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NGOs' role in improving social forestry practice: does it help to increase livelihood, sustainability and optimum land use in Bangladesh?

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Summary

At present, encroachment rate is too high and increasing alarmingly that causes environmental degradation as well as low forest cover and productivity in Bangladesh. Rural poverty accelerates the encroachment in meeting the demand of dwelling place and forest products. The natural encroached and degraded forest is under public management regime while a substantial amount of marginal land belongs to other semi-public agencies such as Roads and Highways, Water Development board and so on. Due to lack of initiatives and proper management these lands have been left unused and under utilized. In contrast, non-governmental organizations (NGOs) are with appropriate management structure and technologies to utilize these lands in reducing poverty and enhance rural livelihood. In order to rehabilitate these encroached forests non-governmental organizations have been found to be very active and successful. They have added a new dimension in the forest management, which has ensured participation of the community people and protection of the forest, no matter artificial planting or natural. The study attempted to evaluate the social forestry activities of Four large NGOs namely BRAC, PROSHIKA, CARITAS, CARE. The study also discussed the public social forestry activities to find out the nature of the program and the involvement of the local people. By following a framework of common partnership between public and private management systems, the issue 'property right conflicts' has been resolved and enhanced rural life as well as created scope of utilizing the marginal lands. As an outcome of this common partnership 33,472 km roadside plantation, 53,430 ha reforestation activities and so on have been carried out in last two decades. The achievement of NGOs' partnership in managing forest resource seems to be effective towards poverty irradiation and better livelihood.

Introduction

Bangladesh is a floodplain delta located in the north eastern part of South Asia between 20°34' and 26°38' north latitude and between 88°1' and 92°41' east longitude. The total area of Bangladesh is about 147,570 square km (BBS, 2000). The cultivated total land area is approximately 63 percent and the remainder consists of forests, homesteads, rivers, tidal creeks, lakes and ponds including highlands and lowlands. Most of the forests are spread over the south-eastern part of the country. The forestry sector contributed to GDP by 3.28% while generated employment by 2% of total labour force in 2000 (FSB, 2000). It was estimated that about 2.45 million ha of total land is under forest, of which 2.18 million ha is owned by the government and the remaining 0.27 million ha is privately owned. Table 1 shows the distribution of different forest lands of the country. The sal forest is about 0.7% of the total land area and about 0.3% of tree cover. Private village-forests that contain annual and perennial trees provide a major source of food and income for majority of the people. The hill forests provide the main source of timber and sal forest is the source of firewood and poles with a little sawn timber. Bamboo, honey, fish, wax and cane are some of non timber forest products (NTFPs) produced in the forests.

See table 1

Various Management Regimes of Forest in Bangladesh

There are different initiatives have been undertaken by public¹ and private² development agencies through various management options since 1971. These various options of management have been discussed in the following section.

Forests under Public Management

Natural forest, nurseries and Non-Forest Timber Product (NFTP) plantations are managed by the public sector. About two million ha of natural forests are under public management. There are two government agencies that are responsible to manage the public forest namely, Forest Department and Ministry of Land. The Forest Department takes the major role in managing forest between these two agencies by applying centralized management option or people-oriented management.

The tropical evergreen forests cover approximately 11.32 million ha, of which 0.67 million ha is managed by the Forest Department. The local administrative authority, called the Hill District Council, manages a substantial portion of high forest that accounts 10.65 million ha. The sal (*Shorea robusta*) forest is spread over 0.12 million ha of flat land that is maintained and managed by Forest Department directly though some parts are under participatory management regime. The main feature of the people-oriented management is the involvement of the local people or community to maintain and protect the forest resources. There are different types of people-oriented forest management in Bangladesh though this sort of management is join management to some what extent. For the first time, participatory forestry management was started in the hilly area. The approach further extended to sal forest and unused marginal lands. At present, the involvement of people in the management is quite versatile. The sharing arrangement between the government and the participants are now more reasonable than that of before.

