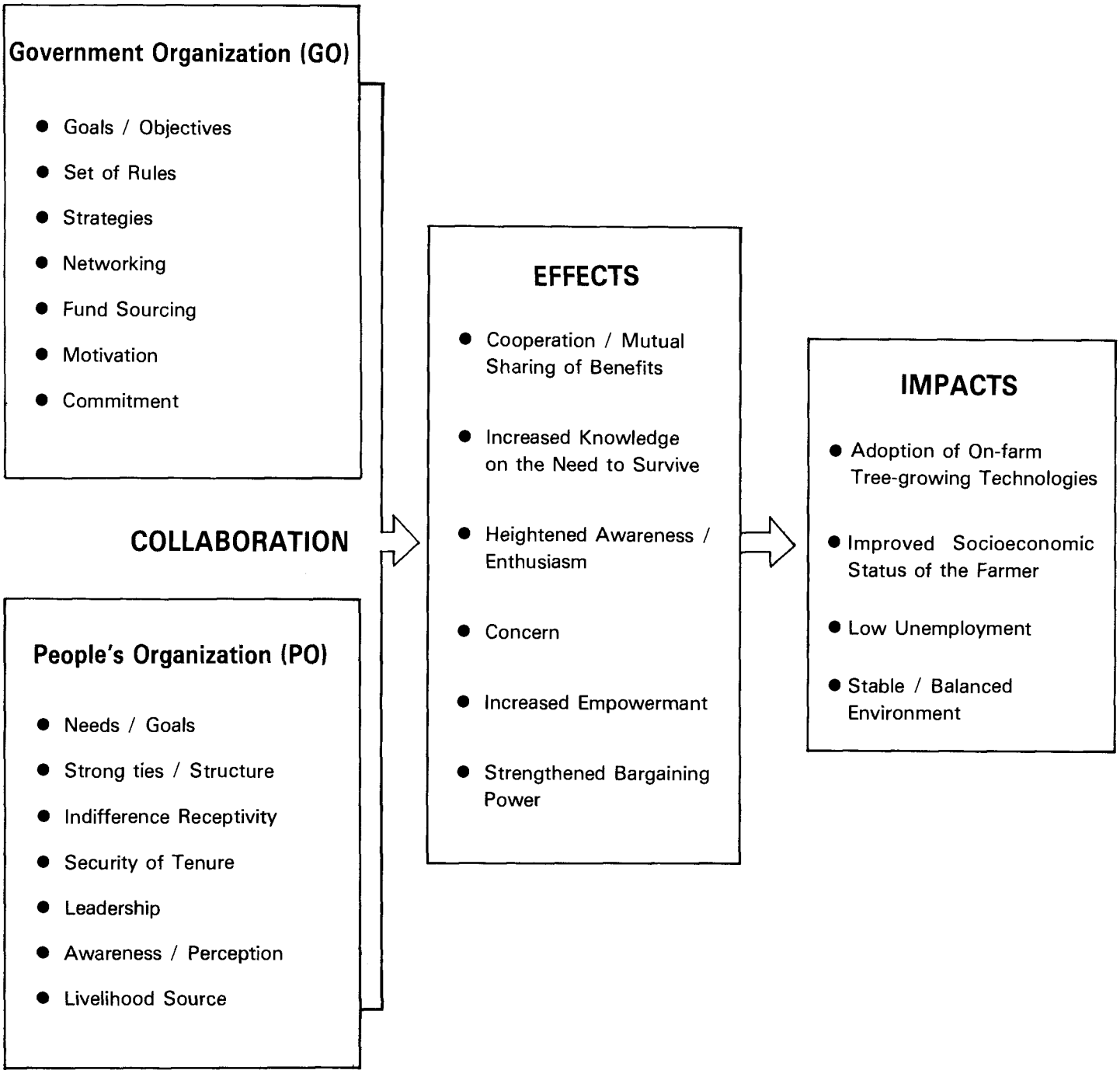


**Figure 1.** Conceptual framework for the GO-PO interaction in the promotion of on-farm tree-growing technologies.

The project follows this sequence: (1) reconnaissance and pre-diagnostic survey; (2) physical and social characterization of the project sites; (3) creation of interagency/intersectoral linkages; (4) participatory community planning, community organization, and mobilization and (5) project implementation.

The Agroforestry Livelihood Project is active in 39 sites in the 13 regions of the country. This paper focuses on the experiences from three sites in Region 1, on the island of Luzon: Ambitacay, Agoo, province of La Union (Site 1); Gayusan, Agno, province of Pangasinan (Site 2); and Maradodon, Cabugao, province of Ilocos Sur (Site 3). Figure 2 shows the location of these sites on a map.

**Introducing the Project to the Area**

A team from the DENR research sector of Region I prepared the groundwork at the three sites. The community-organizing phase was led by the Chief of the Social Forestry Division, with the support of the local Community Environment and Natural Resources Officers. At all three sites, the Community Development Assistant (CDA), who is the government's local liaison in community development, served as the link. The CDA usually has already developed a rapport with the community, speaks the local dialect, and is more or less accepted by the community as a member.

In all three sites, the participants were already knowledgeable about reforestation, forest conservation, and the importance of ISFP. Hence their enthusiasm and interest in the project.

For each site, the CDA identified a focal person. In Site 1 (La Union), the focal person is a member of the *barangay* (community) council. He has a thorough knowledge of the DENR's programs, and is a recognized leader with influence not only in the community but also among the local government offices in the area. This focal person ensured that the *barangay* captain, the recognized local political leader, was kept informed of project activities. In Site 2 (Pangasinan), the focal person is the *barangay* captain himself, who is also a participant in the regular ISFP. In Site 3 (Ilocos Sur), the focal person is again the *barangay* captain, whose relatives are ISFP beneficiaries.

In all three sites, the strategy was the same: Assign a government development worker to do the initial groundwork, then bring in researchers, increasing their participation in community activities until finally they are accepted as members of the community. They introduce the project's concepts and benefits for discussion in appropriate gatherings, formal and informal. Person-to-person contact played a crucial role.

**Organizing the Farmer Participants**

Even before project introduction in the sites, farmers had organized themselves into associations or cooperatives. These organizations were strengthened with the intervention of the government workers in preparation for the project.

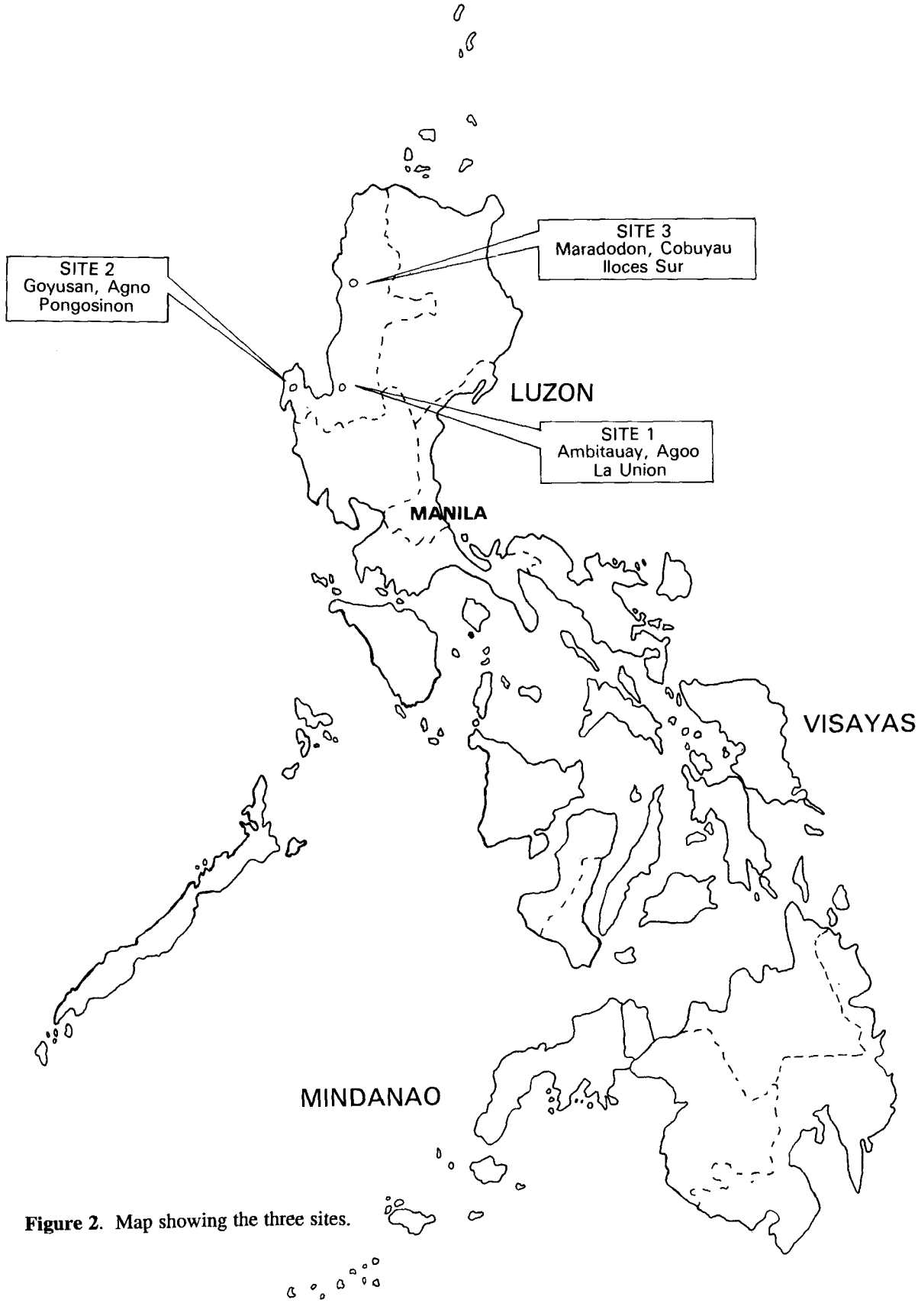


**Figure 2.** Map showing the three sites.

## Participation of People's Organizations (PO)

As soon as the communities accepted the project and farmer-cooperators were identified, physical and socio-demographic characterization of the sites followed with full participation of the participants. Farmers prepared individual farm plans with technical guidance from researchers. Farmers in the sites have long practiced traditional farming systems, and, as elsewhere, it is difficult to convince them to adopt new tree-growing technologies unless these are proven successful.

As the project progressed, participants expressed needs for facilities like foot trails, watering systems, dams, and nurseries. These needs were addressed through consensus decisions. In La Union, for example, farmer-cooperators pooled their resources to build water reservoirs to ensure a continuous water supply for their farms. The farmer's organization provided labor and materials; the government donated cement bags and hollow blocks. Again, for constructing seed beds in Pangasinan, farmers contributed labor and materials while the government contributed cement bags and hollow blocks. In Ilocos Sur, farmers constructed fish ponds as a community food source; the government provided the fingerlings. In short, the farmers' organizations in the three sites knew what they wanted, and they worked hard to get it with government assistance. They initiate activities, the government supports them.

## Project Impacts

It is premature to present conclusive findings on this GO-PO partnership. So far, the five-year project has run for only one and a half years. Preliminary observations show encouraging results. For example, farmers' have modified their traditional systems to include trees. The project has also mobilized more government agencies to support the communities in development efforts. This is attributed to the project implementors' intensive efforts at information dissemination.

## Lessons Learned

Several lessons can be drawn from the experiences in the three project sites at this early stage.

