

**Strengthening the Arannayk Foundation
(Bangladesh Tropical Forest Conservation Foundation)
Phase I**



**Proposed Long-Term Implementation Strategy for the
Arannayk Foundation**

**Task Order under the
Biodiversity & Sustainable Forestry IQC (BIOFOR)**

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Executive Summary

Background

In 2000, the Government of Bangladesh and the U.S. Government signed a agreements under the Tropical Forest Conservation Act (TFCA) that provide debt relief for Bangladesh and establish a conservation fund entity, later to be called the Arannayk Foundation (AF). The TFCA requires that the AF Board consist of a majority of civil society (NGO) representatives, in addition to representatives appointed by the US Government and the Government of Bangladesh. The government representatives would have veto power over grants exceeding \$100,000 made by the Foundation. This board structure and veto power of the US Government creates a strong disincentive for other donors to contribute to the AF, even though such contributions are desired.

In late 2000, Chemonics International Inc. provided a four-person Bangladeshi-international team under BIOFOR Task Order 806 to provide advice on how to set up the Arannayk Foundation (AF) and establish the business procedures for Foundation's operations. Due to legal conflicts that emerged between the requirements of Bangladeshi law and those of the TFCA Agreement, registration of the AF as a non-profit company without shares under the Bangladesh Companies Act still has not been completed.

On the financial side, the debt reduction funds to be provided by the U.S. Government are the only confirmed source of funding for the AF. The TFCA Agreement provides for incremental payments of about \$7 million over a 19-year period. These debt reduction funds are not sufficient to create an endowment that would sustainably fund even a modest level of AF operations. The Chemonics team recommended that the AF initially use the debt reduction funds to directly finance modest operations and small grants, rather than placing them in an endowment. It believed that if the AF became quickly operational and had a significant impact on forest and biodiversity conservation that it would then be in a better position to attract additional funding. This financial reality informs the proposed short-term strategy on which the second Chemonics team has focused.

In January 2002, Chemonics International fielded a second team under BIOFOR Task Order 813 to assist the Arannayk Foundation in developing an implementation strategy for tropical forest and biodiversity conservation that is acceptable to the AF Board of Directors, including the U.S. Government and the Government of Bangladesh.

Arannayk Foundation Results Framework

The Chemonics team believes that the following results framework can guide the long- term vision and short-term implementation of the Arannayk Foundation over the coming years:

Strategic Objective: Conservation and management of tropical forest and biodiversity resources improved

- IR 1. The Arannayk Foundation established as a viable going concern.
- IR 2. Relationships with and Public-Private Partnerships among key stakeholders facilitated.
- IR 3. Forest conservation and biodiversity policy dialog and reform initiated.
- IR 4. Promising sites for forest and biodiversity conservation interventions selected.
- IR 5. Collection and exchange of information on natural forest and biodiversity resource status facilitated.
- IR 6. AF public awareness strategy initiated.

Proposed Short-Term Strategy for the Arannayk Foundation

As the AF has not achieved legal status and other contributions have not yet materialized, it would appear risky to propose an ambitious long-term strategy that would require funding which is not presently available. Rather, it seems more appropriate to propose a strategy for the next two or three years with more modest strategic interventions, which can potentially be financed if necessary, from the debt relief funding. The AF Board would use this period to seek other funds and to establish an institutional modality to attract and accept such funding. Set up and operating costs and a few small grants will largely expend the debt relief funding available over the first few years. The six results (above) provide both a starting place and a means to initiate and contribute to the long-term strategy.

- 1. The Arannayk Foundation Established as a Viable Going Concern.** The most important initial objective of the Arannayk Foundation is to establish itself as a going concern. The debt reduction funds are not sufficient to serve as a permanent endowment and if invested would generate too little income to allow the AF to set up and become fully functional. Becoming fully operational, establishing credibility and a track record of success, seems to be the most likely way to attract additional funding. To attract additional funds, the AF activities in the first 3 to 5 years of operation need to be demonstrably successful. Initial interventions can be small but they must be strategic to demonstrate successful activities and to generate interest and excitement about potential new approaches to forest conservation. Recommended key actions include: 1) completing registration of the AF as a non-profit organization under the Companies Act; 2) committing resources to appoint an Executive Director, even if on an interim basis; 3) seeking donor contributions to cover administrative and operating costs for the first 3-5 years; and 4) seeking donor and private sector project funding to support tropical forest conservation and sustainable management of production forests with AF as a long-term implementing partner.
- 2. Relationships with and Public-Private Partnerships among Key Stakeholders Facilitated.** A key element in the AF short-term strategy is to develop proven and effective partnerships between public agencies and NGOs or other private sector entities to address forest conservation and biodiversity protection issues. The vision is that these public-private partnerships will be more effective than present project and program funding for forest and biodiversity conservation under the present regime of Forest

Department enforcement of laws that exclude people and prohibit activity in protected forest areas.

At present, forest conservation and biodiversity protection activities are the responsibility of government and are primarily implemented by the Forest Department. Past initiatives have largely been implemented without the full collaboration of local stakeholders and have often been unsuccessful. NGOs and CBOs have demonstrated capacity to work with, help organize and build the capacity of local communities and other stakeholders to help insure effective project implementation. Harnessing these potential contributions of the NGOs, CBOs and private sector as well as the technical capacity of the Forest Department in public-private partnerships greatly improves the likelihood of achieving success in forest conservation and sustainable production activities.

Relationships Strengthened with Key Government Agencies

The AF has been placed under the responsibility of the *Ministry of Environment and Forest (MOEF)*, which is the ex-officio Government of Bangladesh representative on the Board of the AF. Many of the most important government agency partners for the AF are within the MOEF, including the Forest Department, Department of Environment, the Bangladesh Forest Research Institute, and the National Herbarium. The MOEF will coordinate AF relationships with all government agencies and be responsible for advocating that forest conservation and biodiversity issues receive priority and are addressed by the Government of Bangladesh.

The *Forest Department (FD)* will be both the most important and perhaps the most challenging partner agency for the AF. The FD is responsible for the management, use and control of all classified State Forest lands, including the responsibility for conserving the forests and protecting their wildlife in declared protected areas. These protected areas are the major location of residual natural forests and biodiversity to be protected. The FD will need to authorize AF activities in and around protected forest areas and will be the principle public partner in the public-private partnerships that the AF will strive to establish. The FD staff is the principle source of technical expertise in forest production and management, but is primarily focused on production forestry rather than ecosystem integrity. The FD is responsible for enforcing the laws that physically exclude people, livestock and exploitive activities from declared forest areas, a role that may be in conflict with being the public agency involved in partnerships with local communities and NGOs in the implementation of forest conservation and sustainable management activities.

The *Bangladesh Forest Research Institute (BFRI)* has a broad range of research and forest input responsibilities including permanent sample plots and nurseries focused on indigenous forest tree species in or near many protected forest areas. The BFRI will be a key partner in forest inventory and assessment activities and in monitoring biophysical impact in forest areas.

The *Department of Environment (DOE)* is responsible for broad natural resource management and protecting natural resource biodiversity, including sustainable watershed and landscape management. It has assumed management of a number of areas that it declared to be Ecologically Critical Areas, although none in protected forest areas. At present it has limited

technical and manpower capacity for field implementation activities. It will be a principle partner in developing forest policy dialogue and reform.

Some recommended key actions related to institutions and partnerships include: 1) establish an AF Board Policy Advisory Committee and ask the Secretary of the MOEF to head this committee; 2) supporting capacity building, field exposure and opportunities to train, observe and work on forest conservation issues for a wide range of government agency staff; and 3) establishing an AF Board Forestry Conservation Technical Advisory Committee, ask the CCF to chair this committee, and involve FD technical specialists in providing the AF Board with sound technical advice.

Relationships Strengthened and Partnerships Developed with Key Non-Governmental Organizations (NGOs)

The major rationale for the creation of the Arannayk Foundation is to create a funded organization that can facilitate the development of strategic partnerships of government agencies with NGOs and other private sector organizations, to undertake activities for forest conservation and biodiversity protection. It is presumed that these public-private partnerships will produce better results than activities that were managed by government agencies alone.

There are many NGOs in Bangladesh with a broad range of skills and interests in training and capacity building, primarily focused on CBOs and community groups. Far fewer NGOs have direct experience in community, social and agro-forestry or expertise in forest conservation and biodiversity protection. Modalities for developing the capacity of NGOs to be partners with AF are: 1) identify major types of activities that the AF is likely to fund and facilitate; 2) identify activities in which NGOs have the capacity to be involved; 3) identify NGOs with the capacity to implement activities; 4) identify training needs for capacity development of selected NGO partners; and 5) identify and contract institutions to deliver training programs.

There are no operational training programs in Bangladesh that fully satisfy the training requirements for the activities that are likely to be funded by the AF. Ready-made subject area modules for group training are provided in Volume 2, but the training materials remain to be developed and specifically tailored to the needs of the AF and its partners.

Some key recommended actions include: 1) the AF Board should review the Strategic Plan and adopt the recommendations or develop their own strategy providing a “win-win” situation for the AF and NGOs, based on the Boards own expertise and experience; 2) initial priority should be given to the development and delivery of necessary training using the best available expertise; 3) both NGOs and local communities should be asked to forego extractive activities that use either state forest lands or buffer zones and compromise sustainable forest-based, revenue producing and/or income generating activities; 4) simultaneous with the development of AF project activities, a system of key variables for baseline status should be measured and a participatory monitoring and evaluation plan drawn up and implemented.

Relationships Strengthened and Strategic Partnerships Developed with the Private Sector

The Chemonics team has identified the potential for private sector entities to contribute to AF funding and direct administrative support as well as three types of forest conservation/sustainable forestry activities: 1) forest conservation on privately owned or leased tea estates; 2) private enterprise involvement in interpretive programs; and 3) production of herbal medicine products.

Some tea estates have maintained or regenerated natural forest remnants and there appears to be an opportunity to enhance forest and biodiversity conservation, particularly where tea plantations border protected forest areas. Policy changes might play a significant role in facilitating tea estate participation, especially the reduction of royalties on timber they have produced.

The establishment of interpretive programs is one aspect of developing ecotourism, which offers the potential of generating income from non-extractive and potentially more sustainable forest and biodiversity related activities. Private sector operators experience in ecotourism activities are in the best position to help develop tourist facilities and interpretive programs that attract tourists and are efficiently managed. While it will require some policy changes, the vision is that tourist revenues would help support the protected areas that they visit.

Another alternative source of income that may be generated from sustainable use of natural forests is the sale of roots, bark, sap, flowers, twigs, leaves, herbs and plants as raw materials to commercial pharmaceutical enterprises for herbal medicine production. Joint ventures or some other form of public-private partnership to manage forests for the sustainable production of these products could be valuable to both the pharmaceutical companies and local communities.

Some recommended key actions include: 1) identifying possible incentives to encourage tea estate enterprises to commit to a program of natural forest regeneration; 2) involve eco-tourism operators and local tourism service providers in the planning and development of interpretive facilities in national parks and other forest protected areas; 3) work towards the necessary compromise to ensure that tourist fees are low enough that the volume of tourism is profitable for private sector operators, yet high enough to provide significant funds for the national park; 4) implement a study of pharmaceutical companies marketing herbal medicines and developing new products to determine if forest conservation protected areas might provide reliable supplies of herbal materials without compromising the biodiversity values of the protected area.

3. Forest Conservation and Biodiversity Policy Dialogue and Reform Initiated. The loss of natural forest from protected forest areas in Bangladesh continues in spite of legal provisions meant to prevent or minimize extractive use of forest resources. Past experience indicates that an approach based primarily on policing and enforcement is unlikely to result in long-term conservation of forest resources. Clearly, current forest policy, and its application, is not generating the intended results, at least with respect to forest conservation and biodiversity protection. Major issues and current constraints are:

- a. Focus of FD on Production Forestry Rather than on Ecosystem Integrity
- b. Funding and Resource Allocations for Forest Conservation
- c. Incentives for Superior Performance in Forest Protected Areas
- d. Relevance of Protected Status

- e. Forest Policies that Deter Private Sector Forestry Initiatives
- f. Centralized Forest Conservation Management Policies
- g. Need for Discretionary Local Management Powers
- h. Successful AF Pilot Activities as the Basis Policy Change

The AF should encourage dialogue and promote forest policy reform that: 1) encourages the FD to refocus programs from production forestry to ecosystem integrity, where appropriate, and commitment of budget and resources to reflect the importance of ecosystem integrity; 2) rehabilitates or reflects the reality of the degraded status of many forest protected areas rather than maintaining degraded areas as exclusionary zones; 3) recognizes buffer and sustainable use zones inside protected forest areas as an effective approach to forest conservation; 4) allows for decentralized and discretionary powers for forest resource management; 5) allows for some retention of net revenues generated by interpretive program management in national parks; 6) facilitates and institutionalizes participatory FD/NGO co-management of forest conservation protected areas and/or devolution of management to NGOs, CBOs or private sector concessions; and 7) builds on successful pilot project initiatives supported by the AF.

4. **Promising Sites for Forest and Biodiversity Conservation Interventions Selected.**

Selection of initial pilot activities must focus on feasible interventions where threats can be addressed and partnership activities implemented quickly. The strategy is to seek early successes in forest biodiversity protection that are publicly visible so that AF can build on this track record to secure itself as a permanent and viable institution.

There are only 10-15 state forest protected areas with natural forest remnants that might be conserved or regenerated. The team identified, visited and made rapid appraisal assessments of six protected area sites in four eco-regions based on secondary information and discussions with AF Board and other key informants. The team recommends that other natural forest remnants in the unclassified state forests and privately owned forests also be considered.

Criteria for Site Selection. The Chemonics team developed and used a set of four criteria for rapid appraisal assessments of protected area sites as possible locations for AF public-private partnership activities:

1. *Ecological Significance/Biophysical Condition.* Five distinct tropical forest regions were identified and considered. All except one have been subject to loss of large areas of forest cover and even more widespread natural forest degradation.
2. *Management Status.* The current legal protection status (NP, WS, GR or RF) is frequently not a good measure of actual protection. Actual protection is more closely related to: 1) relative inaccessibility, population density in and around protected areas; 2) whether the protection status is accepted or disputed by indigenous and in-migrant communities; and 3) the capacity of FD staff responsible for managing the protected area.
3. *Leverage.* Sites should have the potential of affecting the broadest possible audience of stakeholders for example success in one site might be relevant and adaptable to other protected area sites in the same eco-region.

4. *Feasibility/Project Potential.* Initial target areas should avoid situations where local communities do not accept the protected area as demarcated, there is significant social animosity between stakeholders, or where there is extremely heavy harvesting of resources by local populations.

Rapid Appraisal Results and Recommendations

Lawachara National Park was formally established in 1996, incorporating an area of 1250 hectares. The approach the AF should try to use is to negotiate with the FD to manage Lawachara and the surrounding reserves on a conservation basis rather than a production basis.

Satchuri Reserved Forest comprises an area of about 1760 ha of which 80 ha are in natural forest and the remainder in long- and short-term rotations. Satchuri RF could be an alternative to Lawachara National Park or benefit from experience gained there.

Rema-Kalenga Wildlife Sanctuary has an original area of 1095 ha, gazetted in 1981. It was expanded to 1,795 hectares in 1996. It now includes 85% of the high forest remaining in the much larger and adjacent Tarap Hill Reserved Forest. It is not recommended that pilot activities be considered in Rema-Kalenga WS unless the southern section has forests in much better biophysical condition than in the northern areas where the rapid appraisal was pursued.

Madhupur National Park, a remnant of the very extensive deciduous sal forest that once covered the central plains of Bangladesh, was gazetted in 1982 with an area of 8,437 hectares. The national park was created out of a much larger claimed reserved forest area of over 40,000 hectares, but the present extent of forest cover is estimated to be less than 4000 ha. Both the national park and reserved forest areas are the subject of dispute by both Garo and in-migrants. There is much animosity between the FD staff and local communities. The site has low pilot project potential in the short-term since it would be extremely difficult to resolve the land rights and other social issues.

Chunati Wildlife Sanctuary in the Chittagong Forest Division comprises about 7,668 ha. In 1999, FD staff estimated that less than 50% of the sanctuary was covered by dense woody vegetation and contiguous closed canopy forest was confined to small pockets on steep inaccessible terrain. Extensive plantation establishment continued under the Forest Resources Management Project until 2001. A fly-over of the Chunati WS area in March 2002, suggests that agriculture lands have increased significantly. Given the current open access nature of Chunati and all the time and resources it would take to deal with this problem, Chunati WS should not be targeted for pilot project activities.

Teknaf Game Reserve is located south of Cox's Bazar on the Teknaf peninsula, with an original area of about 11,475 ha, gazetted in 1983. The reserve is accessible from both sides of the peninsula and threats in the form of uncontrolled harvesting of resources are overwhelming. Given the current open access nature of Teknaf GR and all of the time and resources it would take to deal with this problem, Teknaf GR should not be targeted for pilot project activities.

Sundarban's Tropical Mangrove Forests contains substantial areas of natural tropical mangrove forests. However, the \$80 million financing from the ADB for the Sundarbans Biodiversity Conservation Project (SBCP) suggests that, at this stage, it would not be appropriate to use scarce AF resources for further development of a pilot biodiversity plan for a section of the Sundarbans.

Chittagong Hill Tracts

The Chemonics team arranged an over-flight of the region to verify the status of CHT forests. Two different areas, of perhaps 25 square kilometers each, of closed canopy high forest was found: 1) in the small, southernmost tip of the CHT surrounded by Myanmar on the south, east and west; and 2) directly north of Lake Kaptai. The area north of Lake Kaptai showed significant signs of human use around the periphery, mainly in the form of shifting cultivation combined with some logging. The center of both forests appeared to be intact. Together these two areas appear to represent Bangladesh's largest and perhaps highest concentration of forest biodiversity.

Provided that the renewed political uncertainty and lawless conditions in the CHT are resolved and the GOB grants easier access, the Chemonics team recommends that the AF accord these areas the highest priority in terms of intervention. The recommendations for these two CHT areas are for the initiation of biodiversity inventories as soon as conditions in the CHT stabilize sufficiently to permit field work in remote areas.

5. **Collection and Exchange of Information on Natural Forest and Biodiversity Resource Status Facilitated.** The major proposed AF interventions are to develop and support public-private partnerships in forest ecosystem management to achieve forest conservation and biodiversity protection. To assess whether these objectives are being accomplished, an inventory of the present status of the natural forests and measurement of their biodiversity for all field sites where AF supported activities are proposed is required.

Biodiversity Inventory and Monitoring

The Chemonics team chose the Habitat Suitability Index model as the basis for a cost effective inventory and monitoring program. The FD's RIMS/GIS database provides a relatively low cost mechanism to address changes over time if complemented by limited ground-truthing and assuming updated imagery can be procured and analyzed. Also, as the AF gains monitoring experience, the HSI model can be adapted to more participatory monitoring methods that involve multiple stakeholders.

The Chemonics team believes that the Capped Langur Habitat Suitability Index (HSI) Model, meets all necessary conditions to be a discriminatory indicator of forest biodiversity in most of Bangladesh's tropical forests. The population of capped langurs in Bangladesh is relatively small but significant in terms of world efforts to save an endangered species of being relatively easy to measure populations in protected forest areas. The capped langur is an upper canopy tree dweller, and an implicit assumption of the model is that if measurable improvements occur in the

upper canopy layer, the middle and lower level vegetation will also have improved. A major advantage of this approach is that it can be extended to other state forest areas not presently covered by the RIMS/GIS database, and can be adapted to develop habitat suitability models for other key species where the use of capped langurs is not appropriate.

Biodiversity Data/Information Collection, Database Management and Exchange

There is substantial information available to help inform both site-specific interventions and nation-wide strategy of forest conservation and biodiversity management. The FD, with its RIMS/GIS database, is a major source of biodiversity data and analysis capability, but other data on forest biodiversity, especially information on fauna, is widely scattered over many institutions. The value of the data is not fully realized because it is not always readily available to all stakeholders, and the information from different databases is difficult to integrate.

The preliminary institutional assessment provides a basis for identification of partner institutions and experts that should be encouraged to participate in an AF biodiversity information network. It is essential during the early stages of its existence that the AF only commits modest funds to biodiversity database management. The FD's RIMS/GIS database has the potential to serve as the core information source and repository for biodiversity information if arrangements can be made to include entry of outside information and ensure access by proposed NGO information network partners to data from the RIMS/GIS database. If the FD is reluctant or unable to expand and share access to its information base with private sector partners, then the long-term strategy of the AF should be to identify one of the larger national level NGOs or consider AF itself to become the clearing house and the depository of the biodiversity information database.

Monitoring and Evaluation of Impacts of AF Interventions on Local Forest Community Participants

There is a need to monitor and evaluate the impacts of ecosystem management projects on participating forest communities over time.. It may be difficult to sustain community participation in project interventions unless the new sustainable management zones generate sufficient income. It is recommended that an independent NGO with skills in Participatory Rural Appraisal (PRA) be hired to carry out a participatory M&E program at each site where pilot activities involving community management are initiated. The same M&E team should also whether the new protected area management regime has been accepted or new ways of exploiting the resource base have emerged.

6. **AF Public Awareness Strategy Initiated.** There is limited awareness of the concepts and significance of sustainable use of forest resources, forest conservation and the protection of forestry biodiversity for community development and sustainable livelihood opportunities. Awareness is especially limited among the poor and in rural areas. For the AF initiatives to succeed, it is essential that there is both broad public understanding of the significance of the objectives and direct support for their pursuit at the local forest community level. AF needs a strong public awareness program that develops and uses written and visual materials that effectively reach various target audiences through mass and traditional media. The public should understand the reasons why public-private

partnerships are needed, what is required to make them successful, and their role in providing livelihoods for community members. Strong public awareness programs can effectively complement proposed activities envisaged for AF support and increase their chances of success. An aware public can help generate a second “social fence” of public opinion that will deter many of the local elites from further forest resource exploitation.

The AF may have to reserve some small part of the budget to promote itself and its mission. Development of a website for the foundation would help provide an opportunity for members of the public to interact with the AF and among themselves.

Some recommended key actions include: 1) involving media personnel in environmental awareness training; 2) build on existing environmental awareness materials and programs and adapt them to the specific context of forest conservation and biodiversity protection; 3) use a wide range of media and approaches, each designed to target particular audiences; 4) identify what target audiences can do to help achieve forest conservation objectives; and 5) balance efforts to raise awareness on specific local issues with more general national issues.

SECTION I

Introduction

The objective of the Chemonics International BIOFOR Task Order (813) is to assist the Arannayk Foundation (AF) and its Board to develop an implementation strategy for tropical forest conservation and biodiversity protection that is acceptable to the AF Board of Directors, including the U.S. Government and the Government of Bangladesh.

The long-term strategy that has been developed is based on the long-term vision of the role of the AF as originally conceived and developed during the process of establishing the AF, identifying its Board of Directors and registering the AF as a non-profit organization under the Companies Act of Bangladesh (still not complete). Most of the attention of the Chemonics mission has focused on short-term (the first 3 to 5 years) activities that will give the best base and opportunities for the AF to meet its long-term vision, in relation to the anticipated major program areas.

A. Background

The U.S. Congress passed the Tropical Forest Conservation Act (TFCA) in 1998. It provides for restructuring relief from official U.S. debt for countries establishing an organization committed to tropical forest conservation and biodiversity protection, using the funds generated from debt relief. The Board of the organization has to be independent, with a majority of civil society members but with some veto powers over decisions of the organization for the U.S. Government and the government of the host country. The TFCA provides for a specific set of activities that may be undertaken by the organization. The intent is to encourage private–public sector partnerships to undertake these activities to meet the long-term goal of forest conservation and biodiversity protection.

In 2000, the Government of Bangladesh and the U.S. Government signed a protocol providing for the establishment of a foundation that would enable Bangladesh to be the first country to take advantage of the provisions of the TFCA. Under the 1998 law, two agreements have been negotiated with the Government of Bangladesh. One agreement treats the outstanding debt, and the other, the TFCA Agreement establishes a conservation fund entity, the Tropical Forest Conservation Fund, and an administering board to promote activities designed to conserve, maintain, or restore the tropical forests of Bangladesh. USAID initiated a process of institutional development anticipating the creation of the Arannayk Foundation (AF), including the identification and approval of the AF Board of Directors for the first three years of AF operations.