Some of the natural forests belonging to Ministry of Land are managed by a co-management regime. Ministry of Land also has a big amount of marginal lands like the embankment, roadsides. These lands are used for fast growing tree plantation under some social forestry models involving the people living adjacent to the land. The technologies followed in these models are alley cropping, boundary plantation, dike plantation; roadside plantation, single species plantation and so forth with specific sharing arrangements between the government and beneficiaries.

¹ such as Ministry of Land, Ministry of Environment, Roads and highways and Water Development Board

² NGOs such as BRAC, PROSHIKA, CARE-Bangladesh, World Vision, CARITAS

Forests under Private Management

In recent years private forest management has been found to be productive and popular among the middle income group people. Private management usually consists of people who are necessarily assimilated in the arrangement of implementing social forestry activities by the facilitator and the financing authority.

Village forest is a kind private social forestry practice that is not easy to classify as an organized forestry component in Bangladesh. The amount of marginal land of homesteads is quite substantial encompassing about 0.27 million ha. However, there are abundant village forests scattered all over the country. In the village some people are interested to do forestry as income generating activities. In some cases these marginal lands are used for block plantation or woodlot plantation. Single species plantation is preferred by the owner of the private forest. Hence, having the private land ownership the homestead marginal lands have been the most potential productive sector that meets 60 percent demand of timber, 80% demand of fuel wood and 90 percent demand of bamboo (Bhuyian, 1991).

The non-governmental organization in the management of overall forest resource is rather complex. However this type of forest management is important and significant in transferring technology and providing some facilities like training and monitoring. They are now actively involved in the public forest management because of having working capacity at grass-root level people. The NGOs are playing an increasingly effective role in extending social forestry activities in the country. There exists more than 100 NGOs that are very active in social forestry activities in Bangladesh (ADAB, 1992). The group approach is followed by most of the NGOs to provide their financial assistance and recovery for private forest management. Most of the NGOs are promoting afforestation as one of their many people oriented programs. This has resulted in substantial increase of private nurseries in the country. Some NGOs are emphasizing on homestead forestry in order to develop the socio-economic condition of landless farmers. The types of social forestry programs are being implemented by NGOs generally in the forms of homestead agroforestry, strip plantation, block plantation, plantation on homestead area, marginal lands, forest land and on the fallow lands of the different institutions such as educational and religious institutions.

Social Forestry in Bangladesh

By definition it is apparent that peoples' involvement in forestry activities is the main concern of social forestry (Rao, 1992). There are different types of social forestry activities followed based on the societal linkage between people and the forestry activities. The social forestry practices of Bangladesh are described in the following section. Table 2 shows some features of these social forestry models.

Agroforestry

Agroforestry is the most known social forestry model because of its widespread application. Agroforestry produces multiple crops and ensures maximum utilization of the land by which the communities could satisfy their need. In Bangladesh mixture of trees, crops and vegetables is an old tradition in the composite farming system that has been just left undefined as an established production system.

See table 2

Strip plantations on marginal land

Strip plantations on marginal land are a unique model followed by the private and public agencies substantially. The design of the model varies depending on the factors like land condition, width of the strip, needs and aspiration of the people. Strip plantation is normally raised by the Forest Department with or without the participation of the rural poor and NGOs. The main aim of this model is to utilize the marginal land like the slopes of railway lines, roadsides of highways, canal bank, and embankments. In selecting the species, local needs and site conditions are considered along with ensuring multiple use of land and multiple use of produce compatible with the available technology, socio-economic culture and site potentialities.

Woodlot plantations

Woodlot plantations were raised by FD both for raising short-term fuel-wood and also to resettle rural and poor people. The lands where the woodlot plantations were raised are absolutely barren and lying as waste land. The woodlot plantations were very productive for raising short rotation fuel-wood with or without agroforestry. The woodlot plantation as it stands now can also be called a successful effort in rehabilitation of land. The lands used for community woodlot forestry are mostly un-used or under-used lands. The community stays around the land is commonly the beneficiary of the social forestry activities.