### Government Organization (GO) Side

1. GO project implementors must be technically prepared and oriented on the details of the project. Team building is important among the GO workers at a project site for smooth implementation and to establish credibility in the community.

2. In introducing the project to the community, the GO group should make themselves visible gradually. Initially, a contact person should lay the groundwork. This person may be either a GO worker resident in the area or a resident who has established rapport with both the GO and the community. As community members understand the

prospective benefits from the project, project staff should spend more and more time in the area and participate in community affairs, even those not directly related to the project.

3. The GO group must recognize entry points into the community. The socio-demographic information gathered during the rapid rural appraisal should provide possibilities for this.

4. Participants should be oriented with the project in a clear, simple and understandable manner. Special emphasis should be placed on clarifying the roles and expectations of the government agency and the participants. The GO should have several strategies for generating the interest and enthusiasm of community members.

5. Maximum manageable participation of the community in project planning, implementation, and monitoring should be encouraged. Farmers should also be encouraged to participate in training and cross-farm visits to stimulate their skills and interest in the project.

6. The government agency should encourage participants to pursue alternative sources of income for further economic improvement.

7. The agency should establish or strengthen linkages with important other government or non-government agencies in the project area.

**People's Organization (PO) Side**

1. Farmers know the importance of working together. They are aware of the benefits that a member gets from a strong organization, but it may require an outside intervention to bring them together to form an association.

2. Indigenous organizations are present in all communities, whether formal or informal. These could be involved in project implementation.

3. Community members know their specific needs and they expect the government to help them.

4. Every community has a leader, whether officially or informally. If properly involved, he can play a key role in making the project a success.

5. Farmers are cautious in adopting technologies new to them. It is easier to start with what is already familiar to them and indigenous to the community. However, if they see that new technologies are successful, they may be persuaded to modify their practices.

**On the Promotion of Tree-growing Technologies**

Over the years, researchers and development workers have tested different types of tree-growing technologies. However, upland farmers were observed to be slow to adopt those which deviate from what they have traditionally practiced. In

the Philippines, the most common of these are the indigenous multistory systems. These include:

- *Pinus kesiya* (Benguet pine) and coffee
- *Albizia procera* (akleng parang) underplanted with upland rice, root crops, bananas, pineapple, and other agricultural crops
- *Swietenia macrophylla* (mahogany) with root crops, pineapple, and banana
- *Alnus japonica* and coffee
- *Leucaena leucocephala* (ipil ipil) and coffee
- *Albizia saman* (rain tree, formerly *Samanea saman*) and coffee

Still, adoption of new technologies becomes easier once they are proven to the farmers to be successful and profitable, and planting stocks are available. Tree-growing technologies that offer quick economic returns hold promise in the uplands, but they should be compatible with the farm's ecological systems.

The following approaches may be most effective in promoting technologies:

- on-farm and farmer-run trials and demonstrations
- provision of start-up inputs, including seeds, cuttings, fertilizers, tools
- training in technical aspects, conducted by farmers with other farmers and by credible staff
- cross-farm visits

With the Agroforestry Livelihood Project conducted in 39 sites under various conditions, there is a promise of 39 case studies of participatory GO-PO partnership after its completion.

**Acknowledgement**

The authors acknowledge the contributions of the DENR Ecosystems Research & Development Sector Staff of Region 1, headed by the Regional Technical Director for Research, Forester Florendo Barangan; the *barangay* officials of the communities visited; the farmer-cooperators interviewed; and ERDB staff -- Mr. Bong Baltazar, Mr. Johnny Ebora, Mr. Julius Panting, Ms. Precy de Mesa, and Mr. Hector Payuan.

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# *NETWORKING*

# NGO-CORD for Networking in Thailand

The NGO Coordinating Committee on Rural Development (NGO-CORD) was established by 106 NGOs in Thailand in 1985, with encouragement from the National Economic and Social Development Board of Thailand. In 1990, NGO-CORD's membership was expanded to cover a wider range of development-oriented NGOs.

NGO-CORD consists of five autonomous regional coordinating committees covering: the North, Northeast, the Lower North and Central Region, the South, and Bangkok. At the national level, NGO-CORD has a central committee of 19 representatives elected from the regional NGO-CORDs. In 1991, full-time coordinators and other staff totaled 20.

NGO-CORD aims to: enhance the role and efficiency of NGOs through coordination; raise public awareness of social problems that NGOs address; and promote understanding and cooperation between NGOs and government agencies, while advocating on behalf of NGOs. NGO-CORD also forges links between NGOs in Thailand and abroad, including other national and regional NGO-coordinating bodies in Southeast Asia.

Member organizations range from community research and development projects to large national consortia.

NGO-CORD organized a joint government-NGO seminar on 'Land Problems in Forest Areas' at the Government House in 1989, and in 1991 was asked to participate in developing the seventh five-year National Economic and Social Development Plan, particularly the components dealing with rural development, social welfare, and education.

An example of NGO-CORD's role in linking research with grassroots development is a major study program started in 1991 with funds from the Ford Foundation on Community Forestry. NGO-CORD identified the Local Development Institute (LDI) to manage the studies. LDI in turn arranged with a number of NGO-CORD member organizations, including the Social Research Institute of Chiang Mai University, to conduct studies of indigenous forest management systems. Results from the first of two one-year-long phases of studies are expected to be published in mid-1992.

# NGOs Supporting Each Other :
## The Upland NGO Assistance Committee

*George V. Bañez*

### Introduction

In the Philippines, non-governmental organizations (NGOs), fueled by the success of the People Power movement since 1986, have experienced a surge in involvement in public service. This paper complements the paper by Dr. Romulo del Castillo earlier in this report, focussing on the role of the Upland NGO Assistance Committee (UNAC) in supporting upland NGOs.

### The Philippine Uplands

"Uplands" in the Philippines is defined as land with 18% slope or greater. Uplands are considered public domain, and in the national constitution, "uplands" is used synonymously with "forest." This usage protects the government's interest in the resource. It may have been considered ideal to put the forest under state ownership because of the communal benefits that everyone derives from the resource, but this policy overlooks claims of the residents of these areas before this definition became official. By this policy, indigenous peoples have become squatters in their ancestral lands.

This shows the basic nature of uplands issues, which are:

- **sustainability**, or the question "What will happen to the forests in the long term?"
- **equitability**, or "How do we provide for the needs of everybody?"
- **productivity**, translated simply as "food and survival"

Both NGOs and government have recognized the need to build NGOs' capabilities to supplement government programs that work in the uplands. The NGOs need to share information, knowledge, technology and success stories. The developing partnership between the government and NGOs also needs nurturing. Hence the need for UNAC.

### What is UNAC?

UNAC is a partnership of institutions collectively working with the common objective of assisting NGOs and local people's organizations (POs) involved in agroforestry, land tenure and marketing in the uplands. Through UNAC, upland NGOs can share their experience and expertise, and enlist support services.

UNAC is **not**: a government committee, a religious or political organization, or a membership organization. Neither is it a formal network, as quick response to the pressing needs was deemed more important than the effort required to create a new formal organization. UNAC is not a source of funds, although it can help in "fund sourcing." "Fund sourcing" means finding institutions that provide financial grants.

UNAC fosters complementation to avoid duplication of effort. For example, while all UNAC member institutions may have their own "information dissemination" functions, UNAC refers requests for information assistance only to members known to have special expertise in that area. This avoids duplication, improves coordination, and encourages each member to develop its expertise while remaining aware of all other activities as well.

## What can UNAC do?

The members of UNAC offer technical expertise on:

- agroforestry technologies
- upland enterprises
- project management
- upland ecology
- marketing
- institution building and development
- forest resource identification and development
- land surveying and registration
- registration of tribal communities
- community organizing
- land tenure options
- reforestation

UNAC provides information and education services by: providing information materials, relevant proceedings, and teaching aids such as manuals, sound/slides, and directories; and by organizing workshops, seminars, and training courses.

UNAC can organize exchange programs, dialogues and policy reviews among government agencies, NGOs and POs, academic institutions, and corporations.

## Why Agroforestry, Land Tenure and Marketing?

These three areas became UNAC's major concerns as a result of a survey of NGOs regarding their needs for implementing their programs. UNAC members see these topics as keys to solving the problems of upland poverty and environmental degradation, and, as listed, they represent the committee members' expertise. UNAC chose these areas as a most effective focus for its limited resources.

## Who does UNAC serve?

UNAC is designed to serve NGOs and people's organizations (POs) working in the uplands. This covers social development foundations, cooperatives, and church-based organizations. UNAC also serves educational institutions.

## Who is involved in UNAC?

The following organizations are on the Committee:

| | |
|---|---|
| **Kalahan Educational Foundation (KEF)** | A people's organization of the Ikalahan tribe in Nueva Vizcaya that aims primarily to educate and help Ikalahan develop their own people and ecosystem. KEF also assists other tribal communities. |
| **Philippine Association for Intercultural Development (PAFID)** | A professional organization working with more than 20 ethno-linguistic groups to secure, defend, and develop their ancestral lands. |
| **Philippine Business for Social Progress (PBSP)** | A social development foundation working with 670 NGOs and POs, including many in the uplands, to transform poverty groups from a state of subsistence to self-reliant owners of productive resources. |
| **Philippine Partnership for Development of Human Resources in Rural Areas** | A broad partnership of NGOs concerned with the social development of depressed rural communities. |
| **Philippine Uplands Resource Center (PURC)** | A consortium of four academic institutions and a government agency that collects and disseminates information on the uplands and strengthens linkages among organizations and individuals. |
| **Structural Alternative Legal Assistance for Grassroots (SALAG)** | An organization of lawyers that provides legal services and education to communities (primarily farmers, fisher folk and indigenous people) for economic, social and political structural change. |
| **University of the Philippines at Los Baños (UPLB)** | A state university dedicated to human resource development in the fields of agriculture, forestry, social development, and related fields through instruction, research, and extension. |

## Problems in Upland Development: The NGO Experiences

A first NGO consultative workshop was organized in April 1990 to address Problems and Issues on Upland Development encountered by NGOs in the field. Problems and issues were identified in what became UNAC's three major areas. The NGOs shared experiences on how they had faced these problems. Here is a summary of the problems they presented.

**Agroforestry**

NGOs identified:

- **lack of knowledge and skills in the technical aspects of agroforestry,** specifically, technical know-how in agroforestry cropping systems, identification of appropriate species, and cultural management practices (see Table 1).

- **need to develop agroforestry-based cottage industries.**

- **difficulties in technology transfer**, especially development of appropriate extension skills for community organizing and grassroots training.

- **lack of financial resources** for technology verification, project planning and implementation, and infrastructure-building. Other needed inputs included planting materials, livestock, and other farm implements.

**Land Tenure**

Upland people require knowledge on how to secure land tenure and the options available to them. Although a number of programs and policies on land tenure exist, many NGOs know little about them. Questions frequently asked involve:

- securing land tenure
- recognizing ancestral domain
- handling cases of conflicting claims to ancestral lands

Coordinated legal assistance in these areas is needed, along with help in how to work through government red tape. In some cases, government agencies have different concepts of land ownership and use.

There is also the issue of individual ownership versus communal ownership. Some tribal communities are familiar only with communal tenure, although some government agencies insist on introducing programs promoting individual ownership.

**Marketing**

Constraints on upland marketing activities include:

- land tenure problems among tribal communities
- insufficient product lines
- inadequate supply of raw materials
- high transportation costs and poor farm-to-market roads
- lack of producers' organizations
- lack of post-harvest facilities and technology

Resulting marketing problems affect all sectors, regions, and production activities. Even on the prosperous island of Luzon, cultural barriers, illiteracy, disorganization, and land-tenure problems restrict NGOs' marketing activities. Market studies to

identify needed upland commodities are scarce. Likewise, no system exists to inform producers about prevailing market prices and conditions.