The TFCA Agreement essentially sets up the BTFCF and describes board constitution and operations, purposes, and other covenants related to fund operations. It requires that the board consist of a majority of members representing civil society (NGOs) in addition to representatives appointed by the U.S. Government and the Government of Bangladesh, respectively. The

Government of Bangladesh designated the Ministry of Environment and Forests (MOEF) to be the ex-officio lead agency on this initiative and one of the ex-officio members of the Board. The Joint Secretary for Development, Ministry of Environment and Forests (MOEF) was designated as the official that would discharge this responsibility on behalf of the Government. The Director of the USAID mission to Bangladesh was designated as the ex-officio representative of the U.S. Government on the AF Board. In full accord with the provisions of the TFCA, three members of the AF Board with experience in the three designated NGO sectors were selected through a widely advertised process encouraging NGO and individual nominations. A review of the nominations and selection by the ex-officio proposed AF Board members established these remaining Board members.

The government representatives would have veto power over any grant of more than \$100,000 made by the Foundation. While there is strong interest in attracting additional funding to help pay for AF operations or contribute to an endowment fund, the board structure and veto power of the U.S. Government creates a strong disincentive for other donors and private sector sources to contribute to the AF.

In late 2000, Chemonics International Inc. provided a four-person Bangladeshi-international team under BIOFOR Task Order 806 to provide advice on how to set up the Arannayk Foundation (AF) and establish the business procedures for Foundation's operations. The Chemonics team recognized that synchronizing the Tropical Forest Conservation Act, the bilateral Tropical Forest Conservation Act Agreement, and registration requirements for an NGO-type entity (trust, non-profit company, or foundation) under the laws of Bangladesh would be very difficult. However, the option chosen was to proceed with registration of the AF as a non-profit company without shares under the Bangladesh Companies Act of 1994. Due to legal conflicts that did emerge between the requirements of Bangladeshi law and those of the TFCA Agreement, registration still has not been completed.

On the financial side, the debt reduction funds to be provided by the U.S. Government are the only confirmed source of funding for the AF. While there is interest in establishing an endowment that would permanently fund the AF, the Chemonics team estimated that the AF could not permanently meet its financial needs from an endowment fund unless it could accumulate at least \$10 million, and preferably \$25 million. The TFCA Agreement provides for incremental payments of about \$7 million over a 19 year period. Given the modest amount of debt reduction funds made available each year over the 19 year period, an endowment fund based on the investment of these debt reduction funds would generate relatively small amounts of revenue that could be used to fund operations or grants. Since these debt reduction funds are not sufficient to create an endowment that would sustainably fund even a modest level of AF operations, they need to be used to leverage additional funds. The Chemonics team recommended that the AF initially operate on a modest scale, using the debt reduction funds to directly finance operations and small grants, rather than placing them in an endowment. It assumed that if the AF became quickly operational and had a significant impact on forest and biodiversity conservation that it would then be in a better position to attract additional funding. If the AF received additional funding it could then revise its strategy with regard to creation of an endowment fund, use of the debt reduction funds, and the amount of money available for

operations and grants. This financial reality informs the proposed short-term strategy on which the second Chemonics team (BIOFOR Task Order 813) has focused.

In January 2002, Chemonics fielded a second team under BIOFOR Task Order 813 to help strengthen the Arannayk Foundation (Bangladesh Tropical Forest Conservation Foundation) and set the course of its program implementation. Specific objectives are to:

1. Assist the Arannayk Board of Directors and the Executive Director in developing a long-term implementation strategy.
2. Assist in the initiation of the site selection process and design a tropical forest biodiversity inventory and monitoring project for select site(s).
3. Develop a curriculum for NGO capacity building training for conservation and management of tropical forest biodiversity.
4. Develop a public awareness strategy.

B. Report Structure

The present report, Proposed Long-Term Implementation Strategy for the Arannayk Foundation, is the first of two volumes prepared by the second Chemonics BIOFOR team (Task Order 813). Points 2 through 4 in the terms of reference above are addressed more completely in specific annexes on each of those points, found in volume two.

This Implementation Strategy volume is structured according to a results framework proposed for the Arannayk Foundation and described more fully in Section II. Section II presents the long-term vision of the Arannayk Foundation, a results framework to implement that vision, and six corresponding “intermediate results” as part of a shorter-term strategy that would initiate and contribute significantly to achieving that long-term vision. Each of these objectives is developed in Sections III through VIII, respectively, of this report. Each section is organized to address the rationale for the objective, the major institutional partnerships, inter and intra-organizational linkages and modalities to pursue them, and a description of the potential activities. Section IX presents a summary of key actions recommended throughout the previous sections.

SECTION II

Objectives: Long-term Vision and Short-term Strategy of the Arannayk Foundation

A. Long-Term Vision of the Arannayk Foundation

A1. Description of Objectives

The long-term objectives and vision of the AF to be realized over the next 15 years is for the foundation to become a permanent institution with the following features:

- Dedication to, and a key role in, successfully promoting and accomplishing activities that support tropical forest conservation and biodiversity protection in Bangladesh.
- Sufficient funding from other bilateral (including USAID) and multilateral donor sources, and the private sector (both multinational and Bangladeshi companies) to complement funds generated by official US debt restructuring relief. This funding would help to operate a significant and sustainable program of activities and interventions in support of forest conservation and biodiversity protection, using interest generated from a permanent endowment fund. The long-term funding objective is to be able to attract additional international and private sector donors that might be constrained or reluctant to provide funding directly to either Government agencies or to independent NGOs.
- Proven and effective public, NGO and other private sector participatory partnerships and mechanisms to address forest conservation and biodiversity protection issues. The vision is that these public-private sector and NGO partnerships will be more effective than project and program funding for forest conservation and biodiversity protection that are currently under the control of just one of the parties: government (mainly the MOEF and one of its implementing departments, usually the Forest Department), NGOs and/or other private sector organizations. The AF's independent board should try to accommodate the interests of all these potential partners. The long-term time horizon of the AF should be used to overcome both the conflicting interests and approaches to forest conservation of these partners, and the shortcomings of time-bounded project and program activities.
- The AF is able to demonstrate to all parties— government, NGOs, communities and private sector stakeholders— that biodiversity values and income from conservation and biodiversity protection can provide a sustainable alternative to the present income and values generated from the exploitation of natural tropical forests. Exploitation that often results in the degradation of the forest resource and its related biodiversity.

Current levels of exploitation are resulting in the degradation of the forest resource and its related biodiversity.

A2. Key Issues

This vision will require significant shifts in the approaches to forest conservation, specifically how funding is organized. For the Arannayk Foundation to achieve its long-term objectives, a whole series of key issues will have to be addressed, including:

- Population pressure on all forest lands (timber, biodiversity and other resources) that are in the public domain rather than private ownership, has led to their unsustainable use by local communities and poor in-migrant populations as the basis of livelihood. This occurs even where laws and regulations expressly prohibit entry, let alone unsustainable use of forest land resources.
- In many areas close to public domain forests, local elites and entrepreneurs have used their influence to develop and maintain commercial interests based on exploitation of public forest lands and their resources. For example, local entrepreneurs have encouraged the harvesting of fuel wood for use in their brick kilns and illegally felled trees as a source of materials for furniture making enterprises. The conversion of public domain forest lands into private lands to establish commercial agricultural enterprises has also been encouraged.
- The Forest Department, with both the legal mandate and the responsibility over designated public forests, has neither the financial resources nor the trained field manpower to fulfill their mandate effectively. The Forest Department is legally responsible for excluding the public and local stakeholders from inside the protected areas. Limited resources sometimes result in incomplete protection and ad hoc compromises with local stakeholders that allow substantial collection of resources, planting and other activities inside the protected forest areas.
- As a consequence to the above three processes, there are only remnants of natural forest areas remaining intact. As a result and despite their legally protected status, even greater effort needs to be placed on conserving the remaining areas.

A3. Challenges

The challenge to mounting a successful program of forest conservation and protection is made even more difficult by the following factors:

- Forest policies (primarily the responsibility of MOEF) and other government policies that indirectly affect forest communities and the use of public domain forest lands are not always consistent with sustainable use of forest resources, conservation of remaining natural forests remnants and protection of biodiversity.

- The Forest Department has traditionally been an effective manager of production forests rather than a conservator of natural forests. This focus and the skills of staff have generated funding for and resulted in the development of additional single species plantations and other production activities. The FD staff has been recruited and their skills developed to fulfill these production-oriented roles. The staff lacks training to work with forest communities, incentives to partner with communities, and financial and career incentives to work on local forest conservation and biodiversity protection issues. The FD has such limited experience in collaborating with NGOs and local communities to conserve the forests that many multilateral and bilateral donors, now interested in forest conservation, find it difficult to initiate such activities. As a result, there is less donor and project financing for forestry activities.
- Due to the presumption on the part of the FD that they alone have the mandate for all forest conservation within protected areas, the FD does not consistently share information on the status of natural forests with potential NGO, private sector and community partners. Many projects that support forest management and conservation activities have inventory and monitoring components measuring the status of natural forests, but these information resources are rarely integrated or even accessible to other projects.
- NGOs and CBOs working in and around forested areas have been recruited to assist social and community forestry initiatives either directly or in collaboration with the Forest Department. However there have been few successful NGO initiatives in forest conservation and biodiversity protection within forest protected areas, especially those that are built on a presumption of collaboration with the Forest Department. The NGOs, while skilled at community organization and developing capacities for communities to undertake income generating activities, often do not have the technical skills to work with communities on forest management issues. There is even less NGO understanding and experience as to how community partners might contribute toward forest biodiversity protection.
- Stakeholders often have limited awareness of the significance of the sustainable use of forest resources and the conservation of remaining natural forests. There are environmental organizations, NGOs and universities with the technical and awareness building skills that can undertake activities, collect information and develop programs to raise public awareness of the importance of forest conservation. In the past, these public awareness programs have been less effective than they might be because: they concentrate mainly on awareness of the literate and educated public who can "afford" to actively promote forest conservation; the programs do not always develop alternatives for those who presently depend on forest resources for their livelihoods; and at times the methods are to highlight the activities that undermine forest conservation by one or more of the public, private and community stakeholders, creating further tension and misunderstanding between potential partners in forest conservation.

Addressing all these issues makes the task of the Arannayk Foundation more challenging and a substantial period of time will be required for their resolution. Developing effective public, NGO and other private sector organization partnerships will undoubtedly have highly significant positive impacts for forest conservation and biodiversity protection.

A4. Arannayk Foundation Results Framework

The Chemonics team believes that the following results framework can guide the long- term vision and short-term implementation of the Arannayk Foundation over the coming years.

Strategic Objective: Conservation and management of tropical forest and biodiversity resources improved

- IR 1. The Arannayk Foundation established as a viable going concern.
- IR 2. Relationships with and Public-Private Partnerships among key stakeholders facilitated.
- IR 3. Forest conservation and biodiversity policy dialog and reform initiated.
- IR 4. Promising sites for forest and biodiversity conservation interventions selected.
- IR 5. Collection and exchange of information on natural forest and biodiversity resource status facilitated.
- IR 6. AF public awareness strategy initiated.

The first objective is to establish AF as a going concern so that it establishes institutional credibility and can attract adequate financial resources to sustain its program, whether through an endowment fund or other means. It also must establish relationships/strategic partnerships with key stakeholders to begin the process of developing Public-Private Partnerships. For the most part, these partnerships will be between various AF partners and not necessarily with AF per se, therefore the role of the AF is to facilitate their establishment among its partners. AF will work with these same partners to address policy issues that impact local communities participating in forest conservation activities, facilitating a dialog among stakeholders that will hopefully lead to reform. The Chemonics team recommends that over the long-term the AF develop a range of additional activities that facilitate forest and biodiversity conservation, including:

- Inventory and assessment of tropical forests and their biodiversity, with a program of regular and systematic monitoring of remaining natural forest patches throughout Bangladesh.
- Selection of sites where forest and biodiversity conservation activities can have a significant impact and produce results quickly.
- Facilitating further development and integration of data bases related to tropical forests and their biodiversity and measures to ensure they are updated and openly available for use by all levels and types of stakeholders.

- Development of successful and operationally-proven models of community management of natural forest conservation/regeneration, involving public-private partnerships between the Forest Department and other government agencies, NGOs and private sector enterprises, as well as local forest communities.
- Facilitating capacity development of major NGOs to become specialist partners of local NGOs, communities and community based organizations (CBOs) in natural forest conservation/regeneration and biodiversity protection activities.
- A program of local stakeholder and broader public awareness programs to promote understanding and support and encourage public participation in forest conservation and biodiversity protection programs.

B. Proposed Short-Term Strategy for the Arannayk Foundation

As mentioned earlier, the Arannayk Foundation debt relief funding of \$7 million over 19 years is not sufficient to establish an endowment to permanently fund AF operations. It is hoped and expected that as soon as the Arannayk Foundation had formal legal status, the Board will be able to initiate a successful search for additional funding from the private sector, other donors (local and international) and other sources. It is also expected that even if large contributions to an endowment fund were not quickly forthcoming, that potential contributors would want to use an established foundation like the AF to manage funding for community level activities. As the AF has not achieve legal status and other contributions have not yet materialized, it would appear risky to propose an ambitious long-term strategy that would require funding which is not presently available. Rather, it seems more appropriate to propose a strategy for the next two or three years with more modest strategic interventions, which can potentially be financed if necessary, from the debt relief funding. The AF Board would presumably use this period to seek other funds and to establish an institutional modality to attract and accept such funding. Set up and operating costs and a few small grants will largely expend the debt relief funding available over the first few years. Unless additional support becomes available to the AF, remaining funding available to establish an endowment fund may be very limited.

As mentioned above, the proposed results framework with six major objectives or “intermediate results” inform the proposed short-term implementation strategy for the AF. These six results provide both a starting place and a means to initiate and contribute to the long-term strategy. The six intermediate results and the respective Sections of the Strategy where they are addressed are:

- Section III: The Arannayk Foundation established as a viable going concern.
- Section IV: Relationships with and Public-Private Partnerships among key stakeholders facilitated.
- Section V: Forest conservation and biodiversity policy dialog and reform initiated.
- Section VI: Promising sites for forest and biodiversity conservation interventions selected.
- Section VII: Collection and exchange of information on natural forest and biodiversity resource status facilitated.

- Section VIII: AF public awareness strategy initiated.

Based on these objectives, some of the types of activities that the AF is likely to fund and facilitate, which are addressed in the text include:

1. Assessment of the location and extent of remaining forest patches, utilizing recent satellite imagery
2. Development of an uneven-aged harvest model for long-rotation plantation management, including replacement of exotics with indigenous species
3. Development and use of wildlife habitat suitability index (HSI) models for baseline evaluation, change-tracking and management of forest habitats
4. Biodiversity baseline surveys and monitoring in priority forest conservation areas
5. Development, integration and networking of databases related to tropical forests and forest biodiversity, and provision of access to data by all levels and types of stakeholders
6. Analysis of forest policy issues with a focus on forest conservation
7. Legal issues in forest conservation, possibly including development and provision of paralegal services and legal aid to forest communities, and mounting test cases regarding community ownership and use of forest resources
8. Development and trial application of a model for forest restoration using framework tree species
9. Management of buffer zones or sustainable use zones adjacent to or within protected areas/forest patches (including management of shifting cultivation adjacent to intact forest areas)
10. Development and implementation of interpretive programs and facilities in one or more protected area(s)
11. Environmental education and awareness development
12. Private sector conservation, including management or co-management of conservation forests by NGOs/CBOs, and forest conservation on tea estates or other leasehold or private lands.

SECTION III

Intermediate Result 1: The Arannayk Foundation Established as a Viable Going Concern

A. Rationale

The most important initial objective of the Arannayk Foundation is to establish itself as a going concern. It will take up much of the energy and activity of the Board and AF staff during the first year of operations (i.e. from the time the AF becomes a legal entity registered as a non-profit organization under the Companies Act of Bangladesh).

The debt reduction funds to be provided by the U.S. Government are the only confirmed source of funding for the AF. These funds are not sufficient to serve as a permanent endowment and if invested would generate too little income to allow the AF to set up and become fully functional. Yet becoming fully operational, establishing credibility and a track record of success, seems to be the most likely way to attract additional funding. The Chemonics team, therefore, assumes that over the first three to five years, the AF will spend a significant portion of the debt reduction funds directly on set up, operating costs and a few small grants, rather than attempting to operate as an institution with a permanent endowment fund. During this period, the AF objective will be to become operational, establish credibility and use its successful performance to attract sufficient additional funding, so that the AF can establish a permanent endowment fund. To attract these additional funds, the AF activities in the first 3 to 5 years of operation need to be demonstrably successful.

To score some initial successes, the AF must move forward as soon as possible to full operational status and identify, fund and implement promising forest and biodiversity conservation activities. A long start-up might cause significant funding to be used in set-up, administrative and/or preparatory activities (e.g. such as academic research studies), that may in time be very valuable but in the short-term do not demonstrate the effectiveness of the foundation funding mechanism. Initial interventions can be small but they must be strategic to demonstrate successful activities and to generate interest and excitement about potential new approaches to forest conservation.

B. Establishing the AF as a Viable Concern

No action to develop the AF can be taken until the Foundation is a formally registered entity. The U.S. Government needs to finalize the development of the Memorandum of Association of the foundation as quickly as possible so that the MOEF for the Government of Bangladesh can register the foundation as a not-for-profit organization under the Companies Act of 1994. Only then can the first tranche of debt relief funds be released to the foundation and its Board of Directors begin to implement forest and biodiversity conservation programs. Until funds are available the Board can only prepare for its role: no decisions can be made and no activities can be initiated.

In developing an overall strategy to establish the AF as a viable going concern the AF Board is going to have to rely heavily on its own resources. It will be critical to ensure that the Board meets regularly and frequently during the start-up phase, both so that actions can be taken to expedite the development of the Foundation and so that some consensus and trust can be developed among the Government ex-officio and NGO nominated members of the Board. The proposed public-private partnerships to be promoted by the AF need to be patently mirrored in the Board itself and the attitudes of members toward each other.

Even if the Board can meet relatively frequently in the early stages, it will be essential to hire senior staff to actually run the Foundation on a day-to-day basis. There are a wide variety of concerns and other pressing commitments that inhibit the AF Board members, especially the members selected from the NGO sector nominations from giving full attention to the AF. There is no staff – Executive Director, technical, administrative and support staff - for the AF to facilitate the activities of the Board. The Board members cannot be expected to make AF an operational entity themselves. They will receive no remuneration for their work and Board members have many other roles and responsibilities pressing on their time. The AF will have to rely on high-level professional and administrative leadership and staff to become a going concern.

The AF needs an active and articulate “champion” with status and credibility with both the Government and NGO stakeholders, to promote its role and defend it against stakeholders, particularly stakeholders with interests in continuing to use natural forests for production purposes rather than conserving the forests and protecting biodiversity. A senior figure should be selected as Executive Director to play this role as the AF “champion.” However, the formal process of selecting and hiring could take quite some time to complete. It is recommended that as soon as the AF is a registered legal entity, the AF Board should move to commit resources to the appointment of an Executive Director or a senior Bangladeshi Adviser to be appointed on an interim basis. The Board should establish as quickly as possible a simple selection process for the interim appointment and determine if and under what procedures the appointee might be considered as a candidate when the formal selection process for the Executive Director is launched.

The Forest Department relies heavily on outside funding to maintain much of its core state forest management and production forest programs and its presently more limited forest conservation and biodiversity protection activities. Apart from the ADB financed (and partially grant funded) Sundarbans Biodiversity Conservation Project, there are limited prospects of other substantial funding sources (especially grant funding rather than loan financing) in support of Forest Department activities. Thus, for the AF also, there is little potential in the short-term of receiving core funding from multilateral agencies to establish the foundation as a viable going concern.

Bilateral funding agencies and international NGOs have supported local participation in social and community forestry projects, often as part of broader programs to support and develop social services infrastructure and income generation projects. These donors may be willing to consider funding project type activities proposed by the Arannayk Foundation and using the AF as a means to channel funding to the activities of local NGOs and CBOs. However, they are unlikely

to provide core funding to help the AF establish itself as a going concern, at least until after the AF has proven successful in facilitating public-private partnership programs.

Commercial companies may also donate either to the Endowment Fund or in support of start-up administration and operation of the Arannayk Foundation itself. Setting up the office and financial and administrative systems will be particularly important and costly during the first six months of AF operations. It may be possible to encourage a major company –Bangladeshi company or MNC - to donate the time and experience of their own team of administrators in setting up new offices and the administrative systems.

Some private companies, both domestic Bangladeshi and multi-national companies, wishing to improve their image as environmentally friendly partners, have already indicated that there might be some interest in providing administrative start-up support or funds to meet administrative costs. Even so, it will be necessary for the AF to aggressively pursue possible private sector organizations to market the AF as a good place for them to donate funding and resources.

Pursuit of private sector support should be an important early priority for the AF Executive Director. This is likely to be particularly effective if the Executive Director (or the interim Senior Adviser) is drawn from the private sector. The Executive Director will enhance the awareness and image of the AF and of himself as its senior officer. Even if not initially successful, companies may respond more positively if they are approached again after the AF has established a successful track record of promoting public–private partnerships in forest conservation and protection. In return for the support to the AF start-up and administrative costs most private corporations would receive an enhanced corporate image and public awareness that the company supports the laudable forest and biodiversity conservation objectives of the AF.

Among the options for seeking project support, the AF should seek support from USAID. USAID’s Strategic Objective 6 (SO6) targets activities to “strengthen tropical forest resources and forest management practices at the community level.” There is a strategic opportunity to complement funding to establish the Arannayk Foundation with the use of project funding to encourage the development of effective public-private partnerships between the FD and NGOs. The project funding would accelerate the process of establishing the AF on a sustainable basis and the AF would enhance prospects of sustaining forest resource management once project funding is exhausted.

C. Recommended Key Actions

- USG and the GOB should complete the registration of the AF as a non-profit organization under the Companies Act as soon as possible.
- Immediately after registration of the AF as a not-for-profit organization under the Company’s Act, the Board should set out its long run financial plan or “target” and determine what shorter term pursuit of funding and technical/administrative support may be pursued, so that the Foundation becomes financially sustainable sooner rather than later.

- As soon as the AF is a registered legal entity, the AF Board should move to commit resources to the appointment of an Executive Director to be appointed on an interim basis.
- The AF Executive Director, or if one is not selected initially, the temporary senior adviser to the foundation, should be encouraged to initiate discussions with potential private sector partners who might support the AF.
- The AF Board and interim Senior Adviser/ Executive Director should hire key technical and administrative staff on a temporary basis pending confirmation upon completion of recruitment and hiring of the permanent Executive Director.
- The AF Board should actively seek donor (public and private) support for setting up AF financial and administrative systems and to cover administrative and organization operating costs for the first 3-5 years.
- The AF Board should ask donors and potential private sector contributors to consider project funding to support tropical forest conservation and sustainable management of production forests. Project designs should include formal linkages to the AF and funding to provide AF an opportunity to become a financially sustainable entity with an Endowment Fund to finance operations. If the AF foundation is established as a going concern it may be able to take on the role of sustaining efforts to conserve and sustainably manage forest areas after the completion of any individual project.

SECTION IV

Intermediate Result 2: Relationships With and Public-Private Partnerships among Key Stakeholders Facilitated

The potential strength of the Arannayk Foundation is that its activities provide an opportunity for public sector government agencies to form public-private partnerships with NGOs and private sector organizations on a long-term sustainable program to conserve remaining forests and their biodiversity.

NGOs and CBOs have demonstrated capacity to work with, help organize and build the capacity of local communities and other stakeholders to help insure effective project implementation. In some cases, private sector investments and joint ventures may provide the means to develop local capacity and generate income for the local population. Harnessing these potential contributions of the NGOs, CBOs and private sector as well as the technical capacity of the Forest Department in public-private partnerships greatly improves the likelihood of achieving success in forest conservation and sustainable production activities.

A key element in the short-term strategy of the AF is that it should develop proven and effective public-NGO and other private sector participatory partnerships and mechanisms to address forest conservation and biodiversity protection issues. The vision is that these public-private sector and NGO partnerships will be more effective than present project and program funding for forest conservation and biodiversity protection under the present regime of Forest Department enforcement of forest protected area exclusion and prohibited activity laws.

At present, forest conservation and biodiversity protection activities are the responsibility of government under the authority of MOEF, and are implemented primarily by the Forest Department. However, past government initiatives have largely failed because both the development of forest conservation policies and projects to implement them have been carried out without the full understanding and collaboration of local stakeholders. To date, the active involvement of NGOs and private sector partners working with forest communities and stakeholders has been absent from most forest conservation initiatives in government controlled protected forest areas. Even where collaboration has been sought and enlisted, success has been limited because of flawed agreements with stakeholders and lack of capacity within government agencies to ensure their effective implementation. The following selected examples illustrate the range of problems involved:

- The ADB-funded Thana Banayan and Nursery Project (1987-95) developed participatory agroforestry and woodlot plantations on encroached land and degraded *sal* forest areas in and around Madhupur National Park, but ultimately resulted in animosity and distrust between FD and participants because harvest agreements and the agreed schedule of benefits-sharing failed to be upheld. The mature plantations have now virtually all been felled illegally. The subsequent Forestry Sector Project

(see below) viewed the continuing animosity and distrust arising from this situation as a very serious problem, as it increases the difficulty of agreeing on and implementing new participatory approaches to forest management and conservation.