Rural and homestead agro forestry

Rural and homestead agro forestry is playing a vital role in Bangladesh. Almost every rural household grows some trees, bamboos, shrubs and so forth around the homestead or on the boundaries of the land for the supply of fruits, vegetables, timber, construction materials, fuel wood and so on. This unorganized sector of forest i.e. rural and homestead forestry is an integral part of the total forest area and forestry resources of the country (GOB, 1990).

Plantation on canal Banks

Plantation on canal banks is another important model of social forestry in Bangladesh. Plantation are raised on the banks of the canals scattered over the country. It also stabilizes the banks, ensures productive use of the bank areas and keeps the canals silt free. Mostly Multi Purpose Tree species like Eucalyptus, Sisoo (*Dalbergia sisoo*) and fruit trees like date-palm, Jack fruit and papaya are grown on the banks.

Plantation for watershed management and flood control

Plantation for watershed management and flood control is an intensive participatory approach. The flood control embankment occupies a significant amount of land of which a big portion is left as marginal that is appropriate for plantation. The plantations that are on public land are strongly subjected to maintenance and protection. Hence, it is people's participation intensive social forestry. In order to make the participants well skilled to face the flood situations, the training regarding the specific and technical aspects of such plantation is included in the model.

Participatory Social Forestry Programs of Bangladesh

In 1979, the first participatory social forestry program had been started at Betagi and Pomora village of Chittagong district. Subsequently it was extended to other parts of the country. The fundamental aim of these activities was to protect and regenerate forest resources through the users. The programs that have been undertaken since 1971 are briefly discussed below. Table 3 reveals the summary description of these programs.

Betagi-Pomora Community Forestry Program

Betagi-Pomora Community Forestry Program was the first participatory community forestry program covered 160 ha of denuded public hilly land at Betagi village. A total of 83 landless families from adjacent community were taken as participants. Subsequently, it extended over another 205 ha denuded hilly land at Pomora with another batch of 243 landless (families) participants. Each household was provided 1.62 ha of land for growing tree and horticultural crops with technical and financial assistance from the Forest Department. This community program had given the landless an identity and a sense of direction in life.

See table 3

Food Assisted Social Forestry Program

The main objectives of this program were to alleviate rural poverty, especially the poverty of destitute women of the society by engaging them in forestry

activities and environmental improvements. Initially on the basis of kind resources the program included a limited number of NGOs for raising strip plantation along roads, embankments, highways and so forth through the participatory approach. Forest Department was involved to provide technical guidance to the NGOs. At present, probably this is the largest Participatory forestry program in Bangladesh. From 1990 up to 1998 about 31 million trees were planted under this program. The benefit sharing arrangement was contractual (participant 60% + NGOs 10 % + land owners 30%).

Development of Community Forestry Program

The activities of the first phase of this program began in 1981 and were completed in 1987. The achievements of the programs were as follows:

1. Strip plantations along roads and highways, railways, canal sides, district and Union roads, totalling about 4,000 km
2. Fuel wood plantation on 4800 ha of depleted public land
3. Agro forestry demonstration farms over 120 ha
4. Replenishment of depleted homestead woodlots in 4,650 villages

ADB Assisted Social Forestry Program

The program comprises of 17 sub-programs extending over 18 of 31 forest divisions. New woodlots were established on about 10,150 ha of forest land, while another 6,450 ha were used for agroforestry plantation in the first rotation. Linear strip plantations established on over 12,000 km strips along roads, canals and railways. About 7,800 ha of char (land in the rivers) had been forested.