In marketing their produce, upland communities compete with traders and cartels. NGOs that work with them require capabilities to market test products, including new products such as processed fruits (jam, jellies, marmalade), broom-making, bamboo craft, and vegetable pickling. NGOs outside Manila also need information on funding institutions that can support their marketing programs.

Conflicting national policies on import liberalization and protectionism also present problems. The Department of Agriculture and the Department of Environment and Natural Resources maintain separate lists of regulated or banned materials. Differences in the two lists lead to confusion.

## Results of the First Consultation

After discussing these problems, the NGOs at the consultation discussed o ptions and developed the strategic action agenda shown in Table 1. The actions are categorized into:

1. providing training to NGOs
2. developing materials for NGO use
3. promoting NGO exchange visitation
4. providing consultations
5. organizing dialogues

'NGO resource institution' refers to the UNAC member responsible for coordinating that action agenda item, and to other NGOs which can provide assistance. Below is a summary of the strategic action agenda for each area.

### Agroforestry

To address the needs for technical information and technology transfer, UNAC members will organize training, cross-farm site visits, and consultations, and provide materials. To solve the lack of manpower and other resources needed for agroforestry projects, the NGOs will undertake fund- and materials-sourcing. NGOs will initiate dialogues, consultations and policy reviews to resolve conflicts among government policies.

### Land Tenure

For addressing land tenure problems, the NGOs chose a combination approach to raise awareness of existing land tenure options, actual cases, and the communal or ancestral concept of land ownership. The approach will involve paralegal training, materials development, information dissemination, and lobbying. Legal assistance NGOs will help through consultations and representations before government agencies.

In addition, NGOs will organize dialogues between NGOs and concerned government officials.

### Marketing

Exchange visits, materials development, information dissemination, and training will identify needed products, improve market information, enhance NGOs' competitive stance, and market test products. Marketing promotions will help to sell upland products. If a product does not sell, alternatives will be identified.

Problems related to lack of funds will be addressed by developing the skills of 'resource accessing.'

Advocacy work and NGO representations to the government will address the policy issues of import liberalization that indirectly affect marketing of upland products.

## The UNAC Response

After the first NGO consultative workshop, UNAC drafted its response to the problems identified. It prepared a matrix of areas of assistance and the corresponding lead institution (see Table 2). Because there was no institution to assist non-tribal groups in land tenure issues, the Structural Alternative Legal Assistance for Grassroots (SALAG) was invited to join UNAC.

Each member institution then prepared an institutional action plan. These were presented to the group and discussed. The activities identified were:

1. UPLB's short training courses on agroforestry technology; the technical collaborative activities and the structured visits to UPLB research sites.

2. PhilDHRRA's cross farm visitation programs

3. Training courses on community organizing, marketing assistance, program management, and paralegal training by PBSP, PAFID, SALAG, and PhilDHRRA

4. Distribution of information materials by PURC

**Table 1.** The action agenda proposed by NGOs at the First Consultative Workshop.

| Problem | Action Agenda | | Resource Institutions |
|---|---|---|---|
| 1. NGOs lack the comprehensive knowledge and skills | **A. Provide Training On:** | | |
| | 1. Agroforestry activities | | |
| | 1.1 | Implementing cropping systems | UPLB, SCM |
| | 1.2 | Choosing appropriate species | MFI, MBRLC |
| | 1.3 | Choosing the appropriate cultural management | MBRLC |
| | 1.4 | Performing farm appraisals and developing farm plans | UPLB |
| | 1.5 | Implementing integrated pest management practices | UPLB |
| | 1.6 | Implementing soil and water conservation | UPLB, SWCFI, MBRLC |
| | 1.7 | Plant propagation and seed production | UPLB, MBRLC |
| | 1.8 | Use of organic fertilizers and soil fertility industries | UPLB, MBRLC |
| | 1.9 | Developing agroforestry-based cottage | KEF |
| | 1.10 | Employing post-harvest technologies | KEF |
| | 2. Developing skills needed for effective technology transfer, including: | | |
| | 2.1 | Extension skills for: | |
| | | Community organizing | PBSP, SCMFI, CARE, PhilDHRRA |
| | | Grassroots training | PBSP, MBRLC, UPLB |
| | | Effective communication | PBSP, UPLB |
| | 2.2 | Developing the skills needed in technology verification through on-farm trials | PBSP, UPLB |
| | 3. Securing land tenure | | SALAG |
| | Paralegal training for NGOs | | LRC |
| | 4. Marketing upland products, specifically to develop the NGOs | | |
| | 4.1 | Entrepreneurship | PBSP |
| | 4.2 | Project development | PBSP, PhilDHRRA |

Resource Institutions: CARE = Care Philippines; CRTD = Center for Rural Technology Development; ICAP = Igorot Community Assistance Program; IPC = Institute of Philippine Culture; JVOFI = Jaime V. Ongpin Foundation, Inc.; KEF = Kalahan Educational Foundation, Inc.; LRC = Legal Rights and Natural Resources Center, Inc.; MUCARD = Muslim Christian Agency for Rural Development; MFI = Mag-uugmad Foundation, Inc.; MBRLC = Mindanao Baptist Rural Life Center; PAFID = Philippine Association for Intercultural Development; PANLIPI = Tanggapan Panligal ng Katutubong Pilipino; PBSP = Philippine Business for Social Progress; PhilDHRRA = Philippine Partnership for the Development of Human Resources in the Rural Areas; PLAN = Plan International - Baguio; PURC = Philippine Uplands Resource Center; SALAG = Structural Alternative Legal Assistance for Grassroots, Inc.; SCM/SCMFI = Sta. Cruz Mission, Foundation; SWCFI = Soil and Water Conservation Foundation, Inc. UPLB = University of the Philippines at Los Baños; VICTO = Visayas Cooperative Development Center, Inc.

**Table 1.** Continued.

| Problem | Action Agenda | Resource Institutions |
|---|---|---|
| 1 NGOs lack the comprehensive knowledge and skills | **B. Develop Matcrials on:** | |
| | 1. Agroforestry technologies | PURC, KEF, UPLB, MBRLC, MFI, SCM |
| | 2. Technology transfer | PURC, UPLB, PBSP |
| | 3. Land tenure topics | |
| | 3.1 Land tenure options | PAFID, ICAP, PANLIPI, LRC |
| | 3.2 Migrant titles | PAFID, LRC |
| | 3.3 Communal or ancestral titles | PAFID, LRC |
| | 3.4 Laws pertaining to land tenure | LRC |
| | 3.5 Case studies | PURC, PAFID, IPC |
| | 4. Marketing topics | |
| | 4.1 Market trends | PURC |
| | 4.2 Market opportunities | PURC |
| | 4.3 Product development | |
| | 4.4 Market outlets, distribution channels | PURC, PBSP |
| | 4.5 Donor agencies | PBSP |
| | 4.6 Market studies | PLAN |
| | 4.7 Conducting feasibility studies | PLAN |
| | **C. Promoting NGO Exchange Visitations to Encourage In-Situ Sharing of Experiences among NGOs Involved in:** | |
| | 1. Agroforestry technologies | |
| | 1.1 Cropping systems | MBRLC, KEF, PhilDHRRA |
| | 1.2 Farm development | MBRLC, PhilDHRRA |
| | 1.3 Plant and seed propagation | MBRLC, PhilDHRRA |
| | 1.4 Soil and water conservation practices | PhilDHRRA, MBRLC, MFI |
| | 1.5 Agroforestry-based cottage industries | PhilDHRRA, KEF |
| | 1.6 Post-harvest technologies | PhilDHRRA, KEF |
| | 1.7 Use of organic and soil fertility | PhilDHRRA, UPLB |
| | 2. Agroforestry technology transfer | |
| | 2.1 Employing extension methods on | PhilDHRRA, PBSP |
| | 2.2 Technology verification | UPLB, PBSP |
| | 3. Marketing | |
| | 3.1 Developing product alternatives | |
| | Jams jellies, marmalade | KEF |
| | Broom-making | JVOFI |
| | Bamboo-craft | MUCARD |
| | Vegetable pickling | PBSP-CRTD |

**Table 1.** Continued.

| Problem | Action Agenda | Resource Institutions |
|---|---|---|
| | **D. Providing Counsel to NGOs on Issues of:** | |
| | 1. Agroforestry technologies | |
| | 1.1 Cropping systems | MBRLC, UPLB |
| | 1.2 Plant propagation and seed production | MBRLC, UPLB |
| | 1.3 Choice of species | MBRLC |
| | 1.4 Soil and water conservation practices | MBRLC, MFI, UPLB, PhilDHRRA, SWCFI, PAFID |
| | 1.5 Farm appraisal techniques | MFI, KAPWA, OTRADEV, PLAN, CSG, CARE |
| | 1.6 Agroforestry-based cottage industries | KEF, UPLB |
| | 1.7 Post-harvest technologies | KEF, UPLB |
| | 2. Agroforestry technology transfer | |
| | 2.1 Community organizing | SCMFI, PBSP, PhilDHRRA, CARE |
| | 2.2 Tools and equipment needed for new technologies | UPLB |
| | 2.3 Resolving conflicting approaches to development | PhilDHRRA, PAFID, LRC, KEF, PURC |
| | 3. Land tenure | |
| | 3.1 Cases on land tenure | PAFID, LRC |
| | 3.2 Working through the DENR bureaucracy | PAFID |
| 2. Lack of coordination among NGOs and government, which often results in conflicts | **Organize Dialogues to Clarify:** | |
| | 1. Conflicts between government policies and NGO | PhilDHRRA, PAFID, KEF, LRC, PURC |
| | 2. Taxation | |
| | 3. Land tenure issues | PhilDHRRA, PAFID, LRC |
| | 4. Government policies related to marketing | PhilDHRRA, PBSP |
| 3. Lack of resources for conducting activities | **Develop Information Materials and Provide Assistance on:** | |
| | 1. Fund sourcing | PBSP, PhilDHRRA, VICTO |
| | 2. Materials sourcing | |
| 4. Lack of marketing facilities | **Provide or Organize:** | |
| | 1. Display center | PBSP |
| | 2. Trade fairs | PBSP |
| | 3. Market encounters | PBSP |
| 5. Insurgency and militarization | **Advocating** | |
| | 1. Land tenure issues | PhilDHRRA, LRC |
| | 2. Declaration of peace zones | |

**Table 2.** Matrix of lead institutions which will provide assistance to upland NGOs in various aspects of upland development.

| | Agroforestry Technology | Land Tenure | | Community Organizing | Marketing | Cross Visits | Information Service | Advocacy Dialogues | Resource Accessing |
|---|---|---|---|---|---|---|---|---|---|
| | | Tribals | Non-Tribals | | | | | | |
| Lead institution | UPLB | PAFID | SALAG | PBSP (CRTD) | PBSP (SDRC) | Phil DHRRA | PURC | UNAC | PBSP (SDRC) (RDMG) |
| Support institution | PAFID KEF | LRC SALAG | PAFID | Phil DHRRA | KEF | | | Phil DHRRA | Phil DHRRA |

CRTD - Center for Rural Technology Development
SDRC - Social Development Research Center
RDMG - Resource Development Management Group

## Progress After One Year

1. UPLB organized the UPLB Program for Upland NGOs and conducted five short training courses on:

   - o seed technology and nursery management
   - o integrated pest management
   - o agroforestry production and post-production systems
   - o soil and water conservation and management
   - o technology verification through on-farm trials

2. PBSP organized the Upland NGO Development Assistance Program and offered training courses on community organizing, and agroforestry enterprise development.