- The World Bank-funded Forest Resources Conservation Project prepared generic, facilities development oriented management plans for most of Bangladesh's protected areas (published 1997), but these apparently did not involve any stakeholder consultation, with the exception of Forest Department staff, and failed to address any social or community-related issues. Although these plans have been officially approved by Forest Department they have not been implemented, and it is the team's understanding that implementation is no longer planned by FD.
- The ADB-funded Forestry Sector Project (1998-2002) prepared comprehensive, five year management plans for Lawachara National Park and Rema-Kalenga Wildlife Sanctuary, and two year management action plans for five other areas. In line with FSP's participatory approach, these plans were prepared on the basis of wide stakeholder consultation, and were based on joint implementation by government, NGOs and affected communities. However, it is the team's understanding that timely implementation of these plans by FD is very unlikely.
- An ongoing GoB-funded project has initiated the construction of a 2 meter high boundary wall around 1200 ha of remnant *sal* forest in Madhupur National Park, and includes plans for development of a zoo within this area. The intent of the wall is to exclude all extractive use. This is solely a FD initiative undertaken without consultation with local communities, and it is unclear whether remaining *sal* forest outside of the walled area will continue to be available for meaningful participatory management that includes traditional users. The FSP management action plan has raised the concern that "there is a very real danger that with construction of the wall the included area will be viewed as "the national park", with the remaining forest outside being treated as a free resource; this would lead to rapid loss of forest cover remaining outside of the wall unless FD redoubles its management and forest protection efforts." In any case, at the time of the Mission's visit the wall remained incomplete and work had been halted due to lack of financial resources.

Environmental and policy NGOs, universities and other private sector interests have often been critical of government led initiatives in forest conservation on state owned protected areas. NGOs have been involved in only select pilot activities to work in partnership with government agencies. The tension between public agencies and civil society has added to the challenge of developing private-public partnerships for forest conservation and biodiversity protection.

Development of private forests by private sector enterprises on leased lands, and by rural communities engaged in social and community forestry (often with the leadership and involvement of NGOs) has expanded during the same period that forest resources have declined. Many of these initiatives have been undertaken in areas near state owned forests. Despite the proximity of the private forests, there have been few successful NGO or other private sector

partnerships with the Forest Department or other government agencies for forest conservation and biodiversity protection inside state owned forest protected areas.

A key task for the AF is to strengthen its own relationships with the key government, NGO and other private sector organizations involved in forest conservation. These AF relationships are necessary to allow the AF to facilitate public-private partnerships in forest conservation among these organizations.

There are many other government agencies, local NGOs, community based organizations (CBOs) and private sector stakeholders at the local level that may become involved, and influence the success of key public-private partnership initiatives. It is important for AF to establish working relationships with these agencies and organizations at a national level or as particular activities warrant.

A. Relationships Strengthened with Key Government Agencies

A1. The Ministry of Environment and Forest (MOEF)

Rationale

The Joint Secretary (Development) of the Ministry of Environment and Forest is ex-officio the Government of Bangladesh representative on the Board of the AF. The Ministry is responsible for providing policy and program advice and direction to the AF from the perspective of the GOB. The MOEF will also coordinate the relationships between the AF and the Forest Department and other government agencies that constitute the MOEF (DOE, BFRI and The National Herbarium) and with other GOB Ministries and Departments.

It is essential that the relationship between the AF and the MOEF go well beyond the formal responsibility of the Joint Secretary (Development) to be the ex-officio representative on the AF Board. The MOEF must ensure that there is collaboration rather than competitiveness on issues of inter-departmental strategy and implementation of forest conservation and biodiversity protection initiatives. Within MOEF, it is important that senior staff understands the status of natural forests and their biodiversity and the real impacts of present policies and field implementation of projects related to conserving forest biodiversity. MOEF must take leadership on policy issues impacting forest conservation and biodiversity protection.

Initiatives undertaken by agency partners can be complemented or compromised by actions of government agencies outside the MOEF. A key responsibility of the MOEF is to ensure that forest conservation and biodiversity issues are given priority by the government as a whole and addressed by these outside Ministries and departments.

The role of NGOs working in collaboration with government agencies is always controversial in Bangladesh, and particularly so at the present time. For the AF to achieve its long-term objectives, MOEF needs to fully commit itself to advocate a strategy to develop effective public-private sector partnerships addressing forest conservation.

Modalities for Developing MOEF as a Key Partner

The capacities of MOEF senior staff need to be developed so that they are aware of the significance of natural forest conservation and biodiversity protection and of policies and programs elsewhere that have been adopted and implemented successfully to achieve these objectives. Seminar workshops on the issues and study tours to observe successful initiatives elsewhere in the Asian world relevant to Bangladesh (particularly where they are based on successful public–private sector partnerships) are both likely to have a positive influence on the future roles MOEF can play in helping the AF achieve its long-term objectives.

The leadership role of MOEF as the key agency for the development of policy related to forest conservation needs to be directly supported by the AF. The MOEF Secretary, or if not available the Joint Secretary (Development), should be asked to take on the leadership role of the AF Policy Advisory Committee (see Section V below for specific policy issues that are likely to be most important). MOEF should be fully supported and given incentives to make this a priority activity. This can be done by background research studies, preparation of briefing notes for MOEF officials, and development of a data base on field sites where under the present policy and implementation regimes either forest conservation is not working as well as it should or successful initiatives are underway. This will ensure that the position of MOEF in policy debates and decision-making with respect to programs and project implementation is based on a realistic understanding of the field status of natural forests and their biodiversity, and efforts to conserve and protect them.

Wherever possible, the support to MOEF should involve key NGO and private sector partners that were identified for their capacities to help the AF develop policies for more effective forest conservation and biodiversity protection.

The national forest conservation and biodiversity protection public awareness strategy of the AF should also highlight positive steps taken by MOEF in leading and coordinating government agencies in collaboration with NGO and other private sector partners.

Recommended Actions

- It is recommended that the AF Board establish and support a Policy Advisory Committee and ask the Secretary of the MOEF (or if not available, his Joint Secretary (Development)) to head this committee.
- AF should support capacity building and field exposure, including opportunities to train for, observe and work on forest conservation policy issues for a wide range of MOEF senior staff, in addition to the Joint Secretary (Development) assigned to the AF Board.
- AF support for developing the key role of MOEF should be carried out in collaboration with NGO and other private sector partners to demonstrate the importance of and facilitate public-private partnerships in forest conservation.

A2. The Forest Department

Rationale

The Forest Department is responsible for the management, use and control of all classified state forest lands, including the responsibility for conserving the forests and protecting their wildlife in declared protected areas including: Reserve Forests (RF); Wildlife Sanctuaries (WS); National Parks (NP) and Game Reserves. These protected areas are the major locations of residual natural forests and the richest sources of tropical forest biodiversity to be protected.

Most forest communities provide labor, guard and oversight activities in protected areas in exchange for privileges to collect or pursue agricultural and other income generating activities on an informal basis. These arrangements clearly provide the potential for public-private partnership activities, if agreements are worked out and the community partners are trained to develop capacities for these types of activities.

Forest Department officers and staff, especially younger and relatively recently trained officers assigned to the field, have the skills and training to address technical issues of forest conservation. However, Forest Department programs focus largely on forest production and at times include clear-cutting natural forest, even in protected forest areas, to make room for plantation production of exotic species. This practice continues even though establishment of single species and/or even age plantations, cutting back of undergrowth, planting and subsequent harvesting of cane and bamboo may all compromise remaining natural forest patches and their biodiversity.

The Forest Department staff is the major source of technical expertise in forest production and management. It is essential that FD be an active partner in the planning and provision of technical advice and implementation of management plans for Unclassified State Forests and areas contiguous with state forests to be placed under community control and management. This would support potential AF efforts to regenerate natural forests and/or manage them to discourage encroachment and degradation of protected area natural forest patches.

Given its strong production orientation, the FD has limited staff assigned to and limited success in the control illegal cutting of trees, collection of fuel wood and disturbance of flora and fauna by forest communities and commercial interests in state forests and surrounding areas. The production bias also compromises FD credibility as conservators of the forests and their biodiversity in the public eye. Existing tensions with NGOs and local communities tends to make the FD defensive about proposals to work in collaboration with NGOs and local communities on forest conservation. The role of FD staff as enforcers of the forest laws is not conducive to having that same staff promote and serve as collaborators in joint management of forest protected areas and may compromise the development of the FD relationships with pilot activities involving public-private partnerships at the local level.

Modalities to Make the FD a Key Partner

The most important element in securing the cooperation of the FD as a key AF partner is to persuade the Chief Conservator of Forests (CCF) that the AF does not represent a threat to the

FD and its reputation. The AF provides an opportunity to enhance FD credibility in forest conservation and the possibility of generating funding from bilateral and multilateral government agencies, private sector companies and international NGOs that would not otherwise be available for forest activities. For AF long-term objectives to be achieved, the FD must commit to the AF objectives and approaches to forest conservation involving public-private sector cooperation in forest conservation in and around state forest lands. Only then will local FD field staff be willing to commit themselves to new partnerships with NGOs and other private sector organizations in implementing community partnerships and other pilot initiatives at the local level.

The AF should aim to jointly develop the capacities of FD staff, local NGOs and CBOs to prepare for joint community and FD management of buffer zones and designated sustainable use zones of forest protected areas. This will help to secure the role of the FD at the local level when proposals are prepared and pilot co-management schemes for forest conservation are implemented. Forest Department technical expertise and protected forest area field officers should be invited to serve as technical experts and resources in AF training to develop local NGO and CBO capacities to work on forest conservation and biodiversity issues (see the report on Curriculum Development and Training of NGOs for recommended technical training). Local FD staff should be invited to participate at AF training activities designed to train local NGOs and CBOs to help forest communities and stakeholders to engage in co-management of buffer zones surrounding protected areas and designated sustainable use zones within forest protected areas. This would allow the FD to develop capacities and experience working with local NGOs and forest communities.

Arrangements should be made to involve FD staff in providing their expertise and experience in managing forest protected areas, wildlife management, and inventory monitoring and assessment to AF capacity building courses. These courses will target NGOs who are to be involved in pilot forest conservation and other activities of the AF. The seminars and workshops should be designed so that the practical experience of the FD protected area managers and staff is fully utilized and addressed when alternative management practices are being considered.

The difficult role of the FD protected area field staff in enforcing laws and pursuing forest cases needs to be recognized by AF. Assistance should be provided to help resolve the backlog of outstanding cases. All proposed partners, including FD local staff, in co-management of forest conservation in protected areas initiatives should be provided legal assistance to prevent harassment by powerful stakeholders or others with vested interests in the failure of such initiatives.

Key Recommended Actions to Make FD a Key Partner

- The AF should establish a Forest Conservation Technical Advisory Committee and ask the CCF to chair this committee. The AF should support this committee and its chairman by providing funding to allow the FD and other forest management conservation, wildlife and other technical specialists to provide the AF Board with sound technical advice.

- It is recommended that the CCF should also be included in the AF Policy Advisory Committee (recommended to be headed by the Secretary of MOEF).
- Capacity building of NGOs, CBOs and local communities to engage in pilot activities in forest conservation involving public-private sector participation, should involve FD staff as resource persons and as participants, as appropriate, according to the type of capacity building.
- The AF should support the use of technical expertise of the FD to help private sector natural forests to be developed on leased forest lands.
- Wherever pilot activities in forest conservation are considered at the local level AF should establish local implementation committees. This might include public–private partnerships for resolution of forest legal cases, development of protected area interpretive facilities and pilot activities for co-management of forests in buffer zones and sustainable use zones of protected areas. The FD should be one of the co-chairs of these local committees (along with an appropriate co-chair from among the private sector partners).

A3. Bangladesh Forest Research Institute (BFRI)

Rationale

BFRI, based in Chittagong, is a forest research agency with a broad range of responsibilities under the supervision of MOEF. Key activities include their research nurseries and pilot plantations located in or close to many of the state forest protected areas. Current research programs at BFRI research sites emphasize the development and regeneration of indigenous forest tree species. BFRI also has considerable technical expertise and capacity on tropical forest resource assessment and biodiversity status based on the identification of key indicator species, Habitat Suitability Indices and forest surveys. BFRI has staff, infrastructure facilities, sections of state forest allocated for their research and nursery programs in many of the state forest protected areas.

BFRI has limited funding in comparison to the Forest Department, but also fewer responsibilities with respect to the management and protection of state forests. At the field level BFRI is an ideal partner for AF led initiatives requiring technical forestry inputs to complement public–private sector partnership initiatives.

Modalities for Developing BFRI as a Key Partner

BFRI should be encouraged to engage in AF activities, with assistance from MOEF. The technical expertise of BFRI should be brought into both the AF Forest Conservation Technical Advisory Committee and local implementation committees.

BFRI should be contracted to work on pilot programs, to which it could orient some of its regular program commitments that build on BFRI staff technical strengths in forest botany,

development of indigenous tree species, field tree nursery programs, natural forest and biodiversity assessment, and monitoring and evaluation capacities.

Training and program funding incentives should be given to BFRI to enable and encourage them to undertake more activities involving the collaboration of local communities and CBOs so that they can more fully embody the AF strategy of promoting public-private partnerships.

Recommended Key Actions

- The Director of BFRI or a senior technical staff member with broad experience should be invited to participate in the Forest Conservation Technical Advisory Committee that will advise the AF Board on technical issues.
- The AF should engage the BFRI to play a major role in assessing, monitoring and evaluating natural forest patches and their biodiversity status in protected area sites.
- BFRI should be encouraged to involve the National Herbarium in identifying and classifying species, especially non-tree flora found during assessment visits.
- BFRI should be provided training and orientation to develop their capacities to initiate and manage pilot long-term participatory monitoring systems of natural forest status and biodiversity, involving local forest communities.
- BFRI would be the ideal partner to develop nursery stock of indigenous tree species found in natural forest remnant patches if a pilot program in forest restoration using framework tree species is initiated to promote forest regeneration. Training and support for BFRI should be provided so that they can work with forest communities in the participatory establishment of regenerated natural forest.
- BFRI infrastructure, local staff and facilities inside national parks and other protected areas should be considered as resources for development of forest conservation and visitor focused biodiversity interpretive programs.

A4. The Department of Environment (DOE)

Rationale

The DOE is an implementing department of the MOEF and a key partner in forest policy dialogue and reform. The DOE has protection of natural resource biodiversity as part of its mandate and responsibilities. Ecologically critical areas where biodiversity is threatened can be declared as such by the DOE and the department may take over their management and protection. Even though this could apply to state forest lands, these powers have never been invoked during the short-life of the department. The DOE has however recently declared a number of ecologically critical areas. They see their role in protecting the forests and protecting biodiversity as catalytic and policy oriented rather than related to direct management of natural forest resources.

The GEF Coastal Biodiversity Protection Project (that includes coverage of forested coastal belt areas) to be implemented by the DOE is on the point of becoming operational. The Bangladesh Environmental Management Project (BEMP), funded by CIDA, is finalizing a Strategic Management Plan for the DOE. It is anticipated that the GEF initiative and the strategic plan, once approved, may lead to a more direct role for the DOE in the inventory and monitoring of natural resources and their biodiversity.

At present, the DOE does not have either the technical capacity among its staff nor the human resources to expand its program of activities to include protection of critical forest biodiversity. However, in the long-term the DOE could have an important complementary role to the work of the FD as a partner of the Arannayk Foundation.

The strategy presented here involves the blurring of the distinction between protected area state forests, where rules requiring exclusion of local populations are enforced, and the surrounding areas, where forest communities and commercial interests are free to exploit the natural resources and environment. De facto or formal legally designated “buffer” zones adjacent to state forest protected areas may well constrain what natural resource exploitation and land use activities can be pursued. In contrast, it is recommended that policy change be sought to allow some collection and gathering activities by communities from the buffer zones inside the state forest protected areas, where designated as “sustainable use zones.”

This is the first major step toward a broader natural resource management strategy that recognizes the indirect effects of forest resource degradation and management on upper watershed water retention, downstream run-off and siltation damage, draw down of groundwater levels, and adulteration of water supplies and water bodies critical for their fishery resources. In the long-term, successful Arannayk Foundation activities could contribute to a sustainable watershed management approach. (Note: The Ail Haor watershed It is replenished by water originating from the Lawachara NP, Satchuri RF, Rema-Kalenga WS, and the surrounding tea plantations near Srimangal in Syhlet Division).

Modalities for Involving DOE as an AF Partner

In the short-term the AF could play an important role in developing the capacity of key senior officials of the DOE with responsibilities for the natural resource sector. With the approval and support of the MOEF, this could be achieved by including senior DOE officials responsible for the natural resource sector on the AF Policy Advisory Committee and Forest Conservation Technical Advisory Committee. The DOE staff could be invited to participate in training and capacity development activities to help develop public-private sector partnerships with local communities, even if in the short-term there is likely to be little direct collaboration in AF interventions at the local level.

In the longer-term, once DOE capacities have been developed and district level staff is in place, the DOE could play an important complementary role to the FD and other MOEF agencies. The DOE role would be particularly important with respect to formulating forest policy in the context of natural resource and watershed management policy and the monitoring of forest area natural and environmental resources, including key indicator wildlife species.

Key Recommendations

- Initially AF should focus its attention and key partnerships with government agencies within MOEF on the FD and the BFRI rather than the DOE.
- The AF Board should recommend to the MOEF and seek ministry approval for the DOE to be involved as a partner of AF in the activities as listed below.
- The DOE should be consulted and kept informed of AF activities and invited to participate in policy and technical advisory committees. The DOE representatives would be expected to contribute input drawn from their experience of developing criteria, and declaring and managing ecologically critical areas.
- The DOE should be invited to join field site visits and study tours to develop capacity of officials to understand field contexts of sustainable resource and management using public-private partnerships and to observe successful partnerships elsewhere in Asia.
- Later in the life of the AF, consideration should be given to expanding the role of the DOE as an active operational partner of the AF, especially if pursuing forest conservation and biodiversity protection in the broader context of sustainable ecosystem or watershed natural resource and environmental management.

A5. The National Herbarium

Rationale

The National Herbarium, a research institution constituted under the MOEF, is staffed with taxonomic biologists. The National Herbarium has a minor but potentially important role in helping identify plant species collected during forest inventories and assessments. BFRI is capable of identifying and assessing the significance of tree species but the National Herbarium is more experienced in identifying and assessing the biodiversity significance of flora in undergrowth of natural forest areas.

Modality for involving the National Herbarium as an AF Partner

The National Herbarium should be asked to support the roles of BFRI and other partners engaged in inventories and assessments of forested protected areas and other natural forest remnants. The National Herbarium already has experience working with BFRI assessment teams. The work of these two institutions may be critical in establishing the biodiversity values of remaining natural forests and enable the AF and partners to make informed choices as to where to initiate pilot activities.

Recommended Actions

- The National Herbarium should be included in teams for the systematic assessment of biodiversity values of protected area state forests, and other areas (USF, Khas land and private forests) being considered by AF for conservation or regeneration of natural forests.
- The National Herbarium should be invited to identify and classify botanical species casually found (i.e. not in the course of formal assessments) in the forests and contribute to laboratory assessment of their biodiversity value.

A6. Ministry of Land

Rationale

The decision to recommend that AF examine all remaining natural forest patches, including the Unclassified State Forests (USFs) under the control of Ministry of Land and the Deputy Commissioners at the district level, makes it necessary that the AF establish working relationships with the Ministry at the national level and with Deputy Commissioners in districts where USF areas are being considered for selection for natural forest conservation and regeneration initiatives.

Natural forests in USF areas are not as well protected legally as state forests designated as protected areas. However, forest lease agreements for USF areas made with private enterprises in some instances lead to natural forests remaining undisturbed or being managed on a sustainable basis. This may be the case in remote inaccessible areas (now very few left) or where the enterprises taking on the leases to USF lands have more land than they need for enterprise development. In the latter case the commercial enterprises manage their estates on a sustainable use basis in the belief and expectation that in fact they hold the land in perpetuity. Unfortunately, in the Chittagong Hill Tracts where the most extensive USF areas are located, this is typically not the case. However, in the northeast and along northern borders with Eastern India there indeed may be natural forest remnants in USF areas, significant enough and suitable for forest conservation activities.

Land and land tenure issues are extremely complex in Bangladesh, particularly with respect to USF leases and allocations. Land transactions and disputes are common and fraught with legal delays and convoluted legal proceedings. This could represent a challenge for including USF area activities under AF auspices.

Modalities for Involving the Ministry of Land as an AF Partner

A senior official of the Ministry of Lands with the responsibility and experience in handling USF land allocations, leases and management should be invited by the MOEF to participate in the AF Policy Advisory Board.

The Ministry should be asked to provide as much secondary data and information (both qualitative and quantitative) on the areas involved, extent and status of remaining forest cover

and whether they are suitable for AF forest conservation activities. Potentially promising sites should be included in the forest surveys and field assessments. Deputy Commissioners and staff with responsibility for selected USF areas should be involved either directly or through district level AF implementation committees, if already established.

Agreements as to how to resolve existing USF land disputes and cases and measures to prevent emergence of new disputes and land cases will need to be worked out prior to decisions to include a specific USF area as a pilot area for AF activities.

Recommended Key Actions

- A senior Ministry of Land official should be invited to participate in the AF Policy Advisory Committee.
- The Ministry of Land should be asked to help identify USF lands and leased areas with natural forest remnants suitable for possible inclusion as sites for forest conservation or regeneration. Selected areas should be included in formal forest surveys and biodiversity assessment.
- Deputy Commissioners and staff with responsibility for selected USF areas should be asked to serve as advisers to the formal assessment team and then join the local level implementation committee if it is decided to initiate AF sponsored conservation activities on USF lands.

A7. Ministry of Tourism and Civil Aviation (MT&CA)

Rationale

The development of interpretive facilities and programs within NPs and other types of protected areas would promote eco-tourism. In turn, eco-tourism earnings could make a significant contribution to revenues and provide incentives to manage protected areas for their wildlife and biodiversity. Other tourist facilities outside the protected areas also have to be developed if substantial numbers of tourists are to visit, pay entrance fees and/or spend on goods and services provided by ancillary commercial enterprises. This would generate resources that could potentially help support activities in the protected areas. Working relationships with the tourism experts in the MT&CA are needed as a basis for a partnership that addresses eco-tourism development.

MT&CA tourism experts are also needed to help the AF negotiate mutually beneficial arrangements with commercial and eco-tourism tour operators and accommodation providers for visitors to national parks and wildlife sanctuaries using the interpretive facilities developed with AF-supported public-private partnerships. A potential weakness is that there are few tourism officials within MT&CA who are experts in the area of successfully promoting eco-tourism sites and use of interpretive facilities without compromising the environment that the tourists have come to visit and appreciate.

Modalities for Involving the MT&CA as an AF Partner

Involvement of MT&CA officials should be addressed in the local contexts of forest protected areas where interpretive facilities are being considered. They should be included in local implementation committees involving local public and private sector partners to be established by the AF.

It will be important to ensure that the proposed tourism officials to be associated with local implementation committee initiatives are well-versed in the special eco-tourism development issues. If this is not the case, AF should consider including proposed officials in environmental awareness training modules.

In addition, public officials, together with commercial tour operators, could be invited to participate in a study tour of successful eco-tourism sites where interpretive facilities help attract substantial numbers of tourists and a national workshop to develop guidelines for ecotourism development.

Key Recommended Actions

- The capacities of MT&CA tourism experts to address issues and design financially viable eco-tourism programs should be developed with AF assistance.
- MT&CA experts should be asked to help develop guidelines for eco-tourism development and support infrastructure for tourists in and around protected areas.
- MT&CA officials at the local level should be included in the local implementation committees wherever development or improvement of interpretive facilities are likely to be considered in national parks, wildlife sanctuaries or other protected areas open to public visits.
- MT&CA officials should be asked to assist the local partners to assess eco-tourism potential of the sites where local interpretive facilities development is being considered. They should also assess the availability, need for and commercial viability of complementary tourism facilities (e.g. tourist transportation and accommodation).

A8. Other Ministries and Departments

Ministry of Local Government, Rural Development and Cooperatives (MLGRDC)

Rationale

MLGRDC is responsible for coordination of local government affairs at the Union Parishad and municipal levels. From the perspective of some local government officials, protected area status for forest lands in their areas of jurisdiction constrains local economic development and limits potential for tax generation. Coordination will be needed with MLGRDC officials for specific AF field activities at the local level.