Development of Forest Extension Services Program

Development of Forest Extension Services (Phase II) began in 1980 with the financial support of government and subsequently amalgamated in some areas (i.e. North West district) with Asian Development Bank (ADB) funded Community Forestry Project. The main activities under this program were:

1. Afforestation in some 3100 villages
2. Roadside tree planting along 3600 km of primary highways and roads and about 600 km of Union roads
- 3.

Afforestation and Nursery Development Program

This program is a follow-up of Development of Community Forestry Program and Forest Extension Program. The program aimed to develop sustainable tree resource base. It is designed to bring all suitable and available land under tree cover in the rural areas with active participation of the rural poor of the locality.

The main activities of the program were as follows:

1. Plantation on 20,225 ha depleted sal forest areas
2. Agroforestry practice on 4,200 ha in the sal forest lands
3. Raising strip plantation on 17,272 km along roads and highways, railways, embankment

NGOs' social forestry activities

NGO's activities were started after the independence of Bangladesh through relief and rehabilitation of the millions of refugees. Presently the NGOs are conducting their programs on social forestry and play a very dominant role for social development, poverty alleviation. The tremendous interest was shown by NGOs in social forestry in all its implication and intents. This has resulted in substantial increase of private nurseries, plantation and so on in the country. Some NGOs are emphasizing on homestead forestry in order to develop the socio-economic condition of landless farmers. Both local and national NGOs advanced much to implement agroforestry activities by the active participation of their organized group members. The social forestry activities of four Large NGOs are discussed in the following section:

BRAC (Bangladesh Rural Advancement Centre) is one of the most popular and active NGOs carrying out substantial social forestry activities toward rural development and sustainability of resources. It was begun in 1972. BRAC's activities have expanded across Bangladesh. The Rural Development Program (RDP) was launched in 1986 with the approach of village organization (VO). The VOs organizes the poor, providing them with credit and other necessary technical support to make the optimum use of marginal land and other types of social forestry practice as follows:

Nursery (forest-fruit)

BRAC established nurseries in each area office producing 10-15 thousand seedlings of different fruit, fuel and timber trees. The nursery workers are given week long training on seedling production. The seedlings are sold within the community. BRAC staff provides technical support and regular follow up services. Credit and other inputs are also provided by BRAC. The number of nurseries increased to 1949 in December 1995. The nursery workers produced a total of 16,445,553 seedlings in 1995. Grafting nursery meet the increasing demand for HYV seedlings at the grass root level. A total of 258,996 grafted seedlings of mango, lemon and litchi were produced from these nurseries.

Plantation

The VO members around their homestead areas plant seedlings of various species. The seedlings are purchased from the members' nurseries. Roadside plantation is a joint program between BRAC and FD's Thana afforestation and

Nursery Development Projects. Under this model trees were planted on roadside, embankments, railway sides and Union roads. Women were also engaged in cultivating maize, brinjal, chilies, beans etc. on adequately sloped roadsides. Another program coastal afforestation was undertaken in the island of the Kutubdia and Chokoria Thana in 1991 to create buffer with the trees against cyclone winds.

Agroforestry

A pilot project on agroforestry was launched under the Rural Enterprise Project (REP). The project initiated on private and government owned land in the northern district aiming to produce wood, fuel, fodder, food, fruit and vegetables. Farmers owning 0.35 to 0.50 ha of land were selected for the program. They were given a 3-day training as well as credit, seeds, technical support and follow-up services. Around 428 ha were brought under agroforestry, involving 863 participants.

See table 3

PROSHIKA³ is one of the largest national NGOs in Bangladesh. The social forestry program of PROSHIKA is a systematic intervention to enhance afforestation in the country that showed that poor are the best managers and protectors of the forest resources. Involvement of PROSHIKA's group members in social forestry activities contributes significantly in reduction of the poverty. The activities conducted are as follows:

Homestead plantation

In many cases, the poor people do not have any other land resources except the homestead. PROSHIKA motivates its group members to plant the multipurpose tree species and fruit species in the homestead, which eventually become a good source of income without demanding any extra effort of time. Up to June 1997 a total of about 5.5 million seedlings of Multi-purpose Tree species (MPTs) and fruit trees were planted by the PROSHIKA group members in their household.