3. PhilDHRRA funded 20 NGOs to visit 6 sites.

4. PURC distributed materials and profiled 11 more NGOs that can participate in UNAC activities.

5. UNAC conducted a survey and organized a policy workshop on the government's Contract Reforestation Program.

## Conclusion

Although it is too early to assess UNAC's impact for the upland NGO community, I will nonetheless indicate a few strengths in the approach:

1. The group's composition promotes a multi-disciplinary approach to every activity. Every UNAC activity develops ways to put social development and agrotechnical practitioners together in solving problems.

2. Each NGO's area expertise is enhanced by the strategy of comparative advantage and complementarity.

3. Duplication is greatly reduced.

The process of deliberation and discussion of each issue is time consuming, but is compensated by the achievement of consensus and greater prospects for successful projects.

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# *INTERNATIONAL VIEWPOINTS*

# NGOs and Agroforestry in Asia-Pacific

*Chun K. Lai*

Over centuries, farmers in the Asia-Pacific region have developed sustainable agroforestry systems that produce agricultural crops, trees, livestock, and fish. These systems have evolved with changing agroecological, socioeconomic, and demographic conditions. Some traditional agroforestry practices have been weakened by these same dynamic factors. Because of the critical problems faced by countries in the region -- rural poverty, growing populations, land-use conflicts, deforestation, and soil and watershed degradation -- agroforestry research and development is receiving increased attention.

## The Asia-Pacific Agroforestry Network

The Project on Agroforestry Research and Development in the Asia and Pacific Region is intended to build up an Asia-Pacific Agroforestry Network (APAN) of lead institutions and individuals active in agroforestry. The Network will support collaboration by appropriate government agencies, universities, NGOs, and grassroots organizations on action research, training, and information-sharing activities supported.

APAN activities will emphasize "technical cooperation among developing countries" (TCDC), and the sharing of expertise, resources, and information among countries. Through four sets of activities, APAN will set out to improve:

- o coordination for agroforestry research and development
- o information sharing
- o agroforestry training
- o field demonstrations and on-farm trials

The APAN Secretariat is located at the Forest Research and Development Centre in Bogor, Indonesia. Inaugurated in early May, 1991, the Secretariat helps to coordinate network activities in: Bangladesh, India, Indonesia, Laos, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, and Vietnam.

The Food and Agriculture Organization of the United Nations (FAO) is executing the 20-month initial phase of the Project, supported by the Government of Japan and contributions from the Government of Indonesia. In this phase, the Project is identifying national focal points and individuals who can contribute to and benefit from APAN activities. The Secretariat seeks NGO participation.

Because of the diversity of agroecological zones, cultures, and languages in the Region, most activities will proceed through two sub-regional networks: South Asia (including Bangladesh, India, Nepal, Pakistan, and Sri Lanka) and Southeast Asia (Indonesia, Laos, Philippines, Thailand, and Vietnam).

## Role of NGOs in Promoting Agroforestry

In visits to the 10 participating countries, Project staff have assessed the role of NGOs in promoting agroforestry. Although it is difficult to generalize trends across the Asia and the Pacific, I offer below four sets of observations for consideration.

1. **The level of NGO involvement in agroforestry varies widely across the region.**

   - o In Laos and Vietnam, national NGOs are just emerging.
   - o By contrast, there is a high level of NGO work in social forestry and agroforestry in India (particularly in wasteland development) and the Philippines (particularly in upland development).
   - o In Thailand and Indonesia, environmental advocacy NGOs are very active.
   - o In countries such as Bangladesh, NGOs are very successful in sectors of health, family planning, education, credit/savings, and income generation. However, they still face obstacles entering the forestry sector, mainly due to the reluctance of forest departments to recognize them as legitimate partners.

2. **NGOs have made and are making significant contributions in research that can benefit both the regional MPTS Research Network and national agroforestry programs.**

   - o Research by NGOs generally emphasizes: (1) an action research approach ("learn by doing"); (2) participatory, on-farm experimentation; and (3) process documentation.
   - o The NGO approach has some comparative advantages over the traditional on-station research approach. The two approaches can complement each other, if there is good coordination.
   - o Although NGOs are often criticized for doing "soft" research (as opposed to "hard" biological research with replications and control plots), there are examples where NGOs have conducted effective technical research that has yielded usable results. For example, World Neighbors and the Nepal Agroforestry Foundation have been carrying out trials on psyllid-resistant *Leucaena* species and hybrids, along with other fodder species suitable for Nepalese farmers' needs. BAIF Research Development Foundation has been involved for over 10 years with testing and extending various multipurpose trees to farmers in India.

3. **NGOs in the Asia-Pacific region collaborate on at least three levels:**

**International**

- o Regional NGO associations (for example, the Asian Forum of Environmental Journalists)

- o NGO involvement in regional networks such as FAO's Rural Wood Energy Development Programme, APAN, and the MPTS Research Network

- o NGO participation in species trials of the Nitrogen Fixing Tree Association

- o Collaboration between national NGOs and international NGOs, such as Save the Children, World Neighbors and CARE

**National**

- o Collaboration among NGOs -- for example, the Association of Development Agencies in Bangladesh (ADAB), an umbrella organization for development NGOs that has an Environment and Social Forestry Cell; and NGO-CORD in Thailand, a forum for grassroots NGOs with over 200 member NGOs.

- o NGO-government collaboration -- examples of this important mode are emerging in several countries. In the Philippines, the Upland Development Working Group and the Upland NGO Assistance Committee effectively combine government, university, and NGO participation. In Indonesia, Bina Swadaya, a national NGO, works with Perum Perhutani, a state forestry corporation, to provide community organization training to forestry staff in the Java Social Forestry Program.

**Grassroots**

- o NGOs work directly with different types of local organizations, including: farmer groups, cooperatives, local committees, women groups, youth groups, and local government.

**4. NGO-government collaboration should be promoted and strengthened wherever and whenever possible.**

As noted, this type of collaboration can be very difficult to achieve in social forestry and agroforestry activities. However, it is the key for making improvements in the welfare of marginal farmers most widespread. How to increase NGO-government collaboration remains one of our biggest challenges, and a crucial area of discussion for this workshop.

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# Technical Skills for Successful NGO Programs

*Jim Chamberlain*

## Introduction

Nitrogen-fixing trees (NFTs) have the unique ability to convert atmospheric nitrogen found in the soil to a form usable by the tree and nearby crops. The Nitrogen Fixing Tree Association (NFTA), an international NGO, promotes the use of these trees through research, outreach, and improved communications to help meet the wood and forest-product needs of people in developing countries. This includes providing technical assistance and high-quality germplasm of NFTs to improve the tree-planting programs of NGOs.

Effective NGOs can use the advantages of their flexibility and community orientation to multiply the benefits of tree-planting programs for rural people. But without simple technical forestry skills, even the most socially effective NGO will fall short of its planting goals. Seed germination will be lower than expected, seedling mortality will be high, and tree growth will fail to meet farmers' expectations. Failure to consider technical capability can thus dampen farmers' enthusiasm and participation. This paper describes a few of the technical skills needed for effective tree-planting programs.

## Identifying Niches for Trees

Rural landscapes contain many possible sites for planting fast-growing trees. The appropriate niche (place) for trees depends greatly on the desired product, farmers' preference, and availability and tenure of land. Where trees are planted also depends on whether individual farmers or communities will do the planting and tree care. Community tree-planting activities can be done on land mutually agreed upon by the group. It may be done on an individual's land, but only if similar activities take place with each member of the group.

Local preferences for tree products will also determine where and what trees are planted. For example, trees grown to provide protein for livestock feed may be planted in small blocks as 'protein banks.' The local NGO may work with farmers to select land that can remain planted to trees and be protected from uncontrolled browse. Fodder banks may be planted directly in pastures or near where animals are tethered.

Farmers often like to plant trees along farm borders as hedgerows, living fences, and windbreaks that provide various products. Hedgerows can provide fodder and fuelwood, and help stabilize soils. Where managed for poles, living fences can provide support for vine crops (for example, vanilla and black pepper) and produce wood products for sale. Trees planted as windbreaks also reduce wind erosion.

Other places where farmers might like to plant trees include: around houses, small plantations on communal land, and in crop fields. Trees around

houses usually protect the home from extreme weather and provide food for the household. Trees in small plantations can provide fuelwood, marketable products (such as timber), and improve soil fertility during fallow periods. NFTs planted among plantations of high-value timber species can improve timber yields and provide short-term benefits.

## Species Selection

Like all plants, trees have their ecological limitations. Introducing a tree species to an ecosystem drastically different from its native range can doom a tree-planting program. A tree species that naturally flourishes in areas with high rainfall and low elevation is not likely to thrive under arid, high-altitude conditions. One NGO received and planted seed of *Calliandra calothyrsus*, and could not understand why the trees failed to grow. On examination, a trained technician could see that the species was inappropriate for the site conditions. *Calliandra* prefers sites with more than 1,200 mm of annual rainfall; the NGO's planting site received less than 700mm of rain each year.

On the other hand, exotic species planted under new conditions that are less severe than their native home may become weeds. There are many examples of introduced species that have overwhelmed native plants and irreversibly changed the natural environment. In many parts of Asia, Leucaena was introduced as a "miracle tree," and many communities invested in the species. It reproduced so well that in many areas it replaced native vegetation. In the past five years, Leucaena plantations in the region have been severely defoliated by a pest, the Leucaena psyllid (*Heteropsylla cubana*) that does little harm to *Leucaena* trees in their native range.

Sometimes, NGOs decide from their reading that a species is the "best one" for them. They make this decision without investigating the species' ability to adapt to the area. For example, a recent document on Tagasaste (*Chamaecytisus palmensis*), distributed to NFTA associates around the world, generated tremendous interest. Requests for seed more than doubled. But none of the NGOs requesting seed had done any testing to determine if the species were adapted to the local climate.

A common belief among NGOs and forestry institutes is that introduced species are superior to trees that grow locally. Often, exotic species that have been selected and improved may indeed grow faster and produce more products than native species. But fast-growing exotic species may also consume more water than slower growing native trees, a factor which can make the introduced tree unpopular with farmers who grow them near other crops. Native or naturalized tree species have adapted to local climatic conditions, while exotic trees are not necessarily so acclimated. Native or naturalized species also are more likely to survive droughts and other environmental stresses.

## Seed Handling, Collection and Storage

NGOs sometimes complain of poor germination of NFT seed. The most common criticism is that the seed is old and no longer viable. An NGO in Nepal experienced terrible germination from seed received from NFTA and requested new, improved seed. But when trained staff tested the original batch of seeds, they found that viability was high. Proper handling and treatment of seeds before sowing are therefore essential.

Many NFTs have seed with hard impenetrable coats that prevent water absorption, and germination will be poor unless the outer layer is cracked or scarified. Scientists have developed recommended methods of pretreatment for most species. Some, like pigeon pea (*Cajanus cajan*), need no pretreatment. Others, for example *Albizia lebbek*, should have boiling water poured over the seed for better germination. Others, like *Acacia acuminata* and *Acacia nilotica*, germinate much better when the seed coat is scratched or nicked.

Seed viability decreases over time. Seed from some tree species, such as *Parkia javanica*, lose viability within a few weeks of maturing. Others remain good for several years and require no special care. To use tree seed that quickly loses viability, an NGO must carefully plan seed collection and sowing in the nursery.