Ministry of Fisheries and Livestock (MFL)

Rationale

Coastal wetlands, deep-water haors, beels and watershed areas surrounding them, are significant sources of forest biodiversity. For example, the tropical forest remnants of protected areas close to the Indian border near Srimangal in Sylhet Division and the tea plantations around them are part of the watershed that drains into Hail Haor, one of the most important fresh water fisheries in Bangladesh. The rivers waterways and fisheries of the Sundarbans are an integrated component of the tropical mangrove forests and their biodiversity.

Many forest and rural communities located near protected forest areas and other state forests own cattle and/or small ruminants that are allowed to graze on open lands in and around their communities. Unless the grazing is well-controlled and animal numbers limited, it can compromise the undergrowth in the forests. Domestic animals are often in potential conflict with wildlife and the need to feed and protect their domestic animals compromises the commitment of their owners to protect the flora and fauna in the forests.

Modalities for Involving Other Government Agencies as AF Partners

The programs of other government agencies without a direct responsibility or stake in forest conservation or proposed activities of the AF may still impact or be affected by AF activities. It is proposed that local officials of such agencies be invited to join local implementation committees on an “as needed” basis. Only if systematic local policy or technical issues come up should central Ministry officers be asked to participate in AF Policy or Technical Advisory Committees, again on an “as needed” basis to address the specific policy or technical issues.

Key Recommended Actions

- Local officials of the MLGRDC, MLF and the two implementing departments (Department of Fisheries and the Livestock Department) should be included in the local committees responsible for implementation of AF sponsored activities.
- MFL or MLGRDC officials should be invited to participate in the AF policy and Technical Advisory Committees, as specific needs arise.

B. Relationships Strengthened and Partnerships Developed with Key Non-Governmental Organizations (NGOs)

B1. Rationale

The major rationale for the creation of the Arannayk Foundation is to create a funded organization that can facilitate the development of strategic partnerships of government agencies with NGOs and other private sector organizations, to undertake activities for forest conservation and biodiversity protection. It is presumed that these public-private partnerships will produce better results than activities that were managed by government agencies alone.

There are many NGOs in Bangladesh with a broad range of skills and interests in training and capacity building, primarily focused on CBOs and community groups. Far fewer NGOs have direct experience in community, social and agro-forestry or expertise in forest conservation and biodiversity protection. Many have ambitions to expand into new areas of work and their confidence in their general “people-skills” is undaunted by the specific technical challenges of forest conservation.

Based on their activities and competencies, NGOs and related organizations can be broadly classified into five categories (see the Curriculum for NGO Training in Conservation of Tropical Forest Biodiversity, Annex 1 (Training Needs Assessment, Tables 1-3):

1. Local NGOs and CBOs with the potential to facilitate the participation of forest communities and local stakeholders in co-management with the FD of forest conservation initiatives, in buffer zones surrounding protected forest areas and/or in designated sustainable use zones.
2. National level NGOs with substantial in-house capacity for the training of local NGOs and CBOs, enabling them to become effective partners in facilitating local public–private partnerships focused on forest conservation activities. Some of these national NGOs also have experience working on NGO-led social and community forestry projects and have technical forestry expertise on their staff.

3. Environmental NGOs, networks and coalitions, associated groups of environmentalists (e.g. bird-watchers), and universities¹ with technical expertise in environmental training, monitoring, assessment, management, data collection and analysis.
4. NGOs that play a major advocacy role, to influence public policy, raise awareness on the issues and educate the public concerning environmental issues that need to be addressed. There is a broad range of style, skills and expertise among these NGOs- from those NGOs that exclusively use the media to exhort particular positions to others that include skilled environmental public awareness and policy analysts and specialists on their staff.
5. Environmental and forest law NGOs could be included in the above category of advocacy and policy specialists, as they do play such roles. However, they are categorized separately because of the importance of dealing with the plethora of forest law constraints and issues that need to be resolved to make progress on new approaches to forest conservation in state owned or claimed protected forest areas. They also are separated because of their potential role in resolving the enormous number of outstanding litigations against forest community residents that compromise their participation in community partnerships with forest and environmental agencies.

B2. Modalities to Identify, Involve, and Develop Capacity of NGOs to be AF Partners

Current NGO capacities have been reviewed and identified in the Chemonics International report “Curriculum for NGO Training in Conservation of Tropical Forest Biodiversity (Annex 1: Training Needs Assessment). Modalities for developing the capacity of NGOs to be partners with AF are summarized in sections B2.1 to B2.5 below.

B2.1 Identify Major Types of Activities that the AF is Likely to Fund and Facilitate

The types of activities to be supported by AF are still being formulated. Moreover, the Foundation’s program is expected to evolve over time, making it impossible to determine definitively the types, scope and priority of activities that will be supported. This caveat notwithstanding, the main types of activities that are currently under discussion and that are considered most likely to be supported can be categorized as follows:

1. Assessment of the location and extent of remaining forest patches, utilizing recent satellite imagery.
2. Development of an uneven-aged harvest model for long-rotation plantation management, including replacement of exotics with indigenous species.

¹ It is recognized that universities, some of them publicly operated, are not usually included in the ranks of “NGOs.” They are included here because although they have technical expertise relevant to forest conservation and management they have been given only a few opportunities to partner with government agencies with the authority and funding to carry out forest conservation and biodiversity activities, just as is the case with the other more conventionally recognizable NGOs listed here.

3. Development and use of wildlife habitat suitability index (HSI) models for baseline evaluation, change-tracking and management of forest habitats.
4. Biodiversity baseline surveys and monitoring in priority forest conservation areas.
5. Development, integration and networking of databases related to tropical forests and forest biodiversity, and provision of access to data by all levels and types of stakeholders.
6. Analysis of forest policy issues with a focus on forest conservation.
7. Legal issues in forest conservation, possibly including development and provision of paralegal services and legal aid to forest communities, and mounting test cases regarding community ownership and use of forest resources.
8. Development and trial application of a model for forest restoration using framework tree species.
9. Management of buffer zones or sustainable use zones adjacent to or within protected areas/forest patches (including management of shifting cultivation adjacent to intact forest areas).
10. Development and implementation of interpretive programs and facilities in one or more protected area(s).
11. Environmental education and awareness development.
12. Private sector conservation, including management or co-management of conservation forests by NGOs/CBOs, and forest conservation on tea estates or other leasehold or private lands.

One of the first tasks of the Foundation will be to prioritize these activities to focus on those having the greatest strategic impact, those being the most feasible under prevailing circumstances, and/or those that can be carried out quickly to build a record of success.

B2.2 Identify Activities in which NGOs have the Capacity to be Involved

To successfully support and implement these activities the AF will need to engage the services and cooperation of a variety of individuals and partner organizations. These are likely to range from individual advisors/consultants to international, national and local development assistance or service agencies (NGOs), community-based organizations (CBOs), universities, and the private sector. Cooperation also will be required with a variety of governmental organizations (e.g., Forest Department, Forest Research Institute, District and Sub-district Administrations).

Some of the services required by the AF are essentially technical services that will best be provided as specific deliverables either on a bid or (if necessary) sole source basis. In this instance the role of the AF will be limited to developing terms of reference, monitoring contractual arrangements, and receiving the specific deliverable(s). Activities 1-3 above (assessment of remaining forest patches, development of an uneven-aged harvest model, development and application of HSI models) fall into this category. All of these activities require high levels of specialized expertise that cannot be developed by short-term training, and which will best be obtained on an as-required, contractual basis.

Activity 4 (biodiversity baseline surveys and monitoring in priority forest conservation areas) also falls largely into this category. Comprehensive biodiversity surveys requiring complex sampling designs, specimen collection and/or identification of multiple or difficult to identify species (e.g., plants, invertebrates, fishes, herptiles, birds, small mammals) will best be designed, conducted and analyzed by experienced professionals who should not require additional training. Exceptions are surveys of single species or taxonomic groups (e.g., elephants, dolphins) using simple methodologies; these can be undertaken by field staff with relatively little training, although design, supervision and analysis still require specialized inputs. NGOs in Bangladesh already have some experience with the latter types of surveys. An additional exception is long-term community-based monitoring, for example, of NTFP resources, which will require initial training inputs and periodic oversight and analysis.

Activity 5 (development, integration and networking of databases related to tropical forests and forest biodiversity) also is a primarily technical activity for which current capacity already exists, albeit primarily in the RIMS/GIS Section of the Forest Department where the responsibility for database maintenance is likely to remain. A workable mechanism for sharing and providing ready access to this information remains to be worked out, but could potentially involve one or more of the larger NGOs at the national level. Existing expertise in both forest ecology and database management is likely to be available (hence limiting the need for additional training), although close coordination and some sharing of expertise with Forest Department will be required.

Activity 6 (analysis of forest policy issues with a focus on forest conservation) requires high levels of expertise and a sophisticated understanding of major issues, both of which are likely to be found in some of the larger NGOs dealing with resource management policy. This activity is unlikely to require training activities per se, although moderate to high levels of sensitization and development of public awareness may be required.

Activity 7 (legal issues in forest conservation) also requires high levels of existing expertise, but for cost reasons this will need to be provided largely on a gratis or reduced fee basis (e.g., by members of Bangladesh Environmental Lawyer's Association). In addition, these types of activities are likely to require extensive involvement of NGOs/CBOs for community mobilization and sensitization, and specific training with regard to issues and techniques will be required.

The remaining activities (8-12 above) are likely to be implemented by NGOs and CBOs to a large extent, and the organizations engaged in these activities will require training prior to and

during activities implementation. As these organizations will be involved as long-term program partners, the AF can reasonably be expected to invest in the training required. One component of Activity 12 (forest conservation on tea estates) is a special case in that it is likely to involve experienced foresters and other land management professionals, but some additional training and sensitization toward conservation objectives will still be required.

The main criterion for establishing priorities is to focus on the public-private partnership programs that will have the greatest impacts and yield the earliest results so that AF can point to its record of success in efforts to develop the viability of the foundation. Funding for activities without a substantial role for partner NGOs should primarily be considered only when they are pre-requisites for or complement and improve prospects of success of the public-private partnership activities.

B2.3 Identify NGOs with the Capacity to Implement Activities

As noted above there is a very large community of NGOs in Bangladesh, representing a very broad range of skills and interests. Currently available competencies for supporting the anticipated activities of the AF are generally rated as moderate to high, at least at national level (see Curriculum for NGO Training in Conservation of Tropical Forest Biodiversity, Annex 1: Training Needs Assessment, Table 3). Development of AF-NGO partnerships will need to take account of existing competencies, training requirements (see below), and ability of the partner to work or develop a presence at specific project sites.

B2.4 Identify Training Needs for Capacity Development of Selected NGO Partners

It is anticipated that the primary focus of in-country training for AF-supported activities will be on legal issues in forest conservation, buffer zone management, interpretive programs in protected areas, environmental education and awareness, and private sector conservation. Each of these will (or could) require training or sensitization of large numbers of people, and each is amenable to in-country, group-based training, primarily of NGOs and CBOs. These activities have hence been the major focus of initial training curriculum development (see Sections 2.2.1-2.2.5 of Curriculum for NGO Training in Conservation of Tropical Forest Biodiversity). The curriculum has been designed so that it can be modified for the particular background and needs of specific target groups.

B2.5 Identify and Contract Institutions to Deliver Training Programs

At present there are no operational training programs in Bangladesh that fully satisfy the training requirements for the activities that are likely to be funded by the AF. Of a suite of 12 such activities:

- Three (assessment of the location and extent of remaining forest patches utilizing recent satellite imagery; forest policy issues; biodiversity baseline surveys and monitoring in priority forest conservation areas) can be completed on a turn-key basis with no training inputs required from the AF;
- Two (development and use of wildlife habitat suitability index (HSI) models for baseline evaluation, change-tracking and management of forest habitats; and

- development, integration and networking of databases related to tropical forests) can be completed by an external trainer using his/her own training materials;
- Two (development of an uneven-aged harvest model for long-rotation plantation management; and development and trial application of a model for forest restoration using framework tree species) can be completed with training inputs limited to short-term regional study tours and subsequent international networking; and
 - Five (legal issues in forest conservation; management of buffer zones or sustainable use zones adjacent to or within protected areas/forest patches; development and implementation of interpretive programs and facilities in one or more protected area(s); environmental education and awareness development; and private sector conservation) require development and delivery of comprehensive training materials.

Ready-made subject area modules for group training are provided in the Chemonics report “Curriculum for NGO Training in Conservation of Tropical Forest Biodiversity.” However, the training materials for these modules remain to be developed, and in any case would need to be specifically tailored to the needs of the AF and its partners. Based on assessment of ongoing training programs and the capacities of local institutions, the engagement of individual specialists for further development of the required training curricula is considered to be the best and most time-effective option. However, such specialists should draw on local expertise as much as possible (e.g., through workshops, subcontracts etc.), and should have an institutional home in an NGO or a representative of a consortium of NGOs that could subsequently administer the training program. Although it would be unwarranted to recommend specific organizations at this point (without a more comprehensive assessment and calls for expression of interest by the AF), both individual and institutional capacity currently available in Bangladesh for undertaking the required training program development, including incorporation of modern training methods, can be rated as moderate to high. Preliminary listings of local training institutions and potential trainers are provided in the report Curriculum for NGO Training in Conservation of Tropical Forest Biodiversity (Annexes 2 and 3), for the initial guidance of the Foundation.

B2.6 Identify and Develop Funding Resources

A basic assumption underlying the establishment of the AF is that its endowment funding would be made available for implementation of forest conservation activities by AF and its partners. Just as importantly, however, AF could also act as a conduit for other funding resources. There is currently a great deal of funding available for conservation initiatives, but much of it is unavailable to smaller NGOs and certainly to CBOs due to their limited capacity to follow the often complex application and accounting procedures, or ineligibility due to specific donor requirements. AF could therefore play a very useful role in providing the technical expertise, administrative capacity and/or an “institutional home” for accessing additional funding sources, either on behalf of or jointly with its partners. Further, because it will be working both with NGOs and CBOs, AF could also facilitate the development of new and innovative funding mechanisms, particularly at village level. In addition to core endowment funding, it is anticipated that AF could either develop or facilitate access to the following funding resources (note that this listing is indicative only):

1. For NGOs

- *Small grant funding.* Small grant funding, much of it now accessible for biodiversity-related activities, is available through a variety of organizations, including mission-administered funds of embassies and high commissions, multi-lateral organizations, and international NGOs. Additional grant funding is available on an internationally competitive basis (e.g., through the Global Environment Facility, and the U.S. Fish and Wildlife Service’s Asian Elephant Conservation Fund) but needs a strong local proponent.

2. For CBOs

- *Small grant funding* as above.
- *Community savings and credit*, institutionalized in cooperatives, and utilized either directly for conservation activities or to fund replacement resources (e.g., community woodlots to be used in lieu of natural forest areas). This modality is particularly appropriate as Bangladesh has been a pioneer in the development of community-based credit, although this has yet to be applied to conservation activities.
- *Revolving loan facilities.*
- *Revenue sharing* from protected area income.
- *Cost-sharing* between CBOs and government development funding programs.

B2.7 Develop Monitoring and Evaluation Criteria

It is now a well-established principle of development assistance initiatives that periodic, structured monitoring and evaluation of activities implementation are required, and biodiversity conservation initiatives are no exception. Monitoring and evaluation are essential tools for ensuring that funds are expended as intended, and that activities are implemented on schedule; they also provide a framework for project revision, and most importantly for measuring the extent to which activities are having the desired effect. Some of the potential partner organizations of AF already have well-established monitoring and evaluation capacities, and these will need to be drawn on (rather than reinvented) during the design and implementation of AF-supported activities. Two modes are likely to be used, most probably in combination: 1) self-monitoring, in which the partner organizations continuously monitor activities as they are implemented (e.g., through the preparation of quarterly progress reports); and, 2) independent monitoring and evaluation, in which an independent organization conducts periodic audits of activities. Monitoring and evaluation has been included in the proposed NGO training program to further increase both awareness of how and when these activities should be conducted, and the capacity and competencies to do so.

B3. Key Recommended Actions

- The AF Board should initially use its own expertise and experience with NGOs to review the Strategic Plan recommendations with respect to NGOs and their involvement with AF activities. The Board can either adopt these recommendations or develop their own strategy based on their perceptions of what would constitute a “win-win” situation for the AF and NGOs. It should be noted here that the three AF NGO Board members provide a wealth of experience regarding NGOs in Bangladesh,

their programs and suitability as partners in participatory community management, environmental technical tasks, environmental law, policy advocacy, public awareness and forest conservation.

- To ensure that all activities funded by the AF are completed to the highest possible standard, the AF should also constitute subcommittees of Bangladesh-based experts for the preparation/review of all training materials, terms of reference for technical contracts, and grant proposals.
- Initial priority should be given to the development and delivery of necessary training. Training materials need to be developed and delivered by the best available expertise. Where national expertise is not available international expertise should be sought, at least for subject matter development. All training programs should include a built-in evaluation component to permit improvement of subsequent programs.
- Partnerships with established, high profile national and international organizations should be pursued for the development of both training materials and terms of reference for contracted and grant-funded activities (including those incorporating internal or self-training activities [e.g., biodiversity surveys]), to attain high standards and to lend credibility to the AF's activities.
- Partnership agreements specifying roles of selected NGOs, local communities and other partners should be negotiated in accordance with plans for site-specific activities. Both NGOs and local communities should be asked to forego extractive activities that use either state forest lands or buffer zones and compromise sustainable forest-based, revenue producing and/or income generating activities.
- Simultaneous with the development of AF project activities, a system of key variables for baseline status should be measured and a participatory monitoring and evaluation plan drawn up and implemented. A results based system with verifiable indicators of performance should be established. The evaluation procedure should include at least one independent NGO not involved in the activity or project implementation. This partner should be responsible for validating monitoring and evaluation findings and reports of the participatory M&E team.

Additional actions pertaining to individual initiatives that may be undertaken by the AF are outlined in Sections B4 TO B8 below.

B4. Legal Issues in Forest Conservation

Most forest community residents cannot afford to pay for legal services to defend themselves in land disputes, to sustain claims to land based on indigenous rights, to assert indigenous rights to forest lands claimed to be in the public domain, or to quash spurious forest cases brought against them. They have to rely on services provided for free or a nominal cost by environmental lawyers and paralegal field staff employed by environmental law associations. Support to environmental law NGOs to address forest law cases and issues could accomplish the following:

- Facilitate the clearance of outstanding minor land tenure disputes and forest cases with little or no merit filed against potential community participants and charges/allegations against local FD officers who are developing plans for participatory management of state forests and surrounding areas. Outstanding forest cases and administrative charges often contribute to the climate of mistrust and constrain participation in new initiatives in participatory management.
- Help ensure that agreements for community/FD joint management of state forest lands and surrounding areas are consistent with forest law.
- Help local NGOs develop skills to provide paralegal assistance to forest communities and other participating stakeholders in forest conservation. This would include legal advice on how to pursue complaints against outside commercial interests threatening the viability of sustainable forest initiatives.
- In the longer term, pursue test cases in forest law, tenure and user rights of forest lands to establish principles of landmark judgments in support of forest conservation and community participation in management of protected area state forest lands.

B5. Management of Buffer Zones and Sustainable Use Zones

The foundation can help strengthen local NGOs/CBOs with skills in community mobilization and management and enhance their capacity to help communities work on sustainable use of forested lands, forest conservation and biodiversity protection activities. This will enhance the prospect of successful joint FD and community management of resources inside state forests to be designated as sustainable use zones, unclassified state forests (USFs) or private natural forests. These forests would be identified for forest conservation and/or sustainable use and regeneration of forest in “buffer zone” areas surrounding protected areas.

Management of buffer zones or sustainable use zones associated with protected areas or forest patches will require NGO-based skills in group formation and social forestry, and CBO-based skills in group self-management, and management of forest land. Previous and existing initiatives in Bangladesh have trained very large numbers of people in these subject areas, although practical experience adjacent to or within protected areas is lacking. Training supported by the foundation will need to focus on translating the existing experience base to the protected area/forest conservation context. Sites in the Chittagong Hill Tracts will require the development of additional expertise and programs in shifting cultivation management.

Additional information on sites that are suitable for buffer zone management activities is included in the Site Selection Report.

B6. Development and Implementation of Interpretive Programs and Facilities

Development of visitor use facilities (nature trails, visitor centers, other interpretive programs) is a key component of biodiversity management in protected areas receiving or potentially

receiving high levels of visitor use. Past attempts at facilities development in Bangladesh's protected areas have been based on inadequate expertise, poor design, poor understanding of visitor requirements, insensitivity to environmental impacts, inadequate funding, and poor maintenance. Although there is currently very limited capacity within the responsible government agencies for development of protected area visitor facilities, many of the component skills required are available in the NGO community and the private sector.

The foundation is in a unique position to promote the development of protected area visitor facilities that will serve both the broad aim of forest biodiversity conservation (through development of appropriate interpretive programs), and in situ development of public awareness. The proposed model is based on development and operation of facilities/interpretive programs in one or more protected areas, through a long-term lease arrangement between Forest Department and an appropriate NGO. This will require training of participating NGOs and CBOs.

Bhawal National Park, Madhupur National Park, Dulhazara Safari Park and Lawachara National Park currently receive high levels of visitation (primarily for picnicking) and all are suitable target areas for development of visitor centers, nature trails, and other interpretive programs for the promotion of public awareness.

It is also proposed to enlist the participation of private sector eco-tourism operators and providers of ancillary tourist services in the partnership to design and run the interpretive facilities (See Section IV.C3 below for discussion of the involvement of these private sector partners).

B7. Environmental Education and Awareness Development

Many printed materials related to environmental education and awareness have already been produced and circulated in Bangladesh. Mass and traditional media are also widely used to deliver environmental education campaigns and develop public and specific target stakeholder awareness and action on the issues.

There is not a lot of material on forest conservation and even less on making the public aware of biodiversity protection issues, with the exception of materials focusing on protecting endangered large species fauna such as tigers. A great deal of in-country expertise already exists with regard to subject area development, and materials can be mass produced to a very high standard of quality. Training supported by the foundation will need to focus on translating the existing experience to the target forest conservation and biodiversity contexts.

Additional information on the types and scope of potential public awareness activities is provided in Section VIII and in the accompanying report on the foundation's proposed public awareness strategy.

B8. Non-Government Sector Forest Conservation

Opportunities exist for NGOs to lease USF land with remnants of relatively intact natural forests, or privately owned forest lands, on a trial basis to demonstrate their effective forest conservation

and biodiversity protection management techniques. NGOs/CBOs either need to be fully responsible for the management of lands on a trial license agreement basis or co-manage the protected area with contractual agreements specifying the responsibilities of the co-management partners. This model will require comprehensive training of CBOs and participants to develop capacities in all aspects of land management. This goes well beyond the capacity required for NGO/CBO management of forest conservation in buffer zones and designated sustainable use zones (see B5 above). If the NGO/CBO management of such a private or leasehold forest proves to yield good results, consideration could be given to developing complementary interpretive facilities, again with NGO/CBOs playing major roles in the development, design and operation of these facilities.

The other model that could be tried out on private sector tea plantations is one where natural forest conservation and regeneration activities would be undertaken in a suitable section of the tea estate not planted to tea. The management regime used in the tea plantation would be extended to the conservation forest. Clearly, this model would involve a modest use of NGOs and CBOs. A discussion of this approach is included under Section IV.C2 below.

C. Relationships Strengthened and Strategic Partnerships Developed with the Private Sector

C1. Rationale

Four significant roles are foreseen for encouraging and strengthening private sector involvement in strategic partnerships with the AF. These roles are addressed in C2-C5 below:

C2. Private Sector Donor Contributions to Make the AF a Financially Viable Institution

There is a strong potential to get private sector enterprises to donate funding and direct administrative support for the set-up and administrative costs of operating the foundation during the early years of the AF. These donations would provide substantial assistance in giving more time to seek capital funding so that the AF can mount sustainable operations just from the interest on the endowment fund. The full rationale for this private sector role, why Bangladeshi companies or multi-national companies with operations in Bangladesh might be willing to make such donations, how AF might pursue such support, and recommended key actions are included in Section III above.

C3. Forest Conservation on Privately Owned or Leased Tea Estates

C3.1 Rationale

A significant opportunity for natural forest conservation and/or regeneration and biodiversity enhancement may be possible in privately owned or leased tea estates, particularly in the major tea plantation area bordering forest protected areas near Srimangal in Sylhet Division. This could be achieved by encouraging tea plantation owners to integrate forest conservation activities into existing tea plantation management regimes on lands currently not planted to tea. These land areas are typically remote from the center of plantation operations, and in many instances adjacent to protected areas (Lawachara NP, Satchuri RF or Rema-Kalenga WS).