Strip block plantation

PROSHIKA group members are involved to raise strip plantation on the side of feeder roads of Union Council, embankment of Water Development Board and railway tracks. They are also involved in raising block plantation both on private and public land under a long term lease agreement on a sharing arrangement. The groups get financial support to establish the plantation from the Revolving Loan Fund (RLF) of PROSHIKA. About 8,047 km strip plantation and 13203.70

³ It is a Bengali name standing for Training, Education and Work

of block plantation were raised by the involvement of groups of PROSHIKA by 1998.

Agroforestry and Woodlot forestry

PROSHIKA group members participated in practicing agroforestry and woodlot plantation under the Thana Afforestation and Nursery Development Project (TANDP) in May 1992. 27,170 numbers of PROSHIKA group members were involved to raise a total of 12011.49 ha of Agroforestry and woodlot forestry by planting 34,772,275 seedlings in 1989-90 to 1996-97.

Participatory Sal forest protection

One of the most contributions of PROSHIKA to the development area is the introduction of the concept of participatory forest management in Bangladesh. PROSHIKA was able to persuade the government to start this program and carried out in 961.94 ha of public forestland. These components were incorporated in the forthcoming forestry sector project.

See table 5

CARITAS

CARITAS is a local, national NGO. For human welfare and development, the catholic Bishop Community establishes this organization in East Pakistan before liberation. In 1976 it was renamed CARITAS Bangladesh. Presently CARITAS is conducting various programs for rural development including social forestry activities on homestead, roadside, crop land and land around institutions. The activities are as follows:

Homestead tree plantation and roadside plantation

In 1995-96 and 1996-97 among the four regions Barisal, Mymensingh, Rajshahi, and Barind area, seedlings are distributed at the total number of 175,626 against targets of 136,500. 1996-97 Barisal regions on its own accomplished 5 Km of roadside plantation against a target of 8 Km but collaboration with Thana afforestation programme of forest department led to another target of 8 Km. In 1996-97, the Mymensingh region planted 5 Km against a target of 10 Km. Table 6 reveals the in details of the program.

See table 6

Fallow land agroforestry

CARITAS brought the fallow lands of Barisal, Rajshahi and Mymensingh in the form of cultivable land. The target for fallow/Khas in 1995-96 and 1996-97 in the Rajshahi region was achieved (a total of 2.64 acres). But the achievement of

the fallow land agroforestry was better in Mymensingh region where 2.24 ha were brought under tree plantation during 1995-97 as against the target of 1.27.

Homestead vegetable cultivation and village demonstration nursery

Under the homestead vegetable cultivation programme, winter vegetable seeds distributed in Barisal AND Rajshahi, Up to 1996-97 the total number of village nurseries established was 525. Out of these 375 belonged to male group members and 150 to female group members. The land area covered by these nurseries was 28.73 ha.

Tree plantation in institutional premises

In Barisal, 76 institutional premises were brought under plantation against the target of 36 institutions. In the Rajshahi region the target for plantation was 38 institutional premises but the achievement is the number of 151 institutional premises. Table 7 reveals the in details of the program.

See table 7

CARE Bangladesh is another important NGO is CARE Bangladesh which has embarked social forestry as a programme in Bangladesh. CARE's programs are discussed below:

Local Initiatives for Farmer's Training (LIFT)

In 1990 CARE Bangladesh initiated a two-and-a-half year pilot project to irrigate tree component into LIFT. This effort was supported by means of grant from private Rural Initiative Programme (PRIP). The purpose of the pilot project was to increase tree planting and tree management among the participants. Agroforestry component in LIFT were a) Promoting tree planting of homestead in order to upgrade existing stocks and increase net productivity; b) Bringing about synergies between vegetable gardening and tree planting; c) Achieving sustainable impacts on income and nutrition for marginal and functionally landless household. Table 8 reports the activities of LIFT