Seeds should be stored in an air-tight container and kept in a cool, dry, dark place. All seeds, even properly stored ones, should be tested for germination at least once a year. Testing germination is simple and requires no special equipment. But knowing the germination rate of a batch of seeds before distributing them to farmers can save a tree-planting program from shattered expectations and disaster.

## Nursery Techniques

Simple nursery techniques can improve the survival of seedlings. Seeds of leguminous NFTs should be inoculated with the microorganisms, rhizobium, that "fix" nitrogen. Without rhizobium, NFTs will not "fix" nitrogen and seedling growth will be less than it could be.

In some cases, the rhizobium may already be in the soil under older stands of the desired species. For example, if an NGO wants to plant Leucaena, then soils from beneath old stands of Leucaena can be used as potting mixture -- the rhizobium is likely to be present. However, if the NFT that the NGO plans to grow is not already growing locally, the rhizobium is probably absent. In that case, nursery managers should obtain inoculant from a production center.

Another technique that affects project success is proper watering. Managers of a community nursery in Indonesia could not understand why seedlings were dying. On examination, it was clear that the seedlings had received too much water. Excessive watering will waterlog roots and kill seedlings. Too much water can also produce mold on seeds and roots. On the other hand, seedlings will obviously die if they receive too little water.

Root pruning is another simple nursery technique that can improve survival. Seedlings grown in plastic bags should be moved regularly to prevent roots from penetrating the ground. If roots are allowed to penetrate through the plastic into the ground, the shock to the plant when the seedling is transported can kill the plants. Roots of seedlings grown in raised beds (soil mounds) should be trimmed for the same reason.

## Planting and Management

NGOs need other technical skills when seedlings are ready to plant. The planting site must be properly prepared; holes must be big enough, and the soil around each hole must be cultivated to allow water and root penetration.

Trees will provide more of the desired product if properly managed. Excessive cutting can kill the trees, while cutting too infrequently may result in an unmanageable tree. An NGO in southern India planted Calliandra to hedgerows that were cut at less than 7 cm above the ground -- far too short to be effective. The recommended height for cutting hedgerows for maximum production of leaves and wood is 50 cm.

## Training for NGOs

We know that tree-planting projects must include effective organization and participation of farmers to succeed. Local NGOs are well-placed to foster this organization and involvement. In addition, however, NGOs require fundamental technical skills in forestry. Unfortunately, there are few mechanisms whereby NGOs can get basic forestry skills. National forestry organizations are limited by lack of resources, and seldom have a clear mandate to work with NGOs.

Contact with international technical assistance groups like NFTA is limited by delays in correspondence. The time it takes to send queries to such organizations and receive a response can thwart the desire to solve technical problems. Transfer of technical skills by mail is also restricted by the interpretation of language and the description of problems. Often queries do not clearly define the technical problem, or what is perceived as a problem may in fact be a symptom of another problem.

The need to improve the technical skills of NGOs therefore remains. National or regional (within-country) training facilities are best placed to enhance NGOs' technical capacities. An initial in-service training could be followed later by an abbreviated "refresher" course. Training facilities must have a full complement of resource materials and a staff that can use and share this information.

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# Trees for the Tiller, Work for the NGOs?
## A Critical Look at Community Tree Nurseries

*Remko Vonk*

### Introduction

This paper is a reflection on aspects of my work in agroforestry[1] in the context of NGOs and rural development. It is both a critical look at my experience and an attempt to come up with new approaches. Its major conclusions are:

- Although the term 'agroforestry' describes a technology, it is often used to describe a process for achieving appropriate rural development.
- NGO development and agroforestry development have too frequently been grouped together without distinction, resulting in confusion of development objectives.
- Confusion about what constitutes agroforestry, NGO development (apart from agroforestry development), and the role of tree nurseries has resulted in inappropriate approaches to agroforestry.
- Alternative tree establishment methods need to be explored to increase projects' cost-effectiveness and sustainability.

The paper will briefly describe the emergence of agroforestry, the emergence of NGOs, and the role of NGOs in agroforestry. It will critically analyze assumptions that NGOs make about agroforestry and NGO approaches to agroforestry projects.

### In the Beginning

Farmers have always managed trees. Farmers need trees for fodder, shelter, firewood, medicine, fiber, and other products. In some farming systems, trees are purposefully propagated by transplanting wildlings, growing seedlings, planting cuttings, or by direct seeding. In other farming systems, farmers suffice by managing trees that have generated naturally. Farmers need to cut (or burn) trees, most often to clear land for growing agricultural crops or grazing livestock, but also because they need wood. In many cases, many more trees are cut and burned than are planted. This results in chronic wood shortages and environmental degradation by removal of the tree cover.

This process dramatically affects resource-poor farmers in developing countries, who depend more than anyone else on tree cover and suffer by its disappearance. Since 1980, the number of development programs aimed at improving these farmers' access to trees has multiplied.

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[1]*For this paper, 'agroforestry' encompasses all forms of forestry promoted by NGOs to farmers, including social forestry, on-farm forestry, and farm forestry.*

Traditionally, government forest departments were responsible for large-scale tree planting. These forest departments are generally neither well-equipped nor motivated to address smallholders' need for trees, however. They are not equipped because they are accustomed to dealing with large forest areas and tree monocultures. They are not motivated because small-scale agroforestry provides no government revenue.

Forest departments, which are heavily male-dominated, have been oriented to production forests, focussing on trees with large diameters. They were thus unprepared to face a new reality that development agencies wanted to address: women who cut small-diameter trees for firewood from their own farms.

## NGOs Enter the Picture

Rural development NGOs presented themselves to funding agencies as alternatives to poorly-adapted forest departments. The NGOs' orientation to human needs, and their preference to deal with resource-poor farmers within their constraints made them well-suited to implement the new development programs. They approached the new scope of work with great enthusiasm. Over the past 10 years, thousands of community-based groups, national NGOs, and international NGOs entered the arena of agroforestry development.

NGOs' relative advantages in this new field were documented in *Farm and Community Forestry* (Foley and Barnard 1984). The authors mention the following reasons for voluntary and non-governmental organizations' involvement in agroforestry:

1. Government agencies are completely unsuited to running small-scale tree growing programs.

2. NGOs have strength in small-scale endeavors, flexibility, informality, and economical use of resources.

3. NGOs can bridge the gap between local communities and forest services. They can act as an important communication channel, both upwards and downwards in the political hierarchy, and may help to institutionalize community forestry.

4. NGOs can be extremely effective in extension activities of farm and community forestry programs. They are not characterized by "the arrogant use of power by minor bureaucrats." NGOs give farmers a voice, and bypass uncooperative local officials.

5. NGO-managed community forestry projects have high seedling survival rates.

6. NGOs can mobilize resources quickly.

7. NGOs frequently enjoy the trust of the people.

8. NGOs have the ability to gain participation by women and children.

9. NGOs can make people's concerns about trees known to the authorities, as the Chipko movement did in India.

Many of these observations can also be applied to disciplines outside forestry. In other words, NGOs applied their relative advantages to a new field.

Agroforestry's emergence in the early 1980's corresponded with a growing awareness among development agencies that more participatory approaches were needed. To a degree, both agroforestry and participatory community development were reactions against what development specialists considered to be inappropriate approaches. The two -- one a farming system of production and the other an approach to development -- were often merged into participatory agroforestry development. As a result, agroforestry came to be seen as a community development approach, rather than as a technology. This impression was fueled by the International Council for Research in Agroforestry (ICRAF), among others. ICRAF decided to assign greater priority to the development of its Diagnosis and ] Design (D&D) methodology for agroforestry than to technical research on agroforestry as a technology.

The idea of agroforestry as an approach combined the technology's introduction with a sound approach to rural development. Foley and Barnard's rationale for NGO involvement in forestry clearly identifies NGOs' relative strengths in the process of rural development, rather than in forestry itself. Actually, few NGOs had any technical expertise in forestry or agroforestry. NGOs became involved despite their lack of knowledge about these technical areas.

While agroforestry and participatory community development were attracting attention in the 1980's, support for NGO development itself was also growing. Frustrated by working with governments, donor agencies were increasingly willing to promote development and professionalization of local organizations. Working through NGOs proved to be a viable alternative to bilateral assistance. Some international NGOs switched from implementing projects to co-financing national or local NGOs in developing countries. Again, the perceived strengths of NGOs are their:

- flexibility
- grass roots orientation
- responsiveness
- ability to organization local people
- representation of local people

Given these strengths, support for agroforestry efforts through NGOs addressed three different donor agendas:

- promotion of agroforestry
- support and development of NGOs
- general community organization and development

## The Tree Nursery

NGOs most frequently use projects as vehicles to transfer resources to beneficiaries. NGO agroforestry projects often aim to increase adoption of agroforestry technologies by a group of farmers. The most common and most visible intervention used by the NGOs in agroforestry projects is the community tree nursery. The community nursery is remarkably uniform among projects. The capacity to produce tree seedlings ranges from 1,000 to 30,000 seedlings per year, with an average of around 4,000 seedlings per year. Seedlings are usually watered using watering cans, and commonly raised in plastic bags. Members of the community provide labor on a rotational basis. A community's motivation for working in nurseries can be any combination of desire for income (from sale of seedlings) and a felt need for trees.

Proponents often establish the effectiveness of community nurseries by comparing them to the large-scale, centralized nurseries of forest departments. By contrast, community nurseries show greater decentralization, variety of species, sustainability, community participation, and result in planting of trees by small farmers. In addition, tree nurseries allow for accountability (seedlings are easy to count, inputs can be traced), seedlings provide a demonstrable product, and the nursery is a place where the community comes together, thus facilitating extension efforts. A well-run nursery has become a hallmark of a proper NGO project. As a small-scale, community-based and participatory activity, it can be sustainable. The community nursery symbolizes what NGOs stand for, and a good one reflects well on the ability of the managing NGO. At first glance, community nurseries meet the three agendas mentioned above.

I should add that nurseries are in fact the traditional way of raising trees. Many NGOs relied on enlightened, but traditionally trained foresters for technical support for their projects.

## CARE's Experience

After 17 years of supporting community nurseries, CARE has learned both the advantages and disadvantages of the community nursery as a means to promote agroforestry. CARE now supports approximately 6,000 nurseries. In these nurseries, about 60,000 women, men and children work to produce about 27 million seedlings per year. This is an enormous level of effort. Our experience is showing, though, that nurseries are not always the best way to achieve agroforestry objectives. The following have been identified as disadvantages of community nurseries:

- Nurseries are labor intensive.
- Nurseries require a level of organization and management that is not always available.
- There often is a discrepancy between labor provided by an individual and benefits received from the nursery. Often powerful community members take advantage of the seedling supply without working in the nursery themselves.

- Nurseries often depend on some external input (even if only the plastic bags) that may not be available after CARE withdraws its support.

- Transport from the nursery to the planting site is costly and can damage the seedlings.

- Timing nursery operations is difficult. Seedlings may be either too immature or too big for outplanting when needed at the start of the rains.

- Communities often view nurseries as a means for making money, which means selling the seedlings. The CARE project, on the other hand, intends the nursery as a way to provide access to seedlings, which means distribution of seedlings among community members. These conflicting agendas can also affect the choice of species. Community members often favor marketable species, which are not always the best agroforestry species.

- Nurseries can absorb the project's energy and focus. In general, projects are not intended to result in a certain number of self-sustaining nurseries, but to improve the natural resource base of the farmers.