Some tea estate growers have been putting idle estate areas into pineapple and other commercial agriculture crops, often with serious soil loss and land degradation consequences. Other tea estates have kept the land as natural forest remnants. Finlay's, a major tea plantation estate grower, has already developed, enhanced-- with selected indigenous tree varieties on mixed stand bases, and protected a 50 acre natural forest plot on its Srimangal concession area. Finlay's and other tea estate growers may be willing to invest in further natural forest regeneration, particularly if offered concessions with respect to payment of royalties on trees cut to maintain and enhance an indigenous multi-species, multi-aged natural forest. Such programs, employing existing tea plantation workers as an off-season activity, could also reduce the amount of firewood collection from adjacent state forest protected areas. Many tea plantation workers supplement their incomes by fuel wood gathering and other gathering activities, even (illegal) cutting of trees, during the off-season.

C3.2. Modalities for Encouraging Tea Plantation Owners to Become Key Partners of AF

One of the reasons that tea plantation owners are unwilling to maintain and enhance slow growing indigenous natural forests on their plantation is the requirement that to keep the lease in good standing, a minimum percentage of the area must be planted to agricultural crops. Another reason is the royalty payments that the estate has to pay for the selected and thus costly cutting of timbers to maintain the multi-species, multi-aged character of the natural forest. Removing such constraints and providing tax concessions to tea plantation owners that establish private natural forest on their estates could well encourage other estates to follow the practice of Finlay's.

The Chemonics team recommends that tea estates develop forest conservation by integrating the natural forest model into the overall tea estate management regime. This will require sensitization of existing management to the special issues involved in developing and managing natural forests for conservation and biodiversity protection purposes. It is proposed that this sensitization take the form of one-day regional workshops for interested tea estate managers and others to be held in Srimangal and Chittagong (the other division with a number of tea plantations).

It is anticipated that the workshops may be followed-up by development of training for tea estate workers in woodlot/forest management. Tea estate managers should be strongly encouraged to accept this training for their workers, even if it involves bringing in local NGOs and CBOs from outside into what are traditionally closed plantation worker communities (many of the plantation workers originally came from India). Without this training and subsequent support from local NGOs and CBOs, tea workers may be tempted to overexploit their woodlots and/or continue to exploit protected forest areas for their fuel wood and other wood to be sold for supplemental income.

C3.3 Recommended Key Actions

- Assess tea plantation estate areas for their potential to develop natural forest patches and/or already existing natural forest patches that are being managed and maintained by the tea plantation enterprises.

- Initiate discussions with the tea board, estate owners and managers as to the potential and interest in the regeneration and expansion of natural forests within the tea estate concession areas. Encourage tea plantation estate owners to use some estate areas for natural forest regeneration and protection.
- Identify possible incentives to encourage tea estate enterprises to commit to the program of natural forest regeneration (e.g. authorities agree to forego tax revenue on logs harvested on a long-term uneven-aged, indigenous species natural forest management plan).
- Integrate forest conservation on tea estates into existing land management regimes, operated by the estate owners and managers.
- Provide tea estate managers with sensitization workshops on management for forest conservation and biodiversity protection.
- Ensure that plantation workers have the capacity to regenerate natural forests and will benefit from the activity (e.g. by also developing community woodlots from which they would generate supplemental income).
- Identify and contract NGOs/CBOs compatible with tea estate management and with the capacity and skills to train and then assist the workers in their participation in the scheme.

C4. Private Enterprise Involvement in Interpretive Programs

C4.1. Rationale

A major challenge for the AF in encouraging forest conservation areas to be truly protected from production and plantation forest use, unsustainable fuelwood gathering and other exploitive uses is to identify alternative economic values that may be generated by sustainable use practices. These must be comparable to benefits generated from activities prior to the introduction of forest conservation, or community participation will be difficult to sustain.

It has already been recommended that the AF consider developing interpretive facilities in one or more of the National Parks/ Wildlife Sanctuaries. The major objective would be to increase the public awareness of the importance of forest conservation and maintaining wild life habitat. However, there is no reason why those who can afford to pay and value such facilities should not pay for the visit. Private sector tourism enterprises, or even better, private sector operators experienced in offering eco-tourism opportunities for their clients, are most likely to effectively develop and efficiently manage the facilities to generate income while also promoting tourism to the facility.

In the same manner, eco-tourists who come to the area because of the park and are willing to pay money for accommodation near or inside a national park and transportation to and from the

NP/WS do so because they value the protected area. There is a strong case for charging and generating a potentially good income in the form of royalties and /or economic rent from commercial tourist organizations and hotel enterprises allowed to establish their businesses in or near to the protected area.

C4.2 Modalities to Encourage Private Sector Involvement in Interpretive Programs

It would be advisable to involve potential ecotourism enterprise partners in the planning and design of interpretive facilities. Local hotel operators, transportation enterprises, even catering companies may also be able to provide insight on likely demands for services associated with the facility. They may also be able to help identify an appropriate compromise on entry fees that generates significant funds without substantially reducing tourist visits.

Arrangements would have to be made to license, manage and control such private enterprise ecotourism operators or offer concessions to ensure that while they would indeed generate profits there would be income and returns that could be plowed back into the interpretive facility and those who run them. In fact one model would be to have the hotel or tour operator provide the facility and employ the staff. These arrangements should follow guidelines for ecotourism that AF would help develop with the assistance of local stakeholders, managers of interpretive facilities and tourism experts from the Ministry of Tourism & Civil Aviation (see Section IV.B7 Other Government Agency partners).

C4.3 Recommended Key Actions

- Involve eco-tourism operators and local tourism service providers in the planning and development of interpretive facilities in national parks and other forest protected areas.
- Develop guidelines for eco-tourism in national parks and follow them when setting up partnership arrangements for involvement of private sector tour operators and local tourism service providers. These guidelines should include special provisions to allow those with limited funds or targeted visitors (e.g. schoolchildren) to visit the facility either without charge or at a nominal cost.
- Work toward the necessary compromise to ensure that tourist fees are low enough that the volume of tourism is profitable for private sector operators, yet high enough to provide significant funds for the national park.

C5. Production of Herbal Medicine Products

C5.1 Rationale

Another alternative source of income that may be generated from sustainable use of natural forests is the sale of roots, bark, sap, flowers, twigs, leaves, herbs and plants as raw materials to commercial pharmaceutical enterprises for herbal medicine production. Joint ventures or some other form of public-private partnership to manage forests for the sustainable production of these products could be valuable to both the pharmaceutical companies and local communities. A

range of products with commercial potential are likely to be found only where substantial areas of natural forest remain. This may apply only in the remote areas of the Chittagong Hill Tracts where systematic taxonomic identification of plant and other biodiversity have not been completed.

There is a strong herbal medicine component to the pharmaceutical industry of Bangladesh. Some of the strongest companies may be interested in new product development as well as access to established products. However, the raw materials for their herbal medicine products are not all drawn from Bangladesh sources.

C5.2 Modalities to Involve Pharmaceutical Companies as Partners

It would be worthwhile to explore whether or not pharmaceutical companies who depend on supplies of raw materials for their herbal products are able to secure reliable supplies with good quality control at a reasonable price. If not, then to determine whether any of the areas designated as forest conservation areas might be suitable for the production of such supplies. It may be possible for the FD and local communities to set aside some patches of land within NPs or in surrounding areas for contract growing of herbal products needed by one or more of the pharmaceutical companies. The company botanists and chemists could also be involved to make sure the herbal products meet their requirements and quality control standards.

If and when remote, long-inaccessible areas of the CHT are to be opened up and biodiversity assessments are carried out, pharmaceutical companies involved in new herbal medicine product development may be polled to see if there is any interest in joining the AF as a partner and paying for the rights to significant plant biodiversity values that might be identified and commercially developed.

C5.3 Recommended Key Action

- A study of pharmaceutical companies marketing herbal medicines and developing new products should be carried out to determine if forest conservation protected areas might provide reliable supplies of herbal materials without compromising the biodiversity values of the protected area.

SECTION V

Intermediate Result 3: Forest Conservation and Biodiversity Policy Dialogue and Reform Initiated

A. Rationale

The loss of natural forest from protected forest areas in Bangladesh is continuing to occur in spite of legal provisions meant to prevent or minimize extractive use of forest resources. The Forest Department may well have inadequate manpower and insufficient policing authority to prevent illegal felling, girdling, removal of plants, hunting of animals, collection of fuel wood and other prohibited practices, but it is evident from past experience in Bangladesh and elsewhere that an approach based primarily on policing and enforcement is in any case unlikely to result in long-term conservation of forest resources. Clearly, current forest policy, as established by the Ministry of Environment and Forest, and its application primarily by the FD, is not generating the intended results, at least with respect to forest conservation and biodiversity protection. Unless forest policies that strategically function to conserve natural forests are effectively implemented, there will be no forests left to conserve. It is essential to promote forest policy change if the AF is to achieve its mission.

To be effective in the long-term, forest policy change will need to be supplemented by the development of policy instruments such as laws, regulations, guidelines and standing operational procedures. While the development of these is strictly within the realm of government, AF and its partners can play a useful role by initiating dialogue and encouraging debate, by identifying and promoting models that have worked elsewhere (particularly within the region), by providing support to positive government initiatives, and by demonstrating through pilot field activities how forest conservation can realistically be achieved in Bangladesh. Major issues and current constraints are identified in Sections A1-A8 below. Potential interventions by AF and its partners are identified in Sections B1-B7.

A1. Focus of FD on Production Forestry Rather than on Ecosystem Integrity

Bangladesh's forests provide valuable goods and services, including: timber for furniture, home building and paper; diverse and extensive wildlife habitat; abundant clean water; and open space for recreation. However, sustaining forestry into the future will require careful maintenance of the ecological system that is the source of these benefits. In turn, this will require the FD to change the way it does business, i.e., moving from a production/plantation focus to a focus on ecosystem integrity.

A2. Funding and Resource Allocations for Forest Conservation

Current funding priorities and budget allocations within the FD still favor the production sections and activities. Protected areas are understaffed and under-funded. There are only 74 conservator staff and one wildlife specialist on the regular staffing of the FD. Most of the major financial commitments to conservation forest management have come from internationally

funded or financed projects. While welcome, there are serious problems of sustaining initiatives once the project is completed and staff has to be absorbed back into regular positions in the FD budget. Forest conservation short-term accomplishments may have been achieved but forest policy remains unchanged, so the new approaches cannot be institutionally sustained.

A3. Incentives for Superior Performance in Forest Protected Areas

If national parks generate funds greater than their budget allocations (e.g. through development and marketing of facilities for visitors to national parks) these net resources go back to the FD and the Government of Bangladesh. Under current budgetary policy it is not permitted to re-invest net revenues into further conservation activities at the site.

A4. Relevance of Protected Status

In the protected forest areas visited by the Chemonics team, irrespective of whether they have status as a National Park (NP), Wildlife Sanctuary (WS), Game Reserve (GR) or Reserved Forest (RF), it was found that all had substantial areas where the rules of exclusion and prohibition of activities were either being ignored or not effectively enforced.² The extent and degree of degradation and quality of natural forest remnants seems to be associated with the extent of local community population pressure, the relative remoteness of areas and accessibility of commercial market opportunities for the sale of protected forest area products (bamboo, fuel wood, wood for brick-kilns and furniture). The relative degree of protection provided by different protected area classifications does not seem to make much difference. Time and attention given to up-grading the protection status of protected areas are immaterial if the protection provisions are largely ineffective.

A5. Forest Policies that Deter Private Sector Forestry Initiatives

Tea estate plantation operators on leased state lands are being discouraged from conserving or regenerating natural forests by leases that require a high percentage of the holding be actively committed to plantation agricultural activities. Royalty fees payable for each mature log cut, even when planted, managed and owned by a private enterprise on privately owned land, are disincentives to natural forest regeneration and forest plantation activities.

A6. Centralized Forest Conservation Management Policies

Decision-making on forest management has neither been decentralized nor devolved to local levels. There are no provisions for discretion at the individual protected area site level that might allow for the accommodation of particular local situations in the management and control of access and use of the protected area by outside parties. Discretionary powers provided under the protected area legislation, such as: *“Provided that the Government may for scientific purposes or for betterment of the national park or for aesthetic enjoyment of the scenery or for any other exceptional reasons, relax all or any of the prohibitions specified above,”* are exercised centrally.

² Appendix A provides the rules and lists of prohibited activities for each of these types of protected forest areas. The status, areas and the time the area was declared protected are listed for each of the visited forest protected areas.

A7. Need for Discretionary Local Management Powers

The lack of local discretionary powers is potentially a matter of concern for the Arannayk Foundation. A major thrust of the proposed strategy to improve forest conservation is to build effective public-private partnership management of forest conservation initiatives in and around state forests. Discretionary powers to approve co-management and/or delegated management agreements will be needed to proceed with many pilot activities. The agreements may have to be adjusted as implementation proceeds.

A8. Successful AF Pilot Activities as the Basis of Policy Change

Successful AF public-private partnership pilot activities may well remain project experience unless the foundation works to convert the experience into more effective policy and participatory management regimes for protected area forests.

B. Modalities for the AF to Promote Forest Policy Dialogue and Reform

B1. AF Policy Advisory Committee

To get forest policy dialogue generated among its public and private sector implementation partners and other stakeholders, the AF will need to create and allocate substantial resources to its proposed Policy Advisory Committee. Active participation by the highest level of official possible from MOEF (preferably the Secretary himself) is desirable. It will have to be recognized by all stakeholder participants, including senior government officials, that the committee is advisory to the AF Board. The board will take actions to promote broader public dialogue on forest policy issues to help generate policy reform. The Policy Advisory Committee should have broad membership of all major stakeholders, as recommended at various points in this strategy. The incentives for active participation by government officials will have to be generated by the opportunities for them to engage in constructive dialogue without taking public positions or political stands with partners who may be in disagreement with them. The agenda for policy dialogue should be framed around proposed and operational activities and initiatives of the foundation.

B2. Policy Dialogue Use of Technical Expertise, Studies and Field Observations

Regular opportunities should be provided for committee members to visit field sites of proposed and on-going forest conservation and biodiversity protection initiatives. AF should be ready to hire experts and contract special studies to facilitate the work of the committee and foster the policy dialogue and reform.

B3. Use of Assessment, Integrated Database and M&E Information

Sharing interpretive analysis of information from natural forest and biodiversity assessments, integrated databases and participatory monitoring and evaluation system findings with participants in the forest policy dialogue would facilitate and ground forest policy debates in reality.

B4. Public Consultations and Workshops on Forest Policy Issues

Parallel to the internal Policy Advisory Committee, the AF should organize public forums and workshops to address policy change needs that either emerge during the course of AF program implementation or are warranted by successful public-private partnerships activities that have policy implications. It is important that these policy forums and workshops be grounded in the work of the AF and focus on subjects that the partnership participants can address from a position of knowledge, rather than incomplete information.

B5. Engaging the Multinational Development Banks on Policy Issues

The Forest Department emphasis on plantation forests, introduction of exotic species and strategies for involving communities through the community, social and agro-forestry programs are associated with a series of World Bank and ADB loan financed projects (including the FRMP, the Forestry Sector Project and the Sundarbans Biodiversity Project). It will be important for AF to establish working relationships with the Multilateral Development Banks (MDBs) so that the intent and direction of these initiatives are understood and to influence future financing in the forestry sector so that forest conservation and biodiversity protection objectives are not compromised.

B6. Engaging AF Legal Partners in Fostering Policy Dialogue and Reform

In a country using a customary law system such as Bangladesh, policy reform involving legal changes (e.g. changes that cannot be effected by changes of administrative rules of the responsible government agency) can be initiated in at least two ways: either by drafting and getting approval of new legislation or winning test cases to secure desirable interpretations of existing laws. Getting new legislation approved is both time consuming and cumbersome and not recommended except for major desired shifts in policy. The AF should support lawyers from partner environmental and forest law NGOs to identify and fight test cases in forest law that are consistent with AF objectives with respect to forest policy reforms.

B7. Generating Public Support for Policy Change

Once a clear position emerges on desirable policy changes, the AF should harness its public awareness program by disseminating materials and use newspaper articles and other media discussions to promote support for the proposed changes.

C. Key Recommended Actions

- AF should establish and support a Policy Advisory Committee to the AF Board, made up of senior representatives from public, NGO and other private-partner stakeholders.
- AF should organize and support public consultations and workshops on identified forest policy issues and proposed changes.

- The AF should engage the MDBs on desirable forest policy changes and possible linkages between their further funding of forest sector projects and policy changes that would institutionalize changes in support of effective forest conservation and biodiversity protection.
- AF should encourage dialogue and promote forest policy reform that:
 - Encourages the FD to refocus programs from production forestry to ecosystem integrity, where appropriate, and commitment of budget and resources to reflect the importance of ecosystem integrity;
 - Rehabilitates or reflects the reality of the degraded status of many forest protected areas rather than maintaining degraded areas as exclusionary zones;
 - Recognizes buffer and sustainable use zones inside protected forest areas as an effective approach to forest conservation;
 - Allows for decentralized and discretionary powers for forest resource management;
 - Allows for some retention of net revenues generated by interpretive program management in national parks;
 - Facilitates and institutionalizes participatory FD/NGO co-management of forest conservation protected areas and/or devolution of management to NGOs, CBOs or private sector concessions; and
 - Builds on successful pilot project initiatives supported by the AF.
- AF should actively support the process of affecting forest policy reform using partner NGO legal capacities, and generating public support for policy shifts through its public awareness program.

SECTION VI

Intermediate Result 4: Promising Sites for Forest and Biodiversity Conservation Interventions Selected

A. Rationale

A key element in the short-term strategy of the AF is that it should develop proven and effective public-NGO and other private sector participatory partnerships and mechanisms to address forest conservation and biodiversity protection issues. The vision is that these public-private sector and NGO partnerships will be more effective than present project and program funding for forest conservation and biodiversity protection that are for the most part under the control of the government (MOEF and its implementing partner, usually the Forest Department).

The enforcement of regulations included in state forest protected area legislation (see Appendix A for the specific prohibition clauses applying to National Parks, Wildlife Sanctuaries, Reserved Forests and Game Reserves) require the physical exclusion of people, livestock and exploitive activities from declared forest areas. In many protected areas the FD staff is charged with trying to enforce exclusion requirements, even against indigenous forest communities who settled inside exclusion zones before the areas were declared. In other protected areas FD staff have to either try to enforce disputed public claims to forest lands or come to some informal (and not legally recognizable) agreement regarding their use. The FD puts up a “physical enforcement wall” as the primary defense against degradation of the protected area.³ Few of the attempts to exclude people and prohibit a whole range of specific activities have worked well. Forest resource degradation continues, and in some cases it has even accelerated.

In contrast, the AF strategy is to encourage the FD to recognize forest community interests in the areas surrounding protected areas and allow the use of other areas within the protected area itself where sustainable use practices can generate income without damaging critical ecological areas. By making the local forest communities partners in such sustainable use zones, the FD will be able to more effectively protect internal high forest and wildlife habitat zones. The partnerships in the sustainable use zones will provide a “social fence” of partner stakeholders around critical areas that must be protected.

A second “social fence” may also be generated by the development of public-private partnerships. The present public perception of the actions of the Forest Department and its approach at forest conservation is that at best it is ineffective in preventing use of protected area resources. Public opinions are often voiced – even if there is little foundation for them – to charge that the FD is involved in excluding the poor to allow access to extractable resources in protected areas by commercial enterprise interests and/or their own staff. There is little support for the efforts of FD staff to enforce regulations against prohibited activities.

³ In the Madhupur tract, the FD has used its own funds literally to build a brick wall around part of the National Park that has been carved out of the Reserved Forest areas (informants declared some areas inside the wall are still disputed).

Once public-private partnerships involving local NGOs and CBOs working with FD are established, then local public opinion may be much more sympathetic to the FD efforts to prevent other individual and commercial enterprise interests from illegally exploiting and damaging critical ecological and habitat protection zones of state forests. Public awareness of the importance of conserving state forests and protecting their biodiversity will generate a second public opinion “social wall” against illegal activities that compromise the public-private partnership efforts.

The key short-term objective for the AF must be to develop the public-private partnerships and demonstrate that they can successfully undertake forest conservation and biodiversity protection activities, not achievable under the present regime of Forest Department enforcement of forest protected area exclusion and prohibited activity laws. Other important short-term strategy objectives and proposed interventions to achieve them are:

1. Establish prerequisites to the successful identification and development of public-private partnerships (e.g. assessment of forest biodiversity at potential intervention sites; development of ties with government, NGO and private sector agencies; development of local NGO and CBO capacities to work on forest conservation issues; clearing out the backlog of outstanding forest cases brought against potential forest community partners and their members);
2. Initiate activities complementary to the successful implementation of the pilot site partnerships (e.g. systematic monitoring of biodiversity status, development of interpretive facilities in protected areas that generate alternative incomes without consuming protected area resources, public awareness campaigns for stakeholders and public to understand forest conservation and biodiversity protection issues); or,
3. Build upon the successes in public-private partnerships (e.g. the promotion of forest policy reform measures).

Generally endowment funds that focus on activities selected for strategic impact, feasibility, and ability to be carried out quickly, do better than those that start out with a policy based on reacting to whatever is proposed. In Bangladesh this is particularly important because of the rapid rate of loss of tropical forests and their biodiversity at nearly all sites.

For the AF to establish itself as a going concern, the strategy must focus on developing public-private partnerships in pilot locations, as quickly as possible. The strategy is to seek early successes in forest biodiversity protection that are publicly visible so that AF can build on this track record to secure itself as a permanent and viable institution. Selection of initial pilot activities must focus on feasible interventions where threats can be addressed, preliminary matters and negotiations to develop partnerships are minimized and partnership activities implemented quickly. However, it is also important that the impact be significant and visible enough to the public, stakeholders and donors to generate further interest and financial support for AF to pursue other initiatives and interventions at other sites.

B. Criteria for Site Selection: Refinement and Validation through a Rapid Appraisal Process

The Chemonics team developed and used a set of four criteria (B1-B4 below) and related questions for rapid appraisal assessments of protected area sites as possible locations for AF public-private partnership activities. These appraisals were used to assist in the generation of activities for specific potential sites and to validate and/or refine the criteria themselves (see the Site Selection and Inventory and Monitoring Report attached for the full descriptions of findings for each of the visited sites).

B1. Ecological Significance/Biophysical Condition

- What's the site's conservation value?
- What's the site's current biophysical condition?
- Is the site within a priority eco-region, i.e., a large geographical area distinguished by a complement of species, ecological communities, and ecological systems?
- Is the site especially rare and/or threatened on a national and regional scale?
- How does the conservation value of the site contrast with its commercial value/production value?

Five distinct tropical forest regions were identified and considered. All except the southwestern Sundarbans have been subject to loss of large areas of forest cover and even more widespread natural forest degradation.

- Sunderban mangrove/coastal tropical mangrove forest in both the southwest coastal delta areas (still extensive areas) and southeast Chokoriya mangrove areas (more limited and now largely replaced by shrimp ponds and other ecosystems);
- Chittagong Hill Tracts, tropical moist hill forests in the southeast on the border with Myanmar;
- Coastal Chittagong and Cox's Bazar Division tropical semi-green forests that are subject to heavy cyclone damage and other coastal effects. The forests were once habitats for major wildlife populations (elephants etc.) but expanded human settlements and in-migration have led to degradation and loss of forest areas and the dramatic reduction of large mammal populations;
- Semi-moist tropical forests in northeast Bangladesh, Syhlet Division, near Srimangal and the northeastern India border; and
- Madhupur Tract *sal* deciduous forests, at one time covering much of central and northern Bangladesh from Dhaka up through to the northern border with India, but now limited to the Northern Tangail Division and parts of Mymensingh Division.

Biophysical conditions of all state forest protected areas are generally poor. The choice sites with savable forest biodiversity are limited. Except for one or two areas in the CHT, the emphasis is going to have to be on selection of areas where regeneration of natural forests is most likely to succeed.

Increasing populations of indigenous and in-migrant human communities dependent upon forest resources as a basis of livelihoods, and the exploitive commercial enterprises, generate extreme pressure to produce commercial values from all but the most inaccessible protected area sites. There is little formal economic information about conservation values of sites.

B2. Management Status

The current management status of a site in terms of biodiversity, threats, current protection status, and strategies can be assessed by asking the following questions:

- What are the threats to biodiversity at each site and the strategies needed to address those threats?
- How do site threats fit into the range of threats that must be addressed to conserve the representative biodiversity of the eco-region?
- What's the current protection status (is the site legally decreed? is it a national park, wildlife sanctuary, game reserve or forest reserve, and how do the national laws protecting these areas differ?)
- Is there a strong, existing conservation effort at the site that does not need AF assistance, but may offer opportunities for collaboration?