See table 8

Chittagong Homestead Agroforestry project (CHAP)

Chittagong Homestead Agroforestry project aimed to improve the socio-economic status of 13,200 low-income rural families by 1999 in three coastal Thanas of Chittagong and Cox's Bazar Districts. The activities were a) 240 women participant involved and run commercially viable nurseries to increase tree resources; b) Participants increased their productivity through agroforestry practices. c) CHAP strengthened the capacity of local NGOs by providing

training and technical assistance to help them carry out agroforestry activities for their members.

An evaluation of NGOs' social forestry activities

Does it help enhancing livelihood?

An evaluation of NGOs involvement in the social forestry reveals that they have achieved success in the following areas by increasing the livelihood, sustainability and utilization of marginal land of the participants (ADAB, 1988):

- a) Created awareness among the people regarding the need to plant more trees and the economic and commercial value of trees.
- b) Emphasized the role of agroforestry as a sustainable means of creating employment opportunities, augmenting income, improving the state of use of marginal land, and also as an effective tool of poverty alleviation in the rural sector.
- c) Organized the rural poor, landless farmers, unemployed youth and other socio-economically marginalised people into coherent, functional and self-sustained groups for undertaking different income generating activities. (Farington et. al. , 1989)
- d) The number of woman participants is higher in NGO social forestry programs than the public social forestry programs that created many scopes for the women to enhance the standard of living.
- e) Developed different successful and innovative approaches and models of social forestry that is more appropriate in showing remarkable spontaneous response from the people (Hossain, 1992)

Does it help increasing sustainability?

- a) Helped the enrichment and replenishment of the depleting homesteads.
- b) Expanded the horizon of thought and practice of planting trees with wide spacing and proper trimming in agricultural lands also without hampering the output of main crops.
- c) Infused the idea of balanced planning of the homesteads by selecting different varieties and species of timber, fruit, fodder, fuel wood, bamboo saplings for plantation so that need for all types of forest products can be met from local sources (Huda, 1987).
- d) Helped establishment of nurseries by groups, individual, model nurseries by NGOs are working as practical guides for setting up such nurseries by private individuals. It is worth mentioning that the number of private nurseries in Bangladesh has increased to about 4000 from a few hundreds during the last three to four years. This has resulted due too the large demand created for saplings for plantation and the training and support being organized by a large of NGOs.

- e) Played a very important role in organizing training of their target groups on forestry techniques, improved silvicultural practices and also different updated methods of nursery raising and tree improvement. This is improving in helping the variety and quality of the rural woodlots and homesteads.

Does it help ensuring optimum utilization of land?

- f) Created increasing interest among the rural landowners to use their personal marginal lands for establishing woodlots.
- g) In areas where govt. Programs are facing difficulty due to bureaucratic constraints, credibility gap, lack of to proper commitment, field level involved and proper orientation, the NGOs are playing supplementary role to fill up the gaps and collaborating with govt. Agencies to remove the constraints and achieve the project objectives

Shortfalls of NGOs participation in social forestry program

NGO social forestry activities are showing some weaknesses that need to be remedied in the better interest and sustainable expansion of overall social forestry programs.

- a) There is a lack of co-ordination among the NGOs both at the national and local levels (Cort, 1989).
- b) A large number of NGOs who peruse social forestry lack trained forestry experts in their organization. It is felt that trained foresters need to be recruited to improve the technical aspects and expand updated techniques for silviculture and tree improvement.
- c) Some NGOs showed rigidity in formation of groups as they insist in having landless farmers of members from such specific strata of the society. This in some cases has related social tension among the different groups and also between the members and non-member people in a given area.
- d) There are also allegations that some NGOs are developing bureaucratic structures which are no better than much criticized govt. Bureaucracies. Lack of transparency is also one of the allegations against many NGOs. There are also complaints that the NGOs do not follow any well-structured or uniform and institutionalized recruitment and benefit payment system to their employees. Lack of security of service of employees is also one of the allegations in the NGO structure. These effect the success of all NGO programs including those in the agroforestry sector where the challenge of motivating , organizing and involving the rural people in sustainable agroforestry practices is a potential one (Biggs,*et al.*)
- e) The benefit sharing mechanism followed by the NGOs is not uniform and in many cases no written agreements exist (Farooque, 1993). Moreover information supplied by NGOs