For some CARE projects, as for projects of other NGOs, running nurseries has become a goal in itself. Community nurseries often require more support and more time to become self-sustaining than anticipated at the start. They often need continued financial assistance. As a result, the agroforestry objectives of the projects recede to the background. Within the project, people start to assume that farmers need only seedlings, and that these seedlings must be raised in nurseries. However, when investigating the potential for agroforestry, and all the options for getting the right trees established in the most cost-effective way, clearly nursery-raised stock is only one of the many options. Other ways are:

- direct seedling
- planting cuttings
- root cuttings
- protecting natural regeneration
- transplanting wildlings

These alternatives do not often get the attention they deserve. Their advantages and disadvantages are generally the reverse of the advantages and disadvantages of tree nurseries. These methods tend to be based on the individual farm family, not group-based. They tend to reduce extension workers' control over the product, but they increase farmers' control. And they are harder to account for. An important difference is that the establishment cost per tree is much lower for these alternatives. There are many implications for agroforestry projects of a shift from community tree nurseries to on-farm tree propagation:

- Extension staff can focus their attention on more aspects of agroforestry besides tree propagation.

- The tree species choice becomes limited to those trees that do not need the special protection of a nursery.

- Extension workers need to find another venue where farmers come together. An obvious alternative is the farm of an agroforestry practitioner.

- More time can be spent on identifying where trees are planted, and for what purpose.

In West Africa, a reassessment of tree establishment methods has resulted in a definite shift from seedling-grown stock to management of natural regeneration. The lower labor investment combined with higher rates of success show this is a viable option for drier climates. A problem that CARE is facing is the difficulty of accounting for the trees managed through natural regeneration. The trees are already growing, so their presence is not a direct result of a project intervention. Creative new ways of "tree accounting" are being explored. Other issues related to natural regeneration of trees are (from Sumberg 1990):

- Which fields have potential for natural regeneration?

- What factors affect the potential for natural regeneration (historical woody fora, soil characteristics, rainfall, agricultural practices -- including use of animal traction and frequency and length of fallow, incidence and intensity of fire, livestock grazing pressure and firewood extraction)?

- Which tree species are good for natural regeneration?

- What is the optimum tree-spacing density?

Extension workers have the exciting option of involving farmers in the search for answers to these questions. From a farmer perspective, the most obvious question is: What is the expected time frame for, and magnitude of, these potential benefits? In other words, what will motivate an individual to invest time and effort in managing natural regeneration?

In higher rainfall areas, direct seeding and planting cuttings (vegetative propagation) are becoming more popular. In particular, growers are sowing more densely-seeded hedgerows for control of soil erosion. In these, tree densities exceed 30 trees per meter, and goals are expressed in terms of meters of hedgerow, rather than numbers of trees established. In 1991, CARE established 856 miles (about 1,370 km) of contour hedgerows.

## Conclusions

Development organizations have identified NGOs as viable mechanisms for promoting on-farm tree planting. NGOs' grass roots orientation, flexibility, and responsiveness relate well to the need for locally-based approaches to promote agroforestry. In their response to the need for on-farm tree planting, NGOs have devoted perhaps too much energy to tree nurseries. While nurseries serve the needs for planting stock and local community development, they have diverted attention away from individual farmers and their need to become self-sufficient tree farmers.

To refocus their efforts on the ultimate goal of agroforestry development, NGOs should compare the advantages and disadvantages of community nurseries with those of other propagation techniques. What is most important is that farmers have access to trees in a sustainable farming system, not the existence of thousands of community tree nurseries. In the end, an agroforestry development project's most sustainable and productive results are farmers who know how to propagate trees on their own farms.

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# Information for Community Forestry Extension

*Cor Veer*

Energy and forestry institutions from 11 Asian countries participate in the FAO Regional Wood Energy Development Programme (RWEDP). Activities include documentation and dissemination of information, and training and assistance in methods for gathering, interpreting, and processing information. This paper reviews this experience and presents an idea for developing a community forestry "knowledgebase." The paper seeks to assess the relevance of such an effort for field workers in community forestry extension, and elicit suggestions on how this type of information support could be improved. The paper also explores possibilities and constraints for collaboration with international agencies.

## Documenting and Disseminating Information

When RWEDP started in 1985, it was felt that there was a great need to gather documents on experiences in community forestry and make these available for international exchange. At the national and international levels, institutions sent us documents and publications, and workshops were organized to bring experts together. This led to more than 50 RWEDP publications covering, in addition to social forestry, wood energy conversion and utilization.

During the same period, other national and international organizations felt the same need: the Oversease Development Institute's Social Forestry Network Papers, the F/FRED Project, IDRC, FAO's Forests, Trees and People Programme, the FAO-Regional Office for Asia and the Pacific, the BOS Foundation Information Service, and other institutions like the International Center for Research on Agroforestry and the International Center for Integrated Mountain Development, all provide documented information on request.

National institutions are also active in some countries; for example, the Upland Resource Center in the Philippines, and the Society for the Promotion of Wastelands Development in India.

Reading only the newsletters of these projects and institutions (the appendix lists some of these) could take up most of a community forester's day. So it seems that we have moved in a relatively short time from scarcity to abundance . . . at least in terms of numbers of titles.

Judging from the requests for information that we regularly receive at RWEDP (about 50-100 requests monthly; on the average, 4 publications per request), people working in community forestry and related activities also need information. These needs are presently met in a fairly restricted manner: of the 3,000 publications in the RWEDP documentation center, only about 90 titles are available for dissemination, one third of which are RWEDP project publications.

About 100 short papers are also available for trainers in community forestry (see Appendix in *Syllabi and Teach Materials for Courses in Community Forestry*, 1990, by FAO-FTPP; copies available on request from FAO-RWEDP).

It will be rather difficult to make copies of more titles available for dissemination, for reasons of copyrights, logistics, and finances. Most likely, organizations in a similar position face the same constraints. In view of this rapid growth of the literature and needs for it, as well as the availability of micro-computers to an increasing number of potential users of such information, a more sophisticated mode of information dissemination may be required. What follows is an example of a more effective way of information dissemination developed for small enterprise development.

## Towards a Community Forestry Knowledgebase?

The Harvard Institute for International Development has worked on a project to support institutions serving small and micro-enterprises in developing countries.[1] One of the activities has been to develop a "knowledgebase" for small enterprise development. As the structure of the almost 1,000 records in their database demonstrates, such information goes well beyond what we usually find in bibliographic databases (Figure 1).

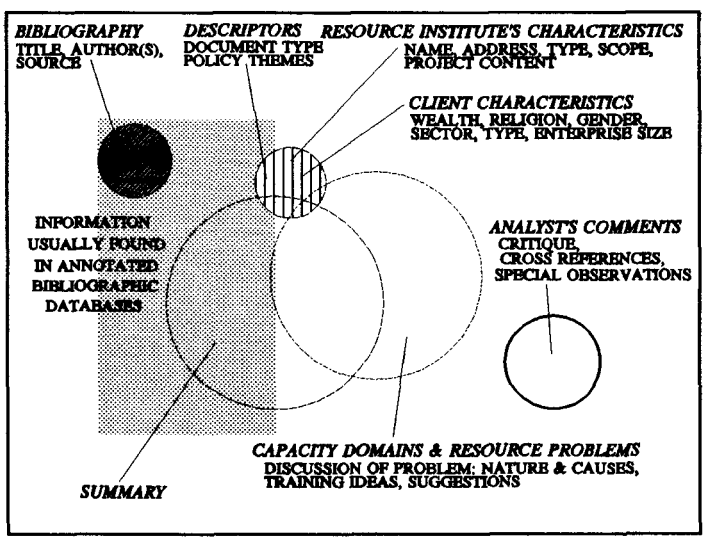


**Figure 1.** The structure of records in AskARIES, with each component shown as a circle in relation to information commonly found in annotated bibliographies.

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[1]*Harvard Institute for International Development (1989),* The AskARIES Knowledgebase User's Guide and Notebook II™ Primer*; Kumarian Press, Inc. 630 Oakwood Avenue, Suite 119, West Hartford, Connecticut 06110-1505, USA. See also* Seeking solutions; Framework and Cases for Small Enterprise Development Programs *(1989),.ed. by C.K. Mann, M.S. Grindle and P. Shipton; and* Case Leader's Guide, *both from Kumarian Press.*

### AskARIES Record Structure

The way that information "outside the grey rectangle" has been structured is what makes this database particularly valuable for people working in small enterprise development. Many of their categories -- types of documents, resource institutes, and clients -- could be readily adapted for community forestry extension. Other categories, such as policy themes, and particularly the analysis of key problems and development strategies, would require much more thought and active collaboration by international and national agencies in community forestry extension.

The information about "analysis of key problems" has been structured in AskARIES through nine three-layered categories, leading from the general to more specific. The most general categories distinguish between strategic, technical, administrative, and communications problems. At the next level appear "recurrent problem categories," and subcategories that present project management activities and issues (Figure 2).

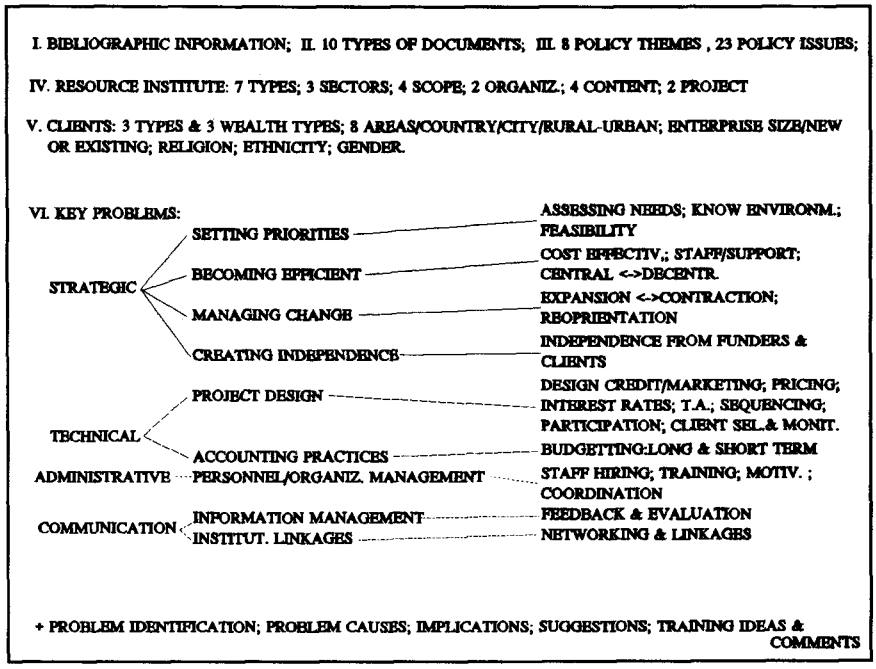


**Figure 2.** Main categories in AskARIES, with three-layered structure illustrated for 'key problems' (category VI).

### AskARIES Categories

These general principles could be maintained for community forestry extension, but obviously much work remains to devise a set of categories, or rather concepts, that would be useful. RWEDP welcomes feedback on the need for such an exercise and if you could help. If the feedback, including forms returned by participants at this workshop, indicates a need and sufficient interest, a provisional set of community forestry categories and titles of publications to be included in a knowledgebase could be circulated among interested NGOs and others very soon.

Such an attempt could go a long way to make documented information accessible in a meaningful way t\o community foresters and their trainers. Still, it does not really help in gathering, interpreting, and processing meaningful information for actual project and program planning, implementation, monitoring and evaluation.