The current legal protection status (NP, WS, GR or RF) is frequently not a good measure of actual protection. Actual protection is more closely related to:

- Relative inaccessibility, population density in and around protected areas;
- Whether the protection status is accepted or disputed by indigenous and in-migrant communities; and
- The capacity of FD staff responsible for managing the protected area.

Recommendations for upgrading of protection status should only be made when it can be assured that actual management status will reflect the legal status.

All protected area sites face potential threats to the status of their natural forests and biodiversity. Typically the cross-site threats are quite similar across eco-regions, unless there are major differences in the other factors reflecting actual protection status.

There are few strong conservation efforts actively being pursued at most sites, with the exception of the SBDCP in the Sundarbans. Where the FD protected area field staff are committed to conservation objectives there is rarely sufficient staff or financial resources to pursue them.

In spite of the protected area provisions, the FD initiatives for effective conservation are constrained by previous confrontational management in active dispute with local forest

communities and management that co-opted local communities for the FD to pursue production forestry activities.

There is inadequate information on the status of all sections of protected areas, threats to the protected status and on the source of these threats, for the FD to effectively manage the sites without informed and collaborating partners. There is also insufficient information to make fully informed assessments through rapid appraisal processes.

B3. Leverage

Sites should have the potential of affecting the broadest possible audience of stakeholders.

- Will a successful conservation effort at the site offer AF the opportunity to affect other sites in the eco-region or elsewhere?
- If the AF deals effectively with the major threat at this site, will it be able to apply that lesson to other sites?
- Can a conservation success at this site provide additional, local credibility that will attract the attention of managers at other sites (and donors) and give AF an opportunity to work with (receive funds from) them?

Within target eco-regions there may well be several sites in which success in one site would be relevant and adaptable to other protected area sites in the same eco-region. At present there are few “successful” biodiversity protection initiatives and thus any leverage is potential rather than actual.

Donor and financing agencies are not providing much support because of the lack of successful activities or model conservation approaches to build on, even though the importance of forest conservation is widely recognized. This suggests that even modest scale successful initiatives might generate substantial leverage for a sponsor such as AF.

B4. Feasibility/Project Potential

- Is there a strong conservation organization present at the site?
- What is the availability of other partners currently working in the area or with interest in working in the area as facilitators, catalysts, or researchers?
- Is there a current local or other initiative to improve the conservation of the site?
- What is the level of awareness, understanding and interest of the local community(ies) with regard to conservation and their willingness to participate in an eventual project?
- What are other community issues? (e.g., level of, if any, conflict among stakeholders, status of devolution policy, including type of decision making rights of community or degree of community rights to manage the resources of the community; degree to which informal rights are perceived and exercised)
- Are local conservation authorities particularly interested in forest/biodiversity conservation at this site?
- Are the threats at the site within AF’s capacity to address?

- What will the proposing organizations be expected to “bring to the table,” e.g. counterpart funding? In general, the success rate of projects is better when there is a requirement for counterpart contributions, which may be in-kind. Even the poorest communities are usually able to contribute labor, for example, if materials are paid for.
- What is the potential for sustainability after AF support?

There is much stronger potential interest among potential partner organizations at most protected area sites for biodiversity conservation activities than is presently realized.

There are some local initiatives on forest conservation and sustainable use practices, but they are typically very small and poorly coordinated with partner organizations and agencies respectively. These include initiatives of the FD and other government agencies as well as environmental NGOs and local community development NGOs/CBOs working with forest communities.

General community awareness of the importance of forest conservation is relatively strong, unlike biodiversity issues that concentrate on the importance of saving endangered species. Forest community stakeholders may have strong awareness of the issues but feel they “cannot afford” to be involved in such initiatives unless there are assurances that basic livelihood can be protected.

Community issues and threats that would have to be addressed are very complex, numerous and fluid. Their importance changes over time as a result of natural alterations (affecting the forests and stakeholder livelihood opportunities), changes in status and power of commercial stakeholders and political interests, and the attention given by the FD and other public agencies to protected areas and conservation issues.

De facto communities are often left free to manage protected area forest resources, subject only to informal agreements with the local FD staff. Rarely are formal agreements made to share the management responsibilities.

Conservation authority employees are few in numbers, so relatively ineffective, even when interested in actively pursuing conservation initiatives.

Most forest communities provide labor, guard and oversight activities in protected areas in exchange for privileges to collect or pursue agricultural and other income generating activities on an informal basis. These arrangements clearly provide the potential for successful conservation partnership activities, if agreements are worked out and the community partners are trained to develop capacities for these types of activities.

Potential AF supported pilot public-private partnerships are only sustainable after completion of the pilot initiatives. These partnerships can work only if the protected conservation values are complemented by commercial values generated either within the protected area or in sustainable development zones outside the protected area that are comparable to previous (exploitive) income generating activities.

C. Site Selection and Analysis Process

There are only 10-15 state forest protected areas (National Parks (NP), Wildlife Sanctuaries (WS) Reserve Forests (RF), or Game Reserves (GR) with possible natural forest remnants that might be conserved or regenerated. Given the many factors against working in formal protected areas (degraded status of many of the state forests, possible lack of staffing and funding, local FD reluctance to collaborate with the AF and its potential local NGO/CBO partners) the team recommends that other natural forest remnants in the unclassified state forests and privately owned forests be considered as additional or alternative foci for natural forest conservation, regeneration and biodiversity protection.

The Chemonics International team identified, visited and made rapid appraisal assessments of six protected area sites in four eco-regions based on secondary information and discussions with AF Board and other key informants. This involved both field observations of the protected areas to assess their biophysical condition and meetings with stakeholders to assess threats and opportunities for AF pilot public-private partnership projects. More detail and attention was given to sites that the team regarded as most promising for pilot activities.

D. Rapid Appraisal Results and Recommendations

D1. Srimangal Protected Areas and Other Natural Forests

Three state forests in Sylhet Division were subject to rapid appraisal assessments using the criteria as laid out above. All three protected areas are of the same semi-moist tropical forest evergreen/deciduous forest type.

Each of the state forests is located close to tea plantations on private estate or leased USF lands. The plantation areas bordering the protected areas are in most instances not in plantation crops but remain as scrub forest lands. Finlay's tea estate has regenerated its own natural forest on a 50-hectare patch of tea plantation lands. Tea estates were visited and complementary pilot AF activities on other such tea plantation areas were considered as part of the rapid appraisal exercises.

Lawachara National Park was formally established in 1996, incorporating an area of 1250 hectares.

Satchuri Reserved Forest, comprises an area of about 1760 ha of which 80 hectares are in natural forest and the remainder in long term rotations (primarily teak and mahogany) and short term rotations (primarily *Acacia mangium*). Conversion of the natural forest to plantations began in the 1950's.

Rema-Kalenga Wildlife Sanctuary has an original area of 1095 hectares that was gazetted in 1981. It was expanded to 1,795 hectares in 1996. It now includes 85% of the high forest remaining in the much larger and adjacent Tarap Hill Reserved Forest.

Legal provisions pertaining to national parks, reserve forests and wildlife sanctuaries are incorporated as Annex A to the report.

Summaries of the site analyses for these three sites are included in Annex B which appears at the end of the strategy document. Full details of the analysis are available in sections 2.1, 2.2 and 2.3 of the Site Selection Inventory and Monitoring Report.

D1.1 Lawachara National Park Recommended AF Activities

The approach the AF should try to use is to negotiate with the FD to manage Lawachara and the surrounding reserves on a conservation basis rather than a production basis. This agreement could include (but would not necessarily be limited to) the following:

- Convince the FD to include a 281 ha extension to the north of the current gazetted area. The extension would incorporate most of the remaining plantations in West Bhanugach Reserve Forest that are greater than 25 years of age. The addition of this area would add habitat used by important forest dwelling wildlife species, thus improving their population viability and maximizing the area of primary biodiversity value under conservation management.
- Drawing on the existing management plan developed under the Forestry Sector Project for Lawachara National Park, define and agree on management zones and actions to be undertaken in each zone.
- Provide support to BFRI to conduct literature reviews on uneven aged/selective plantation management, and on natural forest restoration. Have BFRI develop research protocols for these areas and support actual research.
- Identify a local NGO to work with stakeholders in the sustainable use zone (participatory plantation development, agro-forestry, sustainable fuel wood harvest from natural forest areas, etc.).
- Identify an NGO to begin development of basic interpretive facilities for the park (nature trails, sign boards, etc.).
- Consider turning management of the guest house over to the private sector on a lease basis, as a means of income generation.
- Develop private sector partnerships with an ecotourism operator, hotel and tourist facilities in the Srimangal area.
- Negotiate with the GOB (Treasury, MOEF and FD) the possibility of having a portion of the revenues generated by the park and surrounding reserves be retained locally for park management purposes and for the possible creation of a community conservation fund which would support community efforts in biodiversity

conservation (and perhaps some social works activities such as schools, dispensaries, etc.).

Zone	Management Objective	Possible Partners
Ecosystem management zone	Long term protection and rehabilitation of remaining forest cover (all existing high forest) and selected areas that can be restored to natural forest cover	BFRI and FD. Ecotourism NGO, for interpretive center, etc.
Habitat management zone	Restoration and/or manipulation of habitat for selected wildlife species (e.g., gibbons and langurs). These zones are likely to be areas converted to agricultural land by the forest villages, encroached areas along the periphery and long term plantations.	BFRI for restoration guidance, NGO for community facilitation and mobilization of community forest villages
Sustainable use zone	Sustainable use of plantations using uneven aged or selective management techniques, or other silviculture techniques consistent with biodiversity conservation. Better management of agricultural areas and habitation including reclamation of certain village betel areas and establishment of participatory plantations and natural forest cover in peripheral areas.	BFRI for uneven aged management, NGO for better management of village agricultural and forest village lands and related buffer zones.

D1.2 Satchuri Reserved Forest Recommended AF Activities

- Satchuri RF is recommended either as an alternate to proposed AF activities in Lawachara National Park (in the event that negotiations for Lawachara NP activities are unsuccessful), or as a site where experience from Lawachara could be adapted, when additional funding becomes available to the AF. Activities would be broadly the same as for Lawachara- working through local NGOs, develop a zoning system permitting controlled harvest in certain areas by local people who currently rely on forest resources from the area, while restricting use in others.
- For the full benefits to be realized it would be better if Satchuri Reserved Forest be upgraded to a National Park as well. This would better ensure its protection and enable the AF to focus resources on a collection of sites that captures the range of biodiversity of the Srimangal eco-region. However, any upgrade would have to be complemented by commitment by the FD and local stakeholders to actually implement the protection provisions, even though the area may generate fewer benefits in the short term.

D1.3 Rema-Kalenga WS Recommendations

AF should verify the assertion that the southern section of the Wildlife Sanctuary has forests in much better biophysical condition than in the northern areas where the rapid appraisal was pursued. Unless this is the case, it is not recommended that pilot activities be considered in Rema-Kalenga WS.

D1.4 Recommendations for Private Sector Forest Tea Estate Program

- AF should consider developing a tea estate program in the Srimangal area. It would target estate managers, particularly those with estates proximate to the state forest protected areas, and encourage them to set aside areas in natural forest.
- To encourage other estates to follow Finlay's lead, specific activities should include dialogue with the tea board, promotion of site visits from other estate managers to Finlay's, and policy dialogue on possible financial incentives such as tax relief and the elimination of royalties paid to the FD for cutting estate-planted shade trees. This program could also explore alternative income sources and incentives for estate owners to maintain workers on a year round basis.

D2. *Sal* Deciduous Forest of the Central Plains: Madhupur National Park

Madhupur National Park was gazetted in 1982 with an area of 8,437 hectares, of which 8,197 hectares is located in the northeastern part of Tangail Forest Division and the remainder in Mymensingh Division. The national park was created out of a much larger claimed reserved forest area of more than 40,000 hectares. Both national park and reserved forest areas have long been the subject of dispute by both Garo minorities claiming indigenous rights to the land and in-migrants who claim they had purchased former zamindar titles to the land.

Madhupur National Park is a remnant of the very extensive deciduous forest that once covered the central plains of Bangladesh. In its natural state this forest has a canopy of tall *sal* (*Shorea robusta*) trees, a number of fire resistant associates and a rich multi species under story. Currently, the present extent of forest cover within Madhupur National Park and immediately adjacent areas is estimated to be less than 4000 ha.

D2.1 Rapid Appraisal Analysis Results

Summary results of the rapid appraisal assessments are included in a Table in Annex C at the end of the strategy document.

The site has low pilot project potential in the short-term in spite of some positive aspects of *sal* deciduous forests that make it a good target for conservation activities (ability of *sal* forest to regenerate, local preference for *sal* forest and high tourist potential).

It would be extremely difficult to resolve social issues (mainly concerning land rights) with surrounding tribal and Bengali communities. There is much animosity between the FD staff and local communities.

Given the land tenure problems, social animosity between the Garo indigenous communities and in-migrant Bangladeshi communities, and continual disputes of both communities with the Forest Department, the Chemonics team recognizes that any efforts to resolve the above problems will take considerable time and resources, likely to be well beyond AF's initial means. However, it is critical that measures are initiated to resolve the situation. In the longer term, there

is a need to look at transfer of forest management responsibilities from FD to local (Garo) communities.

D2.2 Recommended AF Activities

The following pilot activities are recommended in the short-term:

- Support a study that documents the extent of *sal* forests in the Madhupur area (both classified and unclassified), their level of degradation and their potential for regeneration and restoration;
- The AF should engage environmental or forest law NGOs to support activities to resolve the many outstanding forest cases filed against the local population. The NGO will need to provide legal aid to ensure that due process with respect to the forest laws are followed.
- The environmental law NGO should help the FD address and clear as many as possible of the informal charges made against FD staff concerning collusion and direct involvement in illegal activities.

These activities are likely to be successful as long as the FD and local communities commit to changing the present untenable situation. Moreover, these activities will provide the groundwork and climate to initiate a model of joint FD and community (assisted by NGOs) conservation management of a significant area of *sal* forest.

The following longer term strategy is recommended for the AF:

- The AF should work to secure FD recognition only. It cannot now or in the foreseeable future control illegal activities carried out by local (Garo or in-migrant) communities.
- The AF should initiate negotiations with the FD to transfer management responsibilities for certain areas outside the park to local – particularly Garo – communities.
- Develop a pilot initiative whose aim would be to: 1) demonstrate that joint FD - community forest management can conserve or regenerate natural forests, generate income and protect biodiversity better than FD management alone; and 2) show that the biodiversity values of the natural forest patches provide all parties- community, FD and other stakeholders- with incentives to conserve forests and protect their biodiversity on a sustainable basis.
- Carefully select an implementing NGO by consulting all stakeholders to ensure they are comfortable with the proposed selection.

- For the selected site, develop a participatory biodiversity management plan involving and agreed to by all the key stakeholders.
- Specify roles for each of the partners including clear guidelines as to what is acceptable under the rules that apply in the pilot area.
- Transfer major management responsibilities presently taken on exclusively by the Forest Department to local forest communities, with the support of local NGOs.
- Analyze the economics of participation for forest communities, NGOs and FD participation to ensure that all stakeholders have strong and demonstrated incentives to participate in the pilot scheme activities.
- Use the AF public awareness campaign to engender forest community partner and broader public support for the strong measures that the FD and other local authorities will have to take to halt illegal local commercial activities by resource-using enterprises (brick-kilns, saw mills, furniture makers).

D3. Chunati Wildlife Sanctuary

The Chunati WS comprises a range of low hills in the extreme southern part of Chittagong Forest Division. The area is easily accessible from Chittagong city via the national highway to Cox's Bazar, which directly borders its eastern boundary over a distance of about 15 km.

The original gazetted area (in 1986) was approximately 7,668 hectares. The forest type is semi-moist tropical evergreen/ deciduous forest. It also includes the bamboo subtype.

D3.1 Rapid Appraisal Analysis Results

Summary findings from the rapid appraisal are presented in a table included as Annex C to this report.

In 1999, FD staff estimated that less than 50% of the sanctuary was covered by dense (albeit degraded) woody vegetation, with the remainder in open scrub/herbaceous vegetation (30-40%), plantations (~20%) and agriculture (~10%). Contiguous closed canopy forest was confined to small pockets on steep inaccessible terrain. Extensive plantation establishment continued under the Forest Resources Management Project until 2001 which contributed to the destruction of natural vegetation.

A fly-over of the Chunati WS area by the Chemonics team in March, 2002, suggests that agriculture lands have increased significantly, as has the area in scrub/herbaceous vegetation. Small pockets of high forest continue to exist only on the steep slopes.

The sanctuary still supports an important elephant population, with population estimates ranging from 10-40. Regardless of the numbers, there are still elephant sightings and elephant related problems (primarily crop depredations). The elephant population is (or was) part of a larger

population scattered over the CHT and down through the Teknaf peninsula and contiguous with populations in the adjacent parts of India and Myanmar. Movement routes or corridors in and out of the sanctuary may have been cut off.

D3.2 Recommendations for AF Activities

The overall recommendation is that:

- Given the current open access nature of Chunati and all the time and resources it would take to deal with this problem, it is not recommended that Chunati WS be considered for pilot “on-the-ground” type activities.

The following other activities are recommended for AF consideration and possible support:

- Support for efforts to expand the declared wildlife sanctuary area to the north and south by 5162 hectares to include reserved forest areas, thereby increasing the area of elephant habitat under conservation management.
- Expansion of the sanctuary to the east to include the elephant movement corridor located at Harbang, and establishment of linkages to the Doolharza Safari Park.

Although neither of these actions would solve the problems of human access to the wildlife sanctuary and the continuing degradation of sanctuary resources, both would contribute to the viability of the existing elephant population.

D4. Teknaf Game Reserve

The Teknaf Game Reserve is located south of Cox’s Bazar on the Teknaf peninsula, with an original area of 28,688 acres (approximately 11,475 hectares) gazetted in 1983. The gazetted area occupies the middle part of the Teknaf peninsula from Ukhia south to the Thana town of Teknaf. The gazetted area is all reserved forest land, located within Whykheong and Teknaf ranges and subdivided into 10 forest blocks, and two forest divisions, north and south.

Teknaf GR consists of gently sloping to rugged hills and cliffs running down the central part of the peninsula with a north-south length of 30 km and an east-west width of 2-6 km. The reserve is accessible from Cox’s Bazar along its entire eastern edge by an all weather road, and from the western side along an unbroken stretch of beach from Cox’s Bazar to Teknaf, which is used as a road by light four wheel drive vehicles during low tide.

The reserve and adjacent coastal area are comprised of a broad variety of habitats within a relatively compact area, including representative but extremely fragmented and degraded examples of evergreen and semi-evergreen hill forests within the reserve, and mangrove vegetation along the Naf River to the east.

D4.1 Rapid Appraisal Analysis Results

The original wet evergreen and semi-evergreen forest has been severely degraded. Threats in the form of uncontrolled harvesting of resources are overwhelming. The reserved forest and game reserve within it are treated as “open access resources” by the local communities. See Annex C at the end of the strategy for the summary of the appraisal findings.

D4.2 Recommended AF Activities

The overall recommendation is that:

- Given the current open access nature of Teknaf GR and all of the time and resources it would take to deal with this problem, Teknaf GR should not be considered as a first choice for pilot project activities.

It is recommended that AF consider the following other support activities in the short-term:

- Support for negotiations to expand the game reserve to include the remaining portion of the Whykheong Range and parts of the Ukhia and Inoni range/reserved forests.
- Initiate efforts to upgrade the status of Teknaf Game Reserve (and the proposed extension) from game reserve to wildlife sanctuary.

E. Activity Recommendations for Eco-Regions with Major Protected Areas, Not Subject to Rapid Appraisals

Meetings were held with the project director and staff of the Sundarbans Biodiversity Conservation Project to ascertain if there are AF opportunities in the mangrove forest eco-region. In addition, an over-flight of Chittagong Hill Tract areas was arranged to determine if there are any remaining substantial natural forest patches in the region’s extensive state forests (mostly reserved forests and unclassified state forests).

- It is recommended that the two largest areas of remaining tropical forest- mangrove forests in the Sundarbans southwestern coastal region and the moist tropical forests in the Chittagong Hill Tracts in southeast Bangladesh- not be considered for pilot project activities at this time.

E1. Sundarbans Tropical Mangrove Forests in Southwestern Coastal Areas

There are substantial areas of natural tropical mangrove forests remaining in the Sundarbans. However, the \$80 million financing from the ADB for the Sundarbans Biodiversity Conservation Project (SBCP) suggests that, at this stage, it would not be appropriate to use scarce AF resources for further development of a pilot biodiversity plan for a section of the Sundarbans.

Implementation plans for the SBCP are currently being finalized. This includes the funding of approved NGOs to work with local communities on income generating activities in areas just outside of the formally protected areas. The challenge for the project implementers is that, in

spite of the unique conservation value of the flora and fauna in the Sundarbans, there are large threats posed by the substantial commercial value of the mangrove areas as the basis of livelihood for densely settled population areas on the northern edges of the Sundarbans. The AF may well be able to learn from the SBCP experience in dealing with these threats and adapt them to AF pilot site activities. At this stage there are unlikely to be specific opportunities appropriate for AF interventions in the Sundarbans.

There may be some room for AF collaboration with SBCP in a proposed network of institutions and experts with skills and experience in monitoring the status of biodiversity, a biodiversity database and information management. The public awareness materials developed and disseminated by SBCP on key species such as tigers and biodiversity of the Sundarbans may also be valuable for the AF public awareness strategy.

E2. Chittagong Hill Tracts

The location and condition of the CHT state forests were very much unknown but thought by some to have significant biodiversity potential. To verify the status of CHT forests, the Chemonics team, in collaboration with USAID and the Winrock project, MACH, was able to arrange an over-flight of the region.

A significant area of what appeared to be untouched, closed canopy high forest was found in the small, southernmost tip of the CHT surrounded by Myanmar on the south, east and west. Although size was difficult to assess accurately from the air, a conservative estimate would place it over 25 square kilometers. In the north, a significant area of high, closed canopy forest was found directly north of Lake Kaptai, also estimated to be in the neighborhood of 25 square kilometers in size. Unlike the area in the south, this area showed significant signs of human use around the periphery, mainly in the form of shifting cultivation combined with some logging. The center of the forest appeared to be completely intact. Together these two areas appear to represent Bangladesh's largest and perhaps highest concentration of forest biodiversity, possibly equal to or greater than that found in the mangrove forests of the Sundarbans.

E2.1 Recommended AF Activities

- Provided that the renewed political uncertainty and lawless conditions in the CHT are resolved and the GOB grants easier access, the Chemonics team recommends that the AF accord these areas the highest priority in terms of intervention.
- Even so, it is not recommended that AF should rely on the development of successful public-private partnerships in the CHT for achievement of the key element of its short-term strategy. There are too many activities, uncertainties and preliminary activities that will have to be pursued as prerequisites.

The recommendations for the two CHT areas with remaining natural forests are for the initiation of biodiversity inventories as soon as conditions in the CHT stabilize sufficiently to permit field work in remote areas. The approach and recommendations are included as Section VII.B2. Biodiversity Inventory Assessments for the Chittagong Hill Tracts.

F. Monitoring and Evaluation of Site-Specific Activities

Periodic monitoring and evaluation of protected area management activities will be a vitally important means both for ensuring their success, and of tracking the delivery of programs funded in whole or in part by the AF. Many of the potential partner NGOs already have strengths in monitoring and evaluation, but these will need to be expanded to include other partners (including CBOs), and modified for the protected area/biodiversity conservation context.

In addition, a system recently developed by the World Commission on Protected Areas for evaluating protected area management progress is recommended for adaptation to AF-funded programs. This system assigns scores of 0-3 to standardized criteria which are summed to obtain a “management progress index”, considering legal issues (legislation, boundary demarcation, enforcement), management issues (objectives, funding, information gathering, planning, staffing, management action, information management and monitoring), and stakeholder involvement (communication with local stakeholders, local support). The index can be used to evaluate progress at a given area over time, and also to compare different areas, providing an important tool both for adjusting program activities and for allocating financial and other resources. Ultimately, it also provides a tool for demonstrating successes and activity strengths to decision-makers, and hence for driving policy change. The system is outlined in Annex D.

SECTION VII

Intermediate Result 5: Collection and Exchange of Information on Natural Forest and Biodiversity Resource Status facilitated

A. Rationale

The major proposed AF interventions are to develop and support public–private partnerships in forest ecosystem management to achieve forest conservation and biodiversity protection. To assess whether these objectives are being accomplished there needs to be an inventory of the present status of the natural forests and measurement of their biodiversity for at least all field sites where AF supported activities are proposed.