sometimes do not tally with the same provide by the participants. The sharing mechanism differs not only among the different NGOs but also differs from place to place even in case of the same NGOs.

Conclusions

Bangladesh has a great prospect of social forestry undoubtedly in recovering the eroded environment and rehabilitating the poor with a proper strength. Thus, , NGO's agroforestry activities should be appreciated and facilitated by both the govt. and the people. Though they have some shortfalls because of implementing new innovation in a community, they are needed be provided help to extend their program to a larger extent. Another good result from NGO's agroforestry activities is creating employment generation. Especially women are getting some work from agroforestry practice by getting involved in seedling production, dike-cropping etc., It can help them without any extra efforts and time to generate some income. In conclusion, the following points could be specified: The conclusions are as follows:

2. NGOs can go in a join undertaking with govt. to spread their activities in public forest areas.
3. They should make written agreement with people to sustain their program much more properly.
4. NGOs are to be more conscious about their coordination among them by conducting agroforestry program on sharing concept.
5. Bureaucratic approach is to be completely avoided to achieve their goal from the grass root level.
6. To develop the technical assistance of the program it is necessary to recruit trained personal.
7. NGOs should express themselves to rural people with transparency what they want to do for the people.

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Table 1: Forest lands and tree cover of the total land

Classification	Total forest Area (mill. ha.)	Percent of total land	
		Total area	Tree cover
Hill Forest	1.38	9.6	2.3
Littoral Forest	0.65	4.5	3.2
Plains (Sal) Forests	0.11	0.7	0.3
Village Forests	0.27	1.9	1.9
All	2.41	16.7	7.7

Source: Forest Department's Project UNDP/FAO/BGD/19/017, 2000

Table 2: Description of different social forestry models practiced in Bangladesh

Type of social forestry	Characteristics	Purpose	Tree species
1. Agroforestry	a. Shrub and woody perennials	Fuel wood, crops, fruit trees	<i>Acacia mangium</i> , <i>Eucalyptus camuldulensis</i> , <i>Acacia auriculiformis</i>
2. Strip plantation	a. Woody perennials	Fuel wood, vegetables	<i>Dalbergia sissoo</i> , <i>Eucalyptus camuldulensis</i> , <i>Acacia auriculiformis</i>
3. Woodlot plantation	a. Woody perennials	Fuel wood, timber	<i>Dalbergia sissoo</i> , <i>Eucalyptus camuldulensis</i> , <i>Acacia auriculiformis</i>
4. Rural and homestead agroforestry	a. Shrub & woody perennials	Timber, crops, fuel wood	<i>Samanea saman</i> , <i>Albizia indica</i> , <i>Terminalia arjuna</i> , <i>Acacia auriculiformis</i>
5. Community land and rural woodlot	a. Woody perennials	Timber, fuel wood	<i>Samanea saman</i> , <i>Albizia indica</i> , <i>Terminalia arjuna</i> , <i>Acacia auriculiformis</i> , <i>Swietenia spp.</i>
6. Plantation on canal banks	a. Shrub, vine & woody perennials, fruit trees	Crop and fuel wood	<i>Dalbergia sissoo</i> , <i>Terminalia arjuna</i> , <i>Acacia auriculiformis</i> , <i>Acacia mangium</i>
7. Plantation for watershed management	a. Woody perennials & vegetables	Crop and fuel wood	<i>Dalbergia sissoo</i> , <i>Terminalia arjuna</i> , <i>Acacia auriculiformis</i> , <i>Acacia mangium</i> , <i>Leucaena Laucocephala</i>
8. Coastal plantation	a. Bushy plants, palms	Protection and crops	<i>Dalbergia sissoo</i> , <i>Leucaena Laucocephala</i>