## Information for Project Planning and Implementation

With FAO's Forests, Trees and People Programme, RWEDP supported an international training in Rapid Rural Appraisal (RRA) for community forestry and wood energy development. The workshop was held at Khon Kaen University in Northeast Thailand, April-May 1990. The workshop report, available from RWEDP or Winrock International, provides an overview of the contents and methods of the six-week training course. RWEDP Field Document 26, *Wood Fuel Flows: Rapid Rural Appraisal in Four Asian Countries* (1991), gives the results of the hands-on training and application of the RRA approach to the study of wood fuel flows.

The training team from Khon Kaen University is now preparing a set of RRA training material for community forestry, expected to become available in late 1992.

A variety of computer-assisted tools for planning and designing community (agro)forestry activities are becoming available. These include the Multipurpose Tree and Shrub Database, developed and distributed by the International Council for Research on Agroforestry, which contains indexed records of 1,100 species.[2]

Microcomputer-based geographic information systems comprise another set of tools for planning community forestry projects.

We at RWEDP are most interested to learn from experiences in using such tools in planning and implementing community forestry projects, and invite interested parties to contact us for further information.

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[2]*Contact the MPTS Database Manager, ICRAF, P.O. Box 30677, Nairobi, Kenya. For some organizations in developing countries, the package is sold for US$120; for others, the price is US$250.*

## Appendix: Selected Newsletters

ESCAP Environment News
Environmental Co-ordinating Unit
United Nations Building
Rajadamnern Avenue
Bangkok 10200, THAILAND

Rural Development
FAO/ESH
Via delle Terme di Caracalla
00100 Rome, ITALY

NGO Networker
World Resources Institute
1709 New York Ave., NW
Washington, D.C. 20006
U.S.A.

Networker
Centre for Women and Development
P.O. Box 3637
Kamaladi
Kathmandu, NEPAL

Worldwide News
World Wide
1250 24th Street, NW
Fourth Floor
Washington, D.C. 20037
U.S.A.

AG-Sieve
International AG-Sieve
Rodale Institute
222 Main Street
Emmaus, PA 18098 U.S.A.

The Sustainable Agriculture Newsletter
CUSO
17 Phaholyothin Golf Village
Phaholyothin Road, Bangkhen
Bangkok 10900, THAILAND

ILEIA Newsletter
ILEIA
P.O. Box 64
3830 AB Leusden
THE NETHERLANDS

The Small Farm Newsletter
CUSO
17 Phaholyothin Golf Village
Phaholyothin Road, Bangkhen
Bangkok 10900, THAILAND

ACIAR Forestry Newsletter
GPO Box 1571
Canberra, ACT, 2601
AUSTRALIA

Mycorrhiza News
Mycorrhiza Information Centre
Tata Energy Research Institute
102, Jor Bagh
New Delhi 110 003, INDIA

Sylvanet
International Programs
College of Forest Resources
Box 8007
North Carolina State University
Raleigh, NC 27695-8007
U.S.A.

Farm Forestry News
Winrock International
1611 N. Kent Street
Suite 600
Arlington, VA 22209, U.S.A.

Small-Scale Forestry
Department of Forestry Extension
Swedish University of Agricultural Sciences
S-770 73, Garpenberg
SWEDEN

ISTF News
International Society of Tropical Foresters
5400 Grosvenor Lane
Bethesda, MD20814, U.S.A.

AIFM Insight
ASEAN Institute of Forest Management
Suite 903
IBG Plaza, 6 Jalan Kampar
50400, Kuala Lumpur
MALAYSIA

CD Codel News
Codel, Inc.
475 Riverside Drive, Room 1842 New York, NY 10115
U.S.A.

Asian-Pacific Community Forestry Newsletter
Regional Community Forestry Training Center
c/o Faculty of Forestry
Kasetsart University
Bangkok 10900, THAILAND

Agroforestry Today
ICRAF
P.O. Box 30677
Nairobi, KENYA

Wastelands News
Society for Promotion of Wastelands Development
Shriram Bharatiya Kala Kendra
1, Copernicus Marg
New Delhi 110 001, INDIA

Ethiopian Soil Conservation News
Community Forestry & Soil Conservation Development Department
Ministry of Agriculture
Addis Ababa, ETHIOPIA

Forests, Trees and People Newsletter
IRDC
Swedish University of Agricultural Sciences (SUAS)
Box 7005, S-750-07 Uppsala
SWEDEN

ITRS Newsletter
Institute for Tropical Rainforest Studies
c/o Dept. of Geography
James Cook University
Townsville QLD 481
AUSTRALIA

The Forestry Professional
Institute of Forestry
Chittagong University
Chittagong, BANGLADESH

IDRC Reports
P.O. Box 8500
Ottawa, K1G 3H9, CANADA

Unasylva
c/o FAO/HQRS
Rome, ITALY

World Rainforest Report
P.O. Box 368
Lismore 2480, AUSTRALIA

IUFRO News
IUFRO Secretariat,
Schonbrunn
A-1131 Vienna, AUSTRIA

CIRDAP Newsletter
Centre on Integrated Rural Development for Asia and the Pacific
Chameli House
17, Topkhana Road
GPO Box 2882, Dhaka 1000
BANGLADESH

Know-How Wire
Jaakko Poyry Oy
P.O. Box 16
SF-00441 Helsinki, FINLAND

ASOCON - Newsletter
Manggla Wanabakti
Blok IV Lt. 8
JL Gatot Subroto, P.O. Box 133 JKWB
Jakarta 10270, INDONESIA

Forest Industry News
c/o UNDP, P.O. Box 12544
50782, Kuala Lumpur
MALAYSIA

APDC Newsletter
Asian and Pacific Development Centre
Pesiaran Duta
P.O. Box 12224
50770, Kuala Lumpur
MALAYSIA

AIRD News
Asian Institute for Rural Development
7/A Rartnavilasa Road
Basavanagudi
Bangalore 560 004, INDIA

ECOFORUM
P.O. Box 72461
Nairobi, KENYA

Nepal Forum of Environmental Journalists
G.P.O. Box 930 and 3094
Kathmandu, NEPAL

Ecological Economics Journal
Elsevier Science Publishers
P.O. Box 211
1000 AE Amsterdam
THE NETHERLANDS

LOKNITI
Angoc Secretariat
2178 Pasong Tamo, Makati
Metro Manila, PHILIPPINES

SANGO (South Asia Association of Non-Governmental Organizations)
RDF Centre (Mauve Area)
G-9/1
P.O. Box 1170
Islamabad, PAKISTAN

SHADAB
Rural Development Foundation of Pakistan
RDF Centre (Mauve Area)
G-9/1
P.O. Box 1170
Islamabad, PAKISTAN

Tropical Forest Programme Newsletter
Tropical Forest Programme
Avenue du Mont-Blanc
CH-1196 Gland,
SWITZERLAND

Ambio
Royal Swedish Academy of Sciences
Box 50005
S-104 05 Stockholm,
SWEDEN

IBSRAM Newsletter
IBSRAM Headquarters
P.O. Box 9-109, Bangkhen
Bangkok 10900, THAILAND

Common Property Resource Digest
322e C.O.B.
1994 Buford Avenue
St. Paul, MN 55108, U.S.A.

Tree Project News
c/o NGLS, DC2-1103
United Nations
New York, NY 10017, U.S.A.

Vetiver Newsletter
ASTA, World Bank
1818 H Street, NW
Washington D.C. 20433,
U.S.A.

TRI News
Yale School of Forest and Environmental Studies
Tropical Resources Institute
205 Prospect St.
New Haven, CT 06511, U.S.A.

Development Communications
World Neighbors
5116 N. Portland Avenue
Oklahoma City, OK 73112,
U.S.A.

Social Sciences in Forestry
University of Minnesota
St. Paul Campus Central Library
1984 Buford Avenue
Minnesota 55108, U.S.A.

WRI Issues and Ideas
World Resources Institute
1709 New Your Avenue, N.W.
Washington, DC 10006
U.S.A.

The Commonwealth Forestry Review
c/o Oxford Forestry Institute
South Parks Road
Oxford OXI 3RD
U.K.

ODI Newsletter
Overseas Development Institute
Regent's College
Inner Circle, Regent's Park
Longon NW1 4NS
U.K.

NFTA News
Nitrogen Fixing Tree Association
P.O. Box 680
Waimanalo, Hawaii
U.S.A.

# Abstracts of Other Presentations

**Kapwa's Experiences in Promoting Tree Growing,** by Alma Monica de la Paz, Kapwa Upliftment Foundation, P.O. Box 13, Davao City 8000, Philippines

This paper presents Kapwa Upliftment Foundation's experience of five years with the community of Lorega, on the provincial border of Davao and Bukidnon on the island of Mindanao, Philippines. Starting from villagers' identification of food security as a problem to act on, Kapwa developed a program of education, training, farm planning, material support, and marketing assistance. To augment household nutrition, vegetable-growing was encouraged. Kapwa helped farmers grow fruit trees, coffee, and cacao to reduce dependence on short-term crops. It also helped to link the community with government agencies and other farmers' groups.

Key issues that affected program implementation were: poverty, land tenure, soil fertility, and limited resources of kapwa. Food security concerns of the poor must be addressed before they can become partners in rehabilitating deforested areas. The long-term success of any tree-growing program depends on whether the target communities can own the program.

**Non-governmental Organizations in Social Forestry: Functional Scope and Limitations in India,** by R. Jayaswal, Indian Institute of Forest Management, Nehru Nagar, P.O. Box No. 357, Bhopal 462 003, India

This paper outlines the origins of NGOs' work in India from charitable work through the shift to grassroots development. With the rise of social forestry since the mid 1980s, NGOs have voiced the need for a larger role on par with government agencies. With broader reforestation efforts and the advent of the National Wastelands Development Boards has come greater dialogue with NGOs. While NGOs must act as catalysts for creating awareness and developing people's organization for collective action, they should devise means for their own sustainability by adopting an entrepreneurial orientation in a way that gains both government and popular trust. The paper puts forward a proposal for Tree Insurance Certificates, submitted to the Ministry of Environment, as an example.

**Role of Agroforestry Research Centers in Information Dissemination,** by B.S. Nadagoudar, University of Agricultural Sciences, Dharwad 580005, India

This paper briefly outlines reasons for deforestation and the origin of the All India Co-ordinated Research Project on Agroforestry, initiated by the Indian Council of Agricultural Research in 1983. Twelve of the 20 centres established in the country work through state agricultural universities; the remaining 8 are part of ICAR institutions. In 1986 the number of centres was raised to 31.

Because agroforestry research requires more time than research on agricultural crops, methods for disseminating information differ. To get information to farmers quickly, researchers should: establish demonstration farms on different tenure systems; train extension workers, farmers (separate training for men and women; joint training for husband-wife groups), and administrators;

**Integrated Upland Farming**, by Delbert Rice, Executive Officer, Kalahan Educational Foundation, Imugan, Santa Fe, 3705 Nueva Vizcaya, Philippines

This paper describes the indigenous agricultural practices of the Ikalahan people of Northern Luzon, Philippines, and some innovations that these farmers have developed recently. These latter include planting of Japanese alder (*Alnus japonicum*) in fields at the same time as the sweet potato (*Ipomea batatas*) crop to shorten fallow periods, the "gengen" system of composting, and processing for jams.