A1. Biodiversity Inventory and Monitoring

Initial natural forest assessments can be rapid appraisals backed up by secondary data and/or remote sensing imagery. These sources will provide key information to help the AF with site selection for priority interventions. Where there is little secondary information available, the initial appraisal would have to be followed up by a more systematic ground assessment and analysis of threats and opportunities regarding the natural forests and their biodiversity.

The latter is the case for the remote areas of the Chittagong Hill Tracts, where two apparently undisturbed, closed canopy natural forests were observed during a low-level over-flight. Once the political conditions in CHT stabilize sufficiently to permit access by research teams in remote areas, the AF must act quickly to address potential forest conservation and biodiversity protection opportunities. The significance of the potential biodiversity of the natural forest patches requires that the AF gives priority to and commits substantial resources for ground-truthing and assessment of their condition and status, and then conducts formal technical surveys of their biodiversity.

Once the decision is made to commit resources to achieve specific objectives at a particular site, it is essential that prior to the intervention there be a more formal assessment of the status of biodiversity at the site. Quantifiable indicators of biodiversity or proxy indicators that are sensitive to change in biodiversity need to be established. To compare status and performance across different sites there must be common measurements made at each site. This baseline biodiversity information will also provide the managers of the interventions with more accurate and detailed information needed to adjust and fine-tune their implementation plans.

Periodic monitoring of biodiversity status should be carried out to establish how biodiversity status changes over time. If the intervention is successful, there should be no loss of biodiversity. If interventions are meant to regenerate natural forest, then the biodiversity status should improve (i.e. there should be larger populations of threatened species and even re-establishment

of populations of previously absent species). The same methodology of assessment (i.e. sampling framework, field observation approaches and key indicators of biodiversity) needs to be used every time to ensure that temporal comparisons are valid. It is also preferable to use the same basic approach and preferably the same indicators across different intervention sites for purposes of assessing cross-site effectiveness of interventions. The periodic monitoring of biodiversity status allows the public and private sector co-managers to adjust their implementation plans according to the changes in biodiversity that may have been caused by their efforts or by other events that are out of their control.

Development of methodologies and implementing forest biodiversity assessments and monitoring schemes require substantial technical expertise to be done well. “Biodiversity” is an abstract concept that is not practical to measure directly for complex tropical forest ecosystems. Large numbers of flora and fauna species have to be assessed. Many species are difficult to observe and identify. Populations, especially of fauna, may be even more difficult to count accurately.

Assessing and monitoring forest biodiversity in a manner that provides valid temporal comparisons is likely to involve mainly specialist experts from government agencies and a few NGO partners. There will be limited roles for the local NGOs, CBOs and forest communities working to implement the ecosystem management plan. However, the assessment process should begin with a participatory assessment to determine indigenous knowledge about and uses of forest resources. These can identify areas with significant biodiversity and natural resource products that are important to local populations to complement as well as help guide and focus the scientific efforts. Accurately assessing biodiversity and then systematically monitoring its status is so important to the overall objectives that these expert-driven inventory and monitoring activities are still warranted as AF funding priorities. The key to their usefulness at the NGO/CBO implementation level is to ensure that the results are discussed, understood and acted upon by the local NGOs, CBOs and communities implementing the forest ecosystem management plan.

A2. Biodiversity Data/Information Collection, Database Management and Exchange

Biodiversity data collection and analysis capabilities are scattered among several institutions. The Chemonics team found that in general, Bangladesh has excellent data collection and analysis capacity on the flora side, particularly with regard to trees and production forestry. There appears to be some weakness on the faunal side, where many wildlife census activities are carried out without adequate technical supervision.

There is substantial information available, much of it organized into various databases in government agencies, universities, major environmental NGOs and networks, and internationally financed project offices, on the status of forested areas and their biodiversity. There is also considerable expertise in the management of these databases. This information has considerable potential value for the AF and its public and private sector partners, both in relation to site-specific interventions and for pursuing a nation-wide strategy of forest conservation and biodiversity management.

Although the FD and its RIMS/GIS database is a major source of this information, other data on forest biodiversity, especially information on fauna, is widely scattered over many institutions. The value of the data is not fully realized because it is not always readily available to all stakeholders, and the information from different databases is difficult to integrate.

The collection and exchange of biodiversity information and development of integrated databases is also likely to be dominated by technical expertise, although one or more of the major NGOs may have the in-house capacity to play a major role in a tropical forest biodiversity information network. Another concern is the use of network information and whether the expense of encouraging the formation of such a network is justifiable (i.e. will it meet its operating costs?). There must be user-friendly access for non-experts, such as local NGO managers or staff in charge of AF field initiatives.

A3. Monitoring and Evaluation of Impacts of AF Interventions on Local Forest Community Participants

There is a need to monitor and evaluate the impacts of ecosystem management projects on forest communities participating in their implementation. It may be difficult to sustain community participation in project interventions unless the new sustainable management zones generate sufficient income from participation in the forest conservation and biodiversity protection activities. The monitoring and evaluation of impacts on the community will also provide the community with the opportunity to play a role. It may be necessary to generate some hard data on changing income and quality of life indicators for formal assessment purposes, and to monitor over time the quantitative impacts on AF-sponsored public-private partnership activities on local communities and stakeholders.

B. Approach and Methodologies for the Design of Biodiversity Baseline and Monitoring Assessments

B1. Biodiversity Inventory and Monitoring

The Chemonics team considered a number of options for developing an inventory and monitoring program, but ultimately chose the Habitat Suitability Index model given the FD's RIMS/GIS data base. This data base is the best available descriptor of land units having uniform ecological conditions in Bangladesh. The data base and associated mapping based on interpretation of SPOT multispectral satellite data, existing forest cover maps and FD plantation records lends itself particularly well to HSI modeling, and provides a relatively low cost mechanism to address changes over time providing updated imagery can be procured and analyzed, and funds are available for some limited ground truthing.

Additionally, as the AF gains monitoring experience, the HSI model can be adapted to more participatory monitoring methods that involve multiple stakeholders, integrate their perspectives, and recognize the central role that local people can play in planning and managing their use of the environment. Participatory monitoring shifts the emphasis away from externally-defined and driven programs and stresses the importance of a locally-relevant process for gathering, analyzing and using the information. It means involving (groups of) people in stages of monitoring in which they have not previously been involved. Inevitably, this will require some

form of capacity-building: either of external people to understand local systems of environmental monitoring, or of local people to understand external systems, or both as they develop a mutually acceptable process. Thus, monitoring moves away from being an activity undertaken for, and by, outsiders, to one that builds on local community activity and increases its capacity to record and analyze local conditions. The information generated should contribute to improving learning and action, in addition to the regulatory, watch-dog function of many conventional monitoring programs.

The Chemonics International team believes that the Capped Langur Habitat Suitability Index (HSI) Model, developed by Tecsum under the Forestry Sector Project (and applied to Lawachara NP and Rema-Kalenga WS), meets all necessary conditions of being a discriminatory indicator of forest biodiversity in most of Bangladesh's tropical forest conditions. The population of capped langurs in Bangladesh is relatively small but significant in terms of world efforts to save an endangered species, and significant in terms of relatively easily measurable populations in protected forest areas. The capped langur is an upper canopy tree dweller, and an implicit assumption of the model is that if measurable improvements occur in the upper canopy layer (greater closure of the canopy, presence of mixed species including fruit bearing trees, etc.), then the middle and lower level vegetation will also have improved.

The FD's RIMS/GIS covers all state forest protected areas, except Madhupur and the Chittagong Hill Tracts. Land use types and inferred values of stand age, canopy closure and fruit-tree abundance, enable a single HSI to be assigned to each type of ecological condition, and hence to polygon areas of land having the same ecological condition, on the state forest GIS maps. The HSI is multiplied by the area inside the polygon to generate a Habitat Unit (HU) value for each polygon. HU values can then be aggregated for specific zones delineated for the management of biodiversity (e.g. an ecological management zone for long term protection and rehabilitation of remaining forest cover; a habitat management zone for restoration and/or manipulation of habitat for selected wildlife species; or a sustainable use zone of plantations harvested under uneven-aged or selective management techniques, consistent with biodiversity conservation).

An initial census of capped langurs in each of the management zones is required to establish baseline population status. Subsequent monitoring surveys of capped langur populations will enable correlation between capped langur populations and forest (biodiversity) improvements over time, as measured through remote sensing or field surveys, or a combination of such techniques.

A major advantage of this approach is that it can be extended to other state forest areas (e.g. USF areas) not presently covered by the RIMS/GIS database, and can be adapted to develop habitat suitability models for other key species where the use of capped langurs is not appropriate (e.g. possibly for remote natural forest patches in the Chittagong Hill Tracts).

B2. Biodiversity Inventory Assessment Program for Chittagong Hill Tract Forests

Current high resolution, remote sensing imagery of the natural forest areas identified in the CHT over-flight, should be acquired immediately and subjected to analysis to determine if they are indeed undisturbed. The boundaries of the forest areas from the maps should then be compared

with FD management plans and reserved forest area maps to determine whether the areas are all within RFs or partially within USF areas. This would enable the legal protected area status issues to be addressed prior to any opening up of the areas to outside stakeholders.

Once the CHT areas are opened up to AF sponsored research teams, support should be given for environmental NGOs and specialist volunteer associations, preferably groups with established ties with Hill Tract indigenous communities, to conduct preliminary rapid appraisal assessments of their biodiversity, including recommendations for key indicator wildlife species.

The preliminary assessments should be used to plan and implement formal baseline surveys of both flora and fauna biodiversity, including the quantitative estimation of key species, their distribution and habitat use. Where there are local indigenous CHT communities working or living close to the survey area (as is probably the case in the identified northern CHT natural forest patch) they should be asked to provide their own information and knowledge about species and populations in the area. Even if the information they provide cannot be regarded as completely reliable, indigenous knowledge may provide an important complement to scientific studies. The effort will help establish the modus operandi of the AF to involve local populations and to encourage public-private partnerships in forest conservation and biodiversity protection.

B3. Biodiversity Data Collection, Database Management and Exchange

The preliminary institutional assessment, analysis of biodiversity data collection and assessment of analysis capacities carried out by the Chemonics team needs to be formalized and completed.⁴ This institutional survey will provide a basis for identification of partner institutions and experts that should be encouraged to participate in an AF biodiversity information network for the exchange and use of information, the identification of information gaps that need to be filled and the analysis needed for effective pursuit of AF interventions.

It is essential during the early stages of its existence that the AF only commits modest funds to biodiversity database management. The AF should try to work out an agreement with the MOEF and the FD to continue to fully fund and also facilitate access to the RIMS/GIS database on state forests for AF partner institutions. If the RIMS/GIS database is to serve as the core information source and repository for biodiversity information in the long-term, then agreements would have to be negotiated and arrangements made for both the expansion of the database to include entry of outside information into this database (e.g. for USF and private forests areas, and for non-tree based information on biodiversity). There would also have to be regularized access of proposed non-governmental information network institutions to gather data from the RIMS/GIS database.

If the FD is reluctant or unable to expand and share access to its information base with private sector member institutions, then the long-term strategy of AF should be to either identify one of the larger NGOs working at the national level or consider AF itself to become the clearing house and the depository of the biodiversity information database.

⁴ For the summary findings from the institutional assessment of biodiversity data collection and analysis capacities see Annex C of the Site Selection and Inventory and Monitoring Report, prepared by Dr. Seyler. The report is included with this strategy document as Annexes Band C.

The decision as to where to permanently house the information network does not have to be made immediately. If an informal network of partner institutions is developed first and shows tangible benefits, then it may well be easier to generate funding to sustain it on a permanent basis. Each partner in the network must be able to see some concrete benefits from joining the network, whether the ability to improve the quality of a dataset, acquire access to other datasets, or enter a long-term relationship with another organization. As the network becomes established and recognized, economies of scale are realized and duplication of effort is minimized, external investment may well be attracted on a scale not likely to be achieved by individual partners.

B4. Monitoring and Evaluation of the Impacts of Ecosystem Management on Forest Communities and Local Stakeholders

To sustain community participation in AF ecosystem management for forest conservation and biodiversity, there must be foreseeable benefits for community participants, even if only attainable in the long-term. The benefits may not all be economic but in total they must be comparable to the benefits generated from activities prior to the introduction of the ecosystem management plan and their participation in its implementation. If this is not the case then community participation in the scheme may not be sustained and alternative (again possibly exploitive of the natural resource base) activities and income generation will be pursued.

It may be very difficult to learn from formal socio-economic surveys what former products and income were generated from activities in and around the protected forest area, especially if some of the income was generated in illegal ways. It is recommended that an independent NGO with skills in Participatory Rural Appraisal (PRA) be hired to carry out a participatory M&E program at each site where pilot activities involving community management are initiated. The PRA team should be able to use a combination of methodologies including group and individual interviews, use of key informants, secondary data, etc. to monitor the impacts of working on the ecosystem management schemes. Validation of key findings will have to be achieved by getting consistent findings from several independent sources. The same M&E team should also monitor the impacts of the scheme on other stakeholders in the forested areas to determine whether the new protected area management regime has been accepted or new ways of exploiting the resource base have emerged.

C. Key Recommended Actions

- The AF should support the development of the Capped Langur HSI model, building on the FD RIMS/GIS forest cover information system for use in baseline biodiversity assessments and monitoring in protected forest areas selected for AF pilot projects.
- The AF should encourage the expansion of RIMS/GIS database to cover USFs and private forests being managed to protect biodiversity or to regenerate natural forests.
- The AF should extend the HSI modeling approach to cover forests where species other than the capped langur are the key indicator species.

- The AF priority should be given to assessing natural forest status and inventories of the biodiversity of two large, apparently undisturbed, natural forest patches in remote (southern and northern) areas of the Chittagong Hill Tracts.
- The AF should encourage the development of an informal network for sharing of biodiversity information, made up of institutions and individuals with expertise in biodiversity information collection and analysis, information database development and management.
- The AF support for the development of a more formally integrated biodiversity information database should be deferred until external funding for such an initiative becomes more likely and it becomes clearer as to which partner institution should house and maintain the database and provide assured access to the entire network.
- The AF should encourage the participation of local NGOs, CBOs and forest community stakeholders in inventory and monitoring activities where feasible, and ensure that biodiversity databases are accessible and useful to local FD, NGO and CBO managers, and technical staff of pilot projects.
- The AF should contract with independent NGOs to implement monitoring and evaluation assessments of the impacts of pilot ecosystem management projects on the forest community participants and other stakeholders. PRA approaches are recommended, with validation of results achieved through consistency of findings from multiple independent sources.

SECTION VIII

Intermediate Result 6: AF Public Awareness Strategy Initiated

A. Rationale

There is an increasing awareness of the importance of environmental issues in Bangladesh, particularly among the literate and more educated. There is limited awareness of the concepts and significance of sustainable use of forest resources, the importance of forest conservation and the protection of forestry biodiversity, for community development and sustainable livelihood opportunities. Awareness is especially limited among the poor and in rural areas, where people are dependant on wood and other resources just to make ends meet and feed their children.

The need to retain tree cover may be understood, but the reasons for the superiority of multi-aged indigenous species over plantation forest is less clear for all but the very few. The public at large may be able to translate biodiversity protection in terms of saving endangered large animals, but they are less clear about the importance of floral biodiversity, especially on why it's important to protect the undergrowth instead of clearing it and planting agricultural crops.

For the AF initiatives to succeed, it is essential that there is both broad public understanding of the significance of the objectives and direct support for their pursuit at the local forest community level. AF needs a strong public awareness program that develops environmental awareness materials for the potentially more technical and abstract subject matters of forest conservation and biodiversity protection. It also needs public awareness programs, use of mass and traditional media, written and visual materials that effectively reach various target audiences (readers and viewers). Language, media used and level of sophistication of materials and ideas presented, all need to be adjusted to the specific 'public' targets and stakeholders.

The AF mandate requires it to be innovative in its approach to forest conservation, focusing on public-private partnerships for conservation and protection, rather than the traditional government and FD approach of excluding the public from areas that are to be protected. The public needs to understand the reasons why such partnerships are needed, what is required to make them successful, and that they can provide livelihoods for those community members joining such initiatives.

The public at large may abhor illegal use and removal of resources from state forests that the FD has the responsibility to protect, but still presume that in part the FD must be at fault for not adequately protecting the resource. Stakeholders need to be aware that public-private partnerships are urgently needed to protect the forests. The public has an important stake in forest conservation. Public awareness activities need to be implemented on the importance of the "social fences" that can be created by public-private management partnerships and sustainable use of forest resources in and around the edges of ecologically critical protected forest areas. If

local NGOs and forest communities play a role in forest conservation, and the programs are being undermined by powerful commercial or political interests, the public may become outraged. An aware public can help generate a second “social fence” of public opinion that will deter many of the local elites from further forest resource exploitation.

Strong public awareness programs can effectively complement and make more successful many of the proposed activities envisaged for AF support. School environmental education programs focusing on forest conservation and interpretive programs established in national parks would benefit from materials prepared by media specialists knowledgeable of the subject matter. Public opinion and action can be mobilized through the media to support desirable shifts in forest policy and the resolution of many of the large numbers of outside forest cases filed against forest community members.

B. Approach for Development and Implementation of Public Awareness Programs

The public awareness program will have to be initiated on a modest scale and budgeted for the first three years or so, unless financial viability comes to AF more quickly than anticipated or donor funds are generated and directed to the public awareness program. It is important that public awareness programming not “get ahead” of the AF program of activities as a whole.

It is important that public awareness programs and expenditures be related, as far as possible, to current program activities, rather than be maintained independently. In the first year this implies a focus on the importance of biodiversity assessments, significant species or wildlife population “finds”, and the development of materials and promoting visits to revived national parks with interpretive facilities. Pilot activities in co-management of forests are not likely to be initiated until later in AF life, but discussions and negotiations of the stakeholder parties will be on-going. Special newspaper series, traditional media events, news coverage and materials dissemination, targeted on pilot activity sites and surrounding communities, would all help to generate public interest in the topic and the issues. The AF may have to reserve some small part of the budget to promote itself and its mission. This may pay dividends in the form of increased interest from the private sector in providing some start-up cost support or funds to augment the capital of the AF.

There is already a strong array of published materials available in Bangladesh that can be adapted to the specific objectives and needed focus to present the forest conservation activities. The public awareness campaign can build on materials already available in-country. These should be used and adapted with the permission of the agency that developed them. Specialists working with the AF program should try to link themselves and the AF with a network of informal environmental public awareness projects and initiatives. Linkages with major funded programs, such as the Sundarbans Biodiversity Conservation Project could be particularly helpful.

While the public awareness campaign is being built up there may be opportunities to send potential media and other public awareness specialists to training workshops to introduce forest conservation concepts. The specialists should also be invited out on field assignments, so that their subsequent reporting and preparation of materials reflects the field issues and the media specialists’ understanding of them.

Although most early activity is likely to focus on field preparations in and around remaining state forests, it is important that the public awareness campaign be balanced between center and periphery.

Once the AF program of pilot activities in co-management of forest resources is implemented, the public awareness program should turn its attention to developing programs that demonstrate the success of stakeholders in adapting to conservation and sustainable development activities. How to resolve community conflict issues with other stakeholders and the Forest Department might provide programming that is effective in raising awareness of the importance of resolving issues and cases where this is being accomplished.

It is proposed in an earlier section of the strategy that the AF should organize open public workshops on key issues for forest conservation and biodiversity protection. The public awareness campaign should be used to indirectly promote these meetings by ensuring that the core issues are aired on the radio and /or discussed in newspaper articles and other public fora.

Most of the components of the public awareness strategy outlined so far involve activities complementary to other activities of the AF. This needs to be balanced by increasing amounts of resources being spent on developing a broad-based public awareness of issues and support for forest conservation programs. A key target in such a program should be environmental education in the schools, both schools in urban areas and those in more informal settings where the forests may provide a back-drop of immediate relevance.

There also needs to be an opportunity for the public to be able to interact with the AF. Development of a web-site for the foundation would help provide for this. AF could post news and information on the progress of its various initiatives. The main purpose of the site would be to provide a place where committed public members can interact with each other. An advantage of such a site is the linkages that can be made with international audiences involved in the same issues and to those sites with relevant databases and information banks on forest conservation and biodiversity protection.

C. Key Recommended Actions

- Media producers, journalists, and other public awareness specialists identified for regular involvement in AF public awareness programs, should be included in basic environmental awareness training workshops and be invited to go along on field trips with the AF team. This will encourage accurate, relevant and a current field-based edge to materials they disseminate or programs they develop.
- The public awareness strategy should start small, commensurate with the modest initial resources of the foundation and grow in scope as funding and programming warrant.

- The public awareness strategy does not need to start from scratch. It should build on existing environmental awareness materials and programming and adapt them to the specific context of forest conservation and biodiversity protection.
- The public awareness strategy should both promote the importance of forest conservation/biodiversity protection and what the target audience can do to help achieve these objectives.
- There should be a focus in programming on public-private partnership successes in forest conservation and how they are being achieved.
- A wide range of media, including written materials, should be used, with each designed and targeted for particular audiences, readers or viewers.
- There should be a balance between raising public awareness on specific local issues, especially those coming up in pilot activities of the AF, and more general national issues.

SECTION IX

Key Recommended Actions

To facilitate use of this document, Section IX presents a summary of all of the key recommended actions identified in this strategy report, organized by Section and topic heading:

Intermediate Result 1: The Arannayk Foundation Established as a Viable Going Concern

- USG and the GOB should complete the registration of the AF as a non-profit organization under the Companies Act as soon as possible.
- Immediately after registration of the AF as a not-for-profit organization under the Company's Act, the Board should set out its long run financial plan or "target" and determine what shorter term pursuit of funding and technical/administrative support may be pursued, so that the Foundation becomes financially sustainable sooner rather than later.
- As soon as the AF is a registered legal entity, the AF Board should move to commit resources to the appointment of an Executive Director to be appointed on an interim basis.
- The AF Executive Director, or if one is not selected initially, the temporary senior adviser to the foundation, should be encouraged to initiate discussions with potential private sector partners who might support the AF.
- The AF Board and interim Senior Adviser/ Executive Director should hire key technical and administrative staff on a temporary basis pending confirmation upon completion of recruitment and hiring of the permanent Executive Director.
- The AF Board should actively seek donor (public and private) support for setting up AF financial and administrative systems and to cover administrative and organization operating costs for the first 3-5 years.
- The AF Board should ask USAID/Bangladesh to consider project funding to support tropical forest conservation and sustainable management of production forests. The project design should include formal linkages to the AF and funding to provide AF an opportunity to become a financially sustainable entity with an Endowment Fund to finance operations. If the AF foundation is established as a going concern it may be able to take on the task of sustaining the USAID project activities after the project is completed.

Intermediate Result 2: Relationships With and Public-Private Partnerships Among Key Stakeholders Facilitated

A. Relationships Strengthened with Key Government Agencies

A1. The Ministry of Environment of Forest (MOEF)

- It is recommended that the AF Board establish and support a Forest Conservation Policy Advisory Committee and ask the Secretary of the MOEF (or if not available, his Joint Secretary (Development)) to head this committee.
- AF should support capacity building and field exposure, including opportunities to train for, observe and work on forest conservation policy issues for a wide range of MOEF senior staff, in addition to the Joint Secretary (Development) assigned to the AF Board.
- AF support for developing the key role of MOEF should be carried out in collaboration with support for NGO and other private sector partners in order to demonstrate the importance of and facilitate public-private partnerships in forest conservation.

A2. The Forest Department

- The AF should establish a Forestry Conservation Technical Advisory Committee and ask the CCF to chair this committee. The AF should support this committee and its chairman by providing funding to allow the FD and other forest management conservation, wildlife and other technical specialists to provide the AF Board with sound technical advice.
- It is recommended that the CCF should also be included in the AF Forest Conservation Policy Committee (recommended to be headed by the Secretary of MOEF).
- Capacity building of NGOs, CBOs and local communities to engage in pilot activities in forest conservation involving public-private sector participation, should involve FD staff as resource persons and as participants, as appropriate, according to the type of capacity building.
- The AF should support the use of technical expertise of the FD to help private sector natural forests to be developed on leased forest lands.
- Wherever pilot activities in forest conservation are considered at the local level AF should establish local implementation committees. This might include public-private partnerships for resolution of forest legal cases, development of protected area interpretative facilities and pilot activities for co-management of forests in buffer zones and sustainable use zones of protected areas. The FD should be one of the co-

chairs of these local committees (along with an appropriate co-chair form among the private sector partners).