Table 3: Description of different participatory forestry programs in Bangladesh

Social forestry programs	Technology	Roads (Km)	Area (ha)	Seedling (No.)
1. Betagi-Pomora community forestry program	Agroforestry	-	365	-
2. Development of community forestry program	Agroforestry , Woodlot	-	4,120	-
3. Forest extension services program	Afforestation	4,200	-	49 million
4. Afforestation and nursery development program	Agroforestry , Woodlot	17,272	24,425	-
7. Agroforestry research program	Agroforestry	-	120	-
8. Food assisted social forestry program	-	-	-	31 million
9. ADB assisted social forestry program	Agroforestry , woodlot	12,000	24,400	-

Table 4: The Achievements of the social forestry program of BRAC

Activities	Cumulative up to Dec'92 Phase II	Phase III			Total of Phase III	Increased during P-III over P-II (%)
		1993	1994	1995		
No. of trained nursery workers	1375	933	578	485	1996	31%
No. of nursery workers	790	608	401	150	1159	32%
No of seedling production ('00000)	91.98	92.62	131.67	164.46	388.74	76%
Seedling planted in coastal areas ('00000)	3.30	3.90	7.65	2.72	14.27	77%
Road covered under Thana afforestation (Km)	-----	600	520	133	1253	100%
No. of beneficiaries involved in Thana afforestation	-----	5580	998	745	7323	100%
No. of tree planted under Thana afforestation ('00000)	-----	7.18	6.02	2.93	16.14	100%

Source: RDP Report, BRAC, Phase III-1993-1995, 1996

Table 5: Total achievement of social forestry program of PROSHIKA at a glance

Sl no	Type of activities	No. of thana	Length in Km. (road)	Area in acre	No of seedlings produced and planted ('00000)	No. of group involved	No. of group member ('00000)
1	Homestead plantation	100	0	0	55.24	14055	2.39
2	Nursery development project	72	0	0	203.30	2076	0.31
3	Natural Sal forest protection	7	0	2377	0	229	0.04
4	WFP assisted afforestation program	55	4585	232	21.18	2343	0.40
5	Agroforestry and woodlot forestry with TANDP	7	0	29681	347.72	1615	0.27
6	Strip plantation with TANDP	48	2144	0	10.92	1728	0.31
7	Social forestry with group assistance	16	320	0	0.04	330	0.059
	Total	100	8047	32627	646.53	23164	3.92

Source: Annual report, social forestry program, PROSHIKA, 1997

Table 6: Achievement in Roadside plantation up to 1996-97

Region	Total no. of seedlings		Length (Km)	
	Target	Achievement	Target	Achievement
Barisal	15,300	23,850	17	33
Mymensingh	12,600	11,477	14	17
Rajshahi	4,500	6,000	08	6.5
Barind	12,100	12,795	12.5	13

Source: Evaluation Report, CARITAS, Social forestry Program, 1997

Table 7: Achievement in tree plantation in institutional premises during 1995-1997

<i>Region</i>	<i>Number of institution</i>	
	Target	Achievement
Barisal	36	76
Mymensingh	68	57
Rajshahi	28	52
Barind	32	34

Source: Evaluation Report, CARITAS, Social forestry Program, 1997

Table 8: Summarization of the pilot outputs of LIFT

<i>Components</i>	<i>Achievement</i>
Micro nurseries	109
Total 1991 micro nursery production	250,000 (seedlings)
Total 1991 central nursery production	27,500 (seedlings)
Average seedlings planted per households	12

Source: Tej.B.S. Mahat, 1993