In 1974, the Ikalahan signed an agreement with the government granting them control over nearly 15,000 ha of their ancestral lands for 25 years, provided they protected the area's water and soil resources. In such communal ownership, each family has its own farmlands that are privately managed according to basic policies which are decided communally. In the 17 years since the agreement was signed, the Ikalahan have allowed more than 1,000 ha of that land return from agricultural crops to forest. About 800 ha of this have been reforested by human intervention or natural regeneration. They have established orchards of 40,000 trees of different fruits.

**The Roles and Needs of NGOs in the Development of the Philippine Uplands**, by Juanito B. Sangalang and Claudia S. Payawal, UPLB Agroforestry Program, College of Forestry, University of the Philippines at Los Banos, College, Laguna 4031, Philippines

This paper presents an overview of the Philippine uplands and the results of a survey on the views of NGO representatives on the problems in the uplands, and the roles and concerns of NGOs. A questionnaire was sent to 40 NGOs; 17 responses were received. Of 12 problems cited by the NGOs, 9 are socio-politico-economic or political, 2 are environmental, and 1 is technical in nature. Eleven respondents identified lack of appropriate upland production technologies. Land security or tenure was the most commonly cited socio-politico-economic problem. Most NGOs said that community organizing was their major role, followed by organizing training and workshops, consultation, and provision of credit. Almost all respondents cited funding limitations as a principal problem. Support needs identified included funds, staff training, coordination with government and other NGOs, and information materials.

**BAIF's Experience in Tribal Rehabilitation**, by G.G. Sohani, BAIF Development Research Foundation, 'Kamdhenu,' Senapati Bapat Marg, Pune 411 016, India

The presentation describes a project at Vansda taluka in South Gujarat aimed at settling tribal families with secure land tenure and establishing food crops, fruit trees, and other activities.

The core project is *Wadi*, in which a family establishes an orchard on 0.4 ha of wasteland for five years. The project began in 1982 and represents BAIF's long-term commitment to tribal development. Children and young people are involved in the activities.

The *Wavli* program represents an adaptation of the local tradition by which women inherit land. The program selected this approach as a way to build women's participation.

**The Anonang Reforestation Project**, by Mathew A. Tauli, Montanosa Research and Development Center, Makamkamlis, Sagada, 2619 Mountain Province, Philippines

The paper describes a reforestation project by the Montanosa Research and Development Center in the Cordillera region of the Philippines. The site is a pastureland recently settled by Kalinga tribespeople fleeing insurgent violence. In 1988, the Center responded to a request for an irrigation project by suggesting that under current swidden agriculture, irrigation would not be sustained without reforestation. The community agreed and in late 1988 began a tree nursery following training by Center staff. Major problems for social forestry in the area are land security, ensuring genuine people's participation, the need for equity, and government forestry bureaucracy.

# More Information-Sharing Services for NGOs

The range of information services for and by NGOs is multiplying, and cannot be listed in full here. Other papers in this report describe services provided by the BAIF Information Resource Centre, the Philippines Upland Resource Center, NFTA, and FAO's Regional Wood Energy Development Programme. This section gives examples of other NGO information-sharing services in India, Indonesia, and Thailand, and several international examples.

### India: ENVIS Centre, World Wide Fund for Nature

The ENVIS Centre was established in April 1990 under the Environmental Information System (ENVIS) of the Ministry of Environment and Forests.

The ENVIS Centre has compiled several professional directories, including *Directory of Indian Expertise in the Environmental Sciences* (1990), *Directory of Audio-Visual Material on Environment Available in India*, and *Directory of Environmental NGOs in India* (1991). It responds to queries from NGOs in India and abroad on projects, technical subjects, training programs, and information material.

The Centre has organized workshops on Effective Project Administration for NGOs and Geographic Information Systems for NGOs. It participates in the information network sponsored by the U.N. Environment Programme for environmental NGOs.

Contact the ENVIS Centre, World Wide Fund for Nature Secretariat, P.O. Box 3058, 172-B, Lodi Estate, New Delhi 110 003, India.

### Wahana Lingkungan Hidup Indonesia (WALHI)

WALHI, or the Indonesian Environment Forum, has grown since 1980 to include about 400 NGOs throughout Indonesia. It aims to increase NGO participation in environmental development and the quality and quantity of NGO programs. WALHI's main activities include: communication and information, training and education, program development, and advocacy.

Contact WALHI, Jl. Penjernihan 1 Komplek Keungan No. 15, Pejompongan, Jakarta 10210, Indonesia.

### Thailand: Computer Communication Access for NGOs (CCAN)

CCAN began as a joint project of seven NGOs in 1988. It aims to facilitate fast and inexpensive information exchange among NGOs in Thailand, and to gain access to related computer networks and databases abroad, including London-based GEONET.

CCAN operates a 24-hour computerized bulletin board system called CCAN BBS. Both Thai and English can be used on the system. The system is open to the public, with a few mail and file areas accessible only to member NGOs.

CCAN also provides training for member NGOs in how to use communication software, BBS, and GEONET.

Contact the Computer and Information Service, 121/72 Soi Chalermla, Phyathai Road, Rajthevee, Bangkok 10400, Thailand.

### Asian Alliance of Appropriate Technology Practitioners

APPROTECH ASIA is a regional organization that aims to increase access to appropriate technologies that can help meet the basic needs of poor and disadvantaged people. It promotes sharing among its members and with other relevant organizations. In addition to Appropriate Technology Dissemination and Training, its programs include Women and Appropriate Technology, which focusses on new efforts to train women on specific technologies and strategies. APPROTECH ASIA also publishes technology manuals and a network newsletter on technology issues.

Contact APPROTECH ASIA, Philippines Social Development Center, Magallanes cor Real Streets, Intramuros, Manila 1002, Philippines.

### Asian NGO Coalition for Agrarian Reform and Rural Development

This coalition, known as ANGOC, is a forum for NGOs of Asia, with members in Bangladesh, India, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka, and Thailand. ANGOC provides a clearinghouse for exchange of experiences, knowledge, ideas, and information. It also aims to promote South-South and North-South dialogue and technical and financial cooperation.

Contact ANGOC, M.C.P.O. Box 870, Makati, Metro Manila 1200, Philippines.

### Agroforestry Seed Information Clearinghouse

AFSICH aims to facilitate information exchange on agroforestry seed sources, availability, and technology among governmental and nongovernmental organizations. It was established in 1987 with funds from IDRC and World Neighbors to serve mainly Southeast Asia and the Pacific.

Activities include: maintenance of a database on agroforestry seed sources and seed technology; research on seed storage and quality testing; training courses on agroforestry seeds; and networking.

Contact AFSICH Project, Department of Agronomy, UP Los Baños, College, Laguna 4031, Philippines.

### Both ENDS

Both ENDS stands for ENvironment and Development Service for NGOs. It was established in 1987 to help citizen's groups that integrate environment and development. Both ENDS helps them to find potential donors, sources of information, and linking with other relevant contacts.

Both ENDS is not a donor agency, but it mediates in funding procedures. It collects and maintains information about potential donors and their activities. Both ENDS also traces specific technical, scientific, and legislative information that NGOs cannot find locally.

Finally, Both ENDS organizes workshops and meetings on international cooperation, ecologically sustainable development practices, and relevant experiences. To promote international cooperation on these issues, Both ENDS maintains contacts with media and lobby groups in the Netherlands and elsewhere.

Contact Both ENDS, Damrak 28-30, 1012 LJ Amsterdam, The Netherlands.

# Major Points from Two Related Workshops

## Community Forestry NGOs and Policy: What Makes for Success?

*Bangkok, Thailand - June 1991*

More than sixty professionals from 10 Asian countries attended this workshop, organized by the World Resources Institute, the Local Development Institute (Thailand), and FAO. Attention was focussed on the importance of indigenous forest management and the need to respect and use indigenous knowledge and local customary rules as a basis for wise resource use. Successful community forestry requires "people's deep involvement in the whole development process." To succeed, community forestry programs may need to include local, small-scale processing activities.

NGOs are capable of playing a brokering role between communities and government and research organizations, obtaining community feedback, acting as advocates for legal aid, and acting flexibly, with a minimum of bureaucracy. On the other hand, they often lack funding, human resources, and materials. Sometimes they lack technical expertise and coordination. Some may overstate their achievements.

Policies affecting land tenure are crucial for success. Most land tenure legislation needs to be updated to reflect changed conditions. Community forestry programs should aim to develop local institutions. Communities' own assessments of success or failure are more important than outside evaluations.

*For a copy of the report, contact Local Development Institute, Dept. of Medical Science, 2nd Building, 693 Bumroong, Muang Rd., Pom-prab, Bangkok 10100, Thailand.*

## NGOs, Natural Resource Management and Linkages with the Public Sector

*Hyderabad, India - September 1991*

This workshop, sponsored by the Overseas Development Institute, brought together government and NGO experiences from seven Asian countries. It categorized six broad types of roles through which NGOs can link with GOs. While GOs were mainly interested in the "service delivery" roles that NGOs might fulfill, case studies showed that NGOs preferred to play a range of more innovative roles in their links with GOs. NGOs were generally unfamiliar with GO operating procedures; GOs generally did not understand the ethos and objectives of NGOs. Participants suggested that governments introduce procedures for temporary attachment (1-2 years) of GO staff to NGOs, and for similar arrangements for NGO staff to join GOs on a temporary basis. Such arrangements would be particularly beneficial in South Asian countries.

NGOs often had difficulty identifying appropriate contact points with government. The "NGO desk" model introduced into line Departments in the Philippines may be more widely adoptable.

GOs' workplans, particularly those of research institutes in South Asia, often commit resources long in advance. To allow them to respond to NGO-identified needs, a small portion (5% at first) should be left uncommitted each year.

*For a copy of the report, contact John Farrington, ODI, Regent's College, Inner Circle, Regents Park, London NW1 4NS, United Kingdom.*

# Workshop Participants

**INDIA**

Mr. Ashish Atri
Tata Consultancy Services
Nirmal Bldg.
Nariman Pt.
Bombay 400 021

Mr. Bipin Das
Gram Vikas
Mohuda Post, Berhampur
Ganjam 760 002

Dr. M.R. Dhawale
Shivsadan Renewable Energy
Research Institute
S. No. 192/3
Indl. Estate
Sangli 416 416
Maharashtra

Dr. A.P. Dikshit
Agricultural Finance
Corporation Ltd.
Dhanraj Mahal, 1st Fl.,
C.S.M. Marg
Bombay 400 039

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Pune 412 202

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of Science & Technology for Rural
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Kothrud, Karve Road
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Foundation
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Dharwad 580 008

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Senapati Bapat Marg
Pune 411 016

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Council for Advancement of
People's Action and Rural
Technology
58, Institutional Area
Pankha Road, D Block
Janakpuri, New Delhi 110 058

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Indian Institute of
Forest Management
Nehru Nagar
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Bhopal 462 003 (M.P.)

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Forestry Consultant
The Land People
Plot III, P.T.P. Nagar
Trivandrum 695 038
Kerala

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813/151 Pradeep Chambers
B.I. Road, Pune 411 004

Mr. Arvind Karandikar
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B.I. Road, Pune 411 004

Mr. Govind Kasurde
National Spiritual Assembly
of the Bahais of India
Bahai House, 6 Canning Road
P.O. Box 19
New Delhi 110 001

Mr. D.Y. Khandale
BAIF Development Research
Foundation
CRS, Urulikanchan
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Development Foundation
P.O. Sirigere 577 541
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University of Agricultural
Sciences Dharwad
Forestry Dept. Krishna Nagar
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People's Action and Rural
Technology
58, Institutional Area
Pankha Road, D Block
Janakpuri, New Delhi 110 058

Mr. Vinayakrao Patil
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