A3. Bangladesh Forest Research Institute (BFRI)

- The Director of BFRI or a senior technical staff member with broad experience should be invited to participate in the Forest Technical Advisory Committee that will advise the AF Board on technical issues.
- The AF should engage the BFRI to play a major role in assessing, monitoring and evaluating natural forest patches and their biodiversity status in protected area sites.
- BFRI should be encouraged to involve the National Herbarium in identifying and classifying species, especially non-tree flora found during assessment visits.
- BFRI should be provided training and orientation to develop their capacities to initiate and manage pilot long-term participatory monitoring systems of natural forest status and biodiversity, involving local forest communities.
- BFRI would be the ideal partner to develop nursery stock of indigenous tree species found in natural forest remnant patches if a pilot program in forest restoration using framework tree species is initiated to promote forest regeneration. Training and support for BFRI should be provided so that they can work with forest communities in the participatory establishment of regenerated natural forest.
- BFRI infrastructure, local staff and facilities inside national parks and other protected areas should be considered as resources for development of forest conservation and visitor focused biodiversity interpretative programs.

A4. The Department of Environment (DOE)

- Initially AF should focus its attention and key partnerships with government agencies within MOEF on the FD and the BFRI rather than the DOE.
- The AF Board should recommend to the MOEF and seek ministry approval for the DOE to be involved as a partner of AF in the activities as listed below.
- The DOE should be consulted and kept informed of AF activities and invited to participate in policy and technical advisory committees. The DOE representatives would be expected to contribute input drawn from their experience of developing criteria, and declaring and managing ecologically critical areas.
- The DOE should be invited to join field site visits and study tours to develop capacity of officials to understand field contexts of sustainable resource and management using public-private partnerships and to observe successful partnerships elsewhere in Asia.

- Later in the life of the AF, consideration should be given to expanding the role of the DOE as an active operational partner of the AF, especially if pursuing forest conservation and biodiversity protection in the broader context of sustainable ecosystem or watershed natural resource and environmental management.

A5. The National Herbarium

- National Herbarium should be included in teams for the systematic assessment of biodiversity values of protected area state forests, and other areas (USF, Khas land and private forests) being considered by AF for conservation or regeneration of natural forests.
- The National Herbarium should be invited to identify and classify botanical species casually found (i.e. not in the course of formal assessments) in the forests and contribute to laboratory assessment of their biodiversity value.

A6. Ministry of Land

- A senior Ministry of Land official should be invited to participate in the AF Policy Advisory Committee.
- The Ministry of Land should be asked to help identify USF lands and leased area with natural forest remnants suitable for possible inclusion as sites for forest conservation or regeneration. Selected areas should be included in formal forest surveys and biodiversity assessment.
- Deputy Commissioners and staff with responsibility for selected USF areas should be asked to serve as advisers to the formal assessment team and then join the local level implementation committee if it is decided to initiate AF sponsored conservation activities on USF lands.

A7. Ministry of Tourism and Civil Aviation (MT&CA)

- The capacities of MT&CA tourism experts to address issues and design financially viable eco-tourism programs should be developed with AF assistance.
- MT&CA experts should be asked to help develop guidelines for eco-tourism development and support infrastructure for tourists in and around conservation forests.
- MT&CA officials at the local level should be included in the local implementation committees wherever development or improvement of interpretative facilities are likely to be considered in national parks, wildlife sanctuaries or other protected areas open to public visits.

- MT&CA officials should be asked to assist the local partners to assess eco-tourism potential of the sites where local interpretative facilities development is being considered. They should also assess the need for and commercial viability of complementary tourism facilities (e.g. tourist transportation and accommodation).

A8. Other Ministries and Departments

- Local officials of the MLGRDC, MLF and the two implementing departments (Department of Fisheries and the Livestock Department) should be included in the local committees responsible for implementation of AF sponsored activities.
- MFL or MLGRDC officials should be invited to participate in the AF policy and Technical Advisory Committees, as specific needs arise.

B. Relationships Strengthened and Partnerships Developed with Key Non-Governmental Organizations (NGOs)

- The AF Board uses its own expertise and experience with NGOs to review the Strategic Plan recommendations with respect to NGOs and their involvement with AF activities. The board can either adopt it or adapt their own strategy based on their perceptions of what is needed from NGOs and how to secure NGO collaboration.
- The three AF Board members with senior NGO leadership experience serve on the AF Board in their personal capacity, not as representatives of the organizations that nominated them. However, these board members do provide a wealth of experience on NGOs in Bangladesh, their programs and suitability as partners in the various types of participatory community management, environmental technical tasks, environmental law, advocacy for policy, public awareness and action on forest conservation.
- Negotiation of partnership agreements specifying roles of selected NGOs, local communities and other activity partners in accordance with the site management plan. Both the NGOs and local communities should be asked to forgo activities that use either state forest lands or buffer zones and compromise sustainable forest-based, revenue producing and income generating activities.
- Simultaneous with the development of AF project activities, a system of key variables for baseline status should be measured and a participatory monitoring and evaluation plan drawn up and implemented. A results based system with verifiable indicators of performance should be established. The evaluation procedure should include at least one independent NGO not involved in the activity or project implementation. This partner should be responsible for validating monitoring and evaluation findings and reports of the participatory M&E team.

C3. Forest Conservation on Privately Owned or Leased Tea Estates

- Assess tea plantation estate areas for their potential to develop natural forest patches and/or already existing natural forest patches that are being managed and maintained by the tea plantation enterprises.
- Initiate discussions with the tea board, estate owners and managers as to the potential and interest in the regeneration and expansion of natural forests within the tea estate concession areas. Encourage tea plantation estate owners to use some estate areas for natural forest regeneration and protection.
- Identify possible incentives to encourage tea estate enterprises to commit to the program of natural forest regeneration (e.g. authorities agree to forego tax revenue on logs harvested on a long-term uneven-aged, indigenous species natural forest management plan).
- Integrate forest conservation on tea estates into existing land management regimes, operated by the estate owners and managers.
- Provide tea estate managers with sensitization workshops on management for forest conservation and biodiversity protection.
- Ensure that plantation workers have the capacity to regenerate natural forests and will benefit from the activity (e.g. by also developing community woodlots from which they would generate supplemental income).
- Identify and contract NGOs/CBOs compatible with tea estate management and with the capacity and skills to train and then assist the workers in their participation in the scheme.

C4. Private Enterprise Involvement in Interpretive Programs

- Involve eco-tourism operators and local tourism service providers in the planning and development of interpretive facilities in national parks and other forest protected areas.
- Develop guidelines for eco-tourism in national parks and follow them when setting up partnership arrangements for involvement of private sector tour operators and local tourism service providers. These guidelines should include special provisions to allow those with limited funds or targeted visitors (e.g. schoolchildren) to visit the facility either without charge or at a nominal cost.
- Work towards the necessary compromise to ensure that tourist fees are low enough that the volume of tourism is profitable for private sector operators, yet high enough to provide significant funds for the national park.

C5. Production of Herbal Medicine Products

- A study of pharmaceutical companies marketing herbal medicines and developing new products should be carried out to determine if forest conservation protected areas might provide reliable supplies of herbal materials without compromising the protection status of the protected area.

Intermediate Result 3: Forest Conservation and Biodiversity Policy Dialogue and Reform Initiated

- AF should establish and support a Policy Advisory Committee to the AF Board, made up of senior representatives from public, NGO and other private-partner stakeholder agencies.
- AF should organize and support public consultations and workshops on identified forest policy issues and proposed changes.
- The AF should engage the MDBs on desirable forest policy changes and possible linkages between their further funding of forest sector projects and policy changes that would institutionalize changes in support of effective forest conservation and biodiversity protection.
- AF should encourage dialogue and promote forest policy reform that:
 - Encourages a FD focus on ecosystem integrity where appropriate, rather than production forestry, and commitment of budget and resources to reflect the importance of ecosystem integrity
 - Either rehabilitates or reflects the reality of the degraded status of many forest protected areas rather than maintain degraded areas as exclusionary zones
 - Recognizes buffer and sustainable use zones inside protected forest areas as an effective approach to forest conservation
 - Allows for decentralized and discretionary powers for forest resource management
 - Allows for some retention of net revenues generated by interpretive program management in national parks
 - Facilitates and institutionalizes participatory FD/NGO co-management of forest conservation protected areas and/or devolution of management to NGOs, CBOs or private sector concessions
 - Builds on successful pilot project initiatives support by the AF
- AF should actively support the process of affecting forest policy reform using partner NGO legal capacities, and generating public support for policy shifts through its public awareness program.

Intermediate Result 4: Promising Sites for Forest and Biodiversity Conservation Interventions Selected

D1.1 Lawachara National Park Recommended AF Activities

The approach the AF should try to use is to negotiate with the FD to manage Lawachara and the surrounding reserves on a conservation basis rather than a production basis. This deal could include (but would not necessarily be limited to) the following:

- Convince the FD to include a 281 ha extension to the north of the current gazetted area. The extension would incorporate most of the remaining plantations in West Bhanugach Reserve Forest that are greater than 25 years of age. The addition of this area would add habitat used by important forest dwelling wildlife species, thus improving their population viability and maximizing the area of primary biodiversity value under conservation management.
- Drawing on the existing management plan developed under the Forestry Sector Project for Lawachara National Park, define and agree on management zones and actions to be undertaken in each zone.
- Provide support to BFRI to conduct literature reviews on uneven aged/selective plantation management, and on natural forest restoration. Have BFRI develop research protocols for these areas and support actual research.
- Identify a local NGO to work with stakeholders in the sustainable use zone (participatory plantation development, agro-forestry, sustainable fuel wood harvest from natural forest areas, etc.).
- Identify an NGO to begin development of basic interpretive facilities for the park (nature trails, sign boards, etc.).
- Consider turning management of the guest house over to the private sector on a lease basis, as a means of income generation.
- Develop private sector partnerships with ecotourism operator, hotel and tourist facilities in the Srimangal area.
- Negotiate with the GOB (Treasury, MOEF and FD) the possibility of having a portion of the revenues generated by the park and surrounding reserves be retained locally for park management purposes and for the possible creation of a community conservation fund which would support community efforts in biodiversity conservation (and perhaps some social works activities such as schools, dispensaries, etc.).

D1.2 Satchuri Reserved Forest Recommended AF Activities

- Satchuri RF is recommended either as an alternate to proposed AF activities in Lawachara National Park (in the event that negotiations for Lawachara NP activities break down), or as a site where experience from Lawachara could be adapted, when additional funding becomes available to the AF. Activities would be broadly the same as for Lawachara- working through local NGOs, develop a zoning system permitting controlled harvest in certain areas by local people who currently rely on forest resources from the area, while restricting use in others.
- For the full benefits to be realized it would be better if Satchuri Reserved Forest be upgraded to a National Park as well. This would better ensure its protection and enable the AF to focus resources on a collection of sites that captures the range of biodiversity of the Srimangal eco-region. However, any upgrade would have to be complemented by commitment by the FD and local stakeholders to actually implement the protection provisions, even though the area may generate fewer benefits in the short term.

D1.3 Rema-Kalenga WS Recommendation

AF should verify the assertion that the southern section of the Wildlife Sanctuary has forests in much better biophysical condition than in the northern areas where the rapid appraisal was pursued. Unless this is the case, it is not recommended that pilot activities be considered in Rema-Kalenga WS.

D1.4 Recommendations for Private Sector Forest Tea Estate Program

- AF should consider developing a tea estate program in the Srimangal area. It would target estate managers, particularly those with estates proximate to the state forest protected areas, and encourage them to set aside areas in natural forest.
- To encourage other estates to follow Finlay's lead, specific activities should include dialogue with the tea board, promotion of site visits from other estate managers to Finlay's, and policy dialogue on possible financial incentives such as tax relief and the elimination of royalties paid to the FD for cutting estate-planted shade trees. This program could also explore alternative income sources and incentives for estate owners to maintain workers on a year round basis.

D2. Sal Deciduous Forest of the Central Plains: Madhupur National Park

The following pilot activities are recommended in the short-term:

- Support a study that documents the extent of *sal* forests in the Madhupur area (both classified and unclassified), their level of degradation and their potential for regeneration and restoration;

- The AF should engage environmental or forest law NGOs to support activities to resolve the many outstanding forest cases filed against the local population. The NGO will need to provide legal aid to ensure that due process with respect to the forest laws is followed.
- The environmental law NGO should help the FD address and clear as many as possible of the informal charges made against FD staff concerning collusion and direct involvement in illegal activities.

These activities are likely to be successful as long as the FD and local communities commit to changing the present untenable situation. Moreover, these activities will provide the groundwork and climate to initiate a model of joint FD and community (assisted by NGOs) conservation management of a significant area of *sal* forest.

The following longer term strategy is recommended for the AF:

- The AF should work to secure FD recognition only. It cannot now or in the foreseeable future control illegal activities carried out by local (Garo or in-migrant) communities.
- The AF should initiate negotiations with the FD to transfer management responsibilities for certain areas outside the park to local – particularly Garo – communities.
- Develop a pilot initiative whose aim would be to: 1) demonstrate that joint FD - community forest management can conserve or regenerate natural forests, generate income and protect biodiversity better than FD management alone; and 2) show that the biodiversity values of the natural forest patches provide all parties- community, FD and other stakeholders- with incentives to conserve forests and protect their biodiversity on a sustainable basis.
- Carefully select an implementing NGO by consulting all stakeholders to ensure they are comfortable with the proposed selection.
- For the selected site, develop a participatory biodiversity management plan involving and agreed to by all the key stakeholders.
- Specify roles for each of the partners including clear guidelines as to what is acceptable under the rules that apply in the pilot area.
- Transfer major management responsibilities presently taken on exclusively by the Forest Department to local forest communities, with the support of local NGOs.
- Analyze the economics of participation for forest communities, NGOs and FD participation to ensure that all stakeholders have strong and demonstrated incentives to participate in the pilot scheme activities.

- Use the AF public awareness campaign to engender forest community partner and broader public support for the strong measures that the FD and other local authorities will have to take to halt illegal local commercial activities by resource-using enterprises (brick-kilns, saw mills, furniture makers).

D3. Chunati Wildlife Sanctuary

The overall recommendation is that:

- Given the current open access nature of Chunati and all the time and resources it would take to deal with this problem, it is not recommended that Chunati WS be considered for pilot “on-the-ground” type activities.

The following other activities are recommended for AF consideration and possible support:

- Support for efforts to expand the declared wildlife sanctuary area to the north and south by 5162 hectares to include reserved forest areas, thereby increasing the area of elephant habitat under conservation management.
- Expansion of the sanctuary to the east to include the elephant movement corridor located at Harbang, and establishment of linkages to the Doolharza Safari Park.

Although neither of these actions would solve the problems of human access to the wildlife sanctuary and the continuing degradation of sanctuary resources, both would contribute to the viability of the existing elephant population.

D4. Teknaf Game Reserve

The overall recommendation is that:

- Given the current open access nature of Teknaf GR and all of the time and resources it would take to deal with this problem, Teknaf GR should not be considered as a first choice for pilot project activities.

It is recommended that AF consider the following other support activities in the short-term:

- Support for negotiations to expand the game reserve to include the remaining portion of the Whykheong Range and parts of the Ukhia and Inoni range/reserved forests.
- Initiate efforts to upgrade the status of Teknaf Game Reserve (and the proposed extension) from game reserve to wildlife sanctuary.

E. Activity Recommendations for Eco-Regions with Major Protected Areas, Not Subject to Rapid Appraisals

Meetings were held with the project director and staff of the Sunderban Biodiversity Conservation and Development Project to ascertain if there are AF opportunities in the mangrove forest eco-region. An over-flight of Chittagong Hill Tract areas was arranged to determine if there are any remaining substantial natural forest patches in the region's extensive state forests (mostly reserved forests and unclassified state forests).

- It is recommended that the two largest areas of remaining tropical forest- mangrove forests in the Sunderban's southwestern coastal region and the moist tropical forests in the Chittagong Hill Tracts in southeast Bangladesh- not be considered for pilot project activities at this time.

E2. Chittagong Hill Tracts

- Provided that the renewed political uncertainty and lawless conditions in the CHT are resolved and the GOB grants easier access, the Chemonics team recommends that the AF accord these areas the highest priority in terms of intervention.
- Even so, it is not recommended that AF should rely on the development of successful public-private partnerships in the CHT for achievement of the key element of its short-term strategy. There are too many activities, uncertainties and preliminary activities that will have to be pursued as prerequisites.

The recommendations for the two CHT areas with remaining natural forests are for the initiation of biodiversity inventories as soon as conditions in the CHT areas re-stabilize sufficiently to permit this field work in remote areas. The approach and recommendations are included as Section VII.B2. Biodiversity Inventory Assessments for the Chittagong Hill Tracts.

Intermediate Result 5: Collection and Exchange of Information on Natural Forest and Biodiversity Resource Status Facilitated

- The AF should support the development of the Capped Langur HSI model, building on the FD RIMS/GIS forest cover information system for use in baseline biodiversity assessments and monitoring in protected forest areas selected for AF pilot projects.
- The AF should encourage the expansion of RIMS/GIS database to cover USFs and private forests being managed to protect biodiversity or to regenerate natural forests.
- The AF should adapt the HSI model to cover forests where species other than the capped langur are the key indicator species.
- The AF priority should be given to assessing natural forest status and inventories of the biodiversity of two large, apparently undisturbed, natural forest patches in remote (southern and northern) areas of the Chittagong Hill Tracts.

- The AF should encourage the development of an informal network for sharing of biodiversity information, made up of institutions and individuals with expertise in biodiversity information collection and analysis, information database development and management.
- The AF support for the development of a more formally integrated biodiversity information database should be deferred until external funding for such an initiative becomes more likely and it becomes clearer as to which partner institution should house and maintain the database and provide assured access to the entire network.
- The AF should encourage the participation of local NGOs, CBOs and forest community stakeholders in inventory and monitoring activities where feasible, and ensure that biodiversity databases are accessible and useful to local FD, NGO and CBO managers, and technical staff of pilot projects.
- The AF should contract with independent NGOs to implement monitoring and evaluation assessments of the impacts of pilot ecosystem management projects on the forest community participants and other stakeholders. PRA approaches are recommended, with validation of results achieved through consistency of findings from multiple independent sources.

Intermediate Result 6: AF Public Awareness Strategy Initiated

- Media producers, journalists, and other public awareness specialists identified for regular involvement in AF public awareness programs, should be included in basic environmental awareness training workshops and be invited to go along on field trips with the AF team. This will encourage accurate, relevant and a current field-based edge to materials they disseminate or programs they develop.
- The public awareness strategy should start small, commensurate with the modest initial resources of the foundation and grow in scope as funding and programming warrant.
- The public awareness strategy does not need to start from scratch. It should build on existing environmental awareness materials and programming and adapt them to the specific context of forest conservation and biodiversity protection.
- The public awareness strategy should both promote the importance of forest conservation/biodiversity protection and what the target audience can do to help achieve these objectives.
- There should be a focus in programming on public-private partnership successes in forest conservation and how they are being achieved.
- A wide range of media, including written materials, should be used, with each designed and targeted for particular audiences, readers or viewers.

- There should be a balance between raising public awareness on specific local issues, especially those coming up in pilot activities of the AF, and more general national issues.

Comparison of Regulations and Prohibited Activities for Types of State Forest Protected Areas and Criteria for Declaration of Ecologically Critical Areas (ECAs)

A. National Parks

According to the Bangladesh Wildlife (Preservation) (Amendment) Act of 1974, a National Park is defined as “a comparatively large area of outstanding scenic and natural beauty, with the primary object of protection and preservation of scenery, flora and fauna in the natural state, (and) to which access for public recreation and education and research may be allowed. The following acts should not be allowed:

- *Hunting, killing or capturing any wild animal in a national park and within the radius of one mile outside its boundary;*
- *Firing any gun or doing any other act which may disturb any wild animal or doing any act which may interfere with the breeding places of any wild animal;*
- *Felling, tapping, burning or in any way destroying, taking, collecting or removing any plant or tree therefrom;*
- *Clearing or breaking up any land for cultivation, mining or for any other purpose;*
- *Polluting water flowing in and through the national park.*

Provided that the Government may, for scientific purposes or for betterment of the national park or for aesthetic enjoyment of the scenery or for any other exceptional reasons, relax all or any of the prohibitions specified above.”

Sites visited:

Lawachara National Park, located near Srimangal, Syhlet Division, was formally established in 1996, incorporating an area of 1250 hectares.

Madhupur National Park, located in the northeastern part of Tangail Forest Division, was gazetted in 1982, with an area of 8,437 hectares.

Bhawal National Park, located in Gazipur District, Dhaka Division, on the main road north to Mymensingh, has a relatively small gazetted area that has been developed as a popular picnic ground.

B. Reserved Forests

Reserved forests are basically governed by the Forest Act of 1927 (with subsequent amendments). According to this Act, the following acts are prohibited in a reserved forest:

- *Kindling, keeping or carrying fire except at such seasons as the forest officer may notify in this behalf*
- *Trespassing or pasturing cattle, or permitting cattle to trespass*
- *Causing any damage by negligence in felling any tree or cutting or dragging any timber*
- *Quarrying stone, burning lime or charcoal, or collecting, subjecting to any manufacturing process, or removing any forest produce other than timber*
- *Entering with fire arms without prior permission from the Divisional Forest Officer*
- *Making fresh clear felling prohibited*
- *Removing any timber*
- *Setting fire to a reserved forest, or, in contravention of any rules made by the government in this behalf*
- *Felling, girdling, lopping, tapping or burning any tree or stripping off the bark or leaves from, or otherwise damages, the same*
- *Establishing saw pits or saw benches or converting trees into timber without lawful authority*
- *Hunting, shooting, fishing, poisoning water or setting traps in contravention of any rules made in this behalf*

Site Visited:

Satchuri Reserve Forest, located near Srimangal in Syhlet Division, comprises an area of about 1760 ha of which 80 hectares are in natural forest and the remainder in long term rotations (primarily teak and mahogany) and short term rotations (primarily *Acacia mangium*). Conversion of the natural forest to plantations began in the 1950's.

C. Wildlife Sanctuary

Under the Bangladesh Wildlife (Preservation) (Amendment) Act of 1974, a Wildlife Sanctuary is defined as “*an area closed to hunting, shooting or trapping of wild animals and declared as such under Article 23 by the Government as undisturbed breeding ground primarily for the protection of wildlife inclusive of all natural resources, such as vegetation, soil and water. No person shall:*

- *Enter or reside in any wildlife sanctuary;*
- *Cultivate any land in any wildlife sanctuary;*
- *Damage or destroy any vegetation in any wildlife sanctuary;*
- *Hunt, kill or capture any wild animal in any wildlife sanctuary or within one mile from the boundaries of a wildlife sanctuary;*
- *Introduce any exotic species of animal into a wildlife sanctuary;*
- *Introduce any domestic animal or allow any domestic animal to stray into a wildlife sanctuary;*
- *Cause any fire in a wildlife sanctuary; or*
- *Pollute water flowing in or through a wildlife sanctuary.*

Provided that the Government may, for scientific purposes or for the aesthetic enjoyment or betterment of scenery, relax all or any of the prohibitions specified above.”

Sites Visited:

Rema-Kalenga Wildlife Sanctuary, located near Srimangal in Syhlet Division, has an original area of 1095 hectares that was gazetted in 1981. It was expanded to 1,795 hectares in 1996. It now includes 85% of the high forest remaining in the much larger and adjacent Tarap Hill Reserved Forest.

Chunati Wildlife Sanctuary, located south of Chittagong, with an original area of 19,170 acres (approximately 7,668 hectares) gazetted in 1986. The Sanctuary could be potentially expanded to include reserved forests in both the north and south to include an additional 5162 hectares under protected area conservation management.

D. Game Reserve

Under the Bangladesh Wildlife (Preservation) (Amendment) Act of 1974, a Game Reserve is defined as *“an area declared by the Government as such for the protection of wildlife and increase in the population of important species wherein capturing of wild animals shall be unlawful,”* but which also allows for *“...hunting and shooting of wild animals under a special permit...”*

Site Visited:

Teknaf Game Reserve, located south of Cox’s Bazar on the Teknaf peninsula, with an original area of 28,688 acres (approximately 11,475 hectares) was gazetted in 1983. There is a proposed extension to include the remaining portion of the Whykheong Range and parts of the Ukhia and Inoni Ranges, and an “upgrading” of the game reserve to wildlife sanctuary, to give more legal protection for the wildlife and habitat.

E. Unclassified State Forests

Unclassified State Forests (USFs) do not have any formal legal protection, other than that of protection from encroachment on public lands. The Deputy Commissioners and the district officials from the Ministry of Lands are free to allocate USF lands on the basis of the best interests of the district. In the Chittagong Hill Tracts, where most of the USF lands are located (there are smaller areas in Syhlet Division) the guiding document governing their allocation and use is the “Hill Tracts Manual,” which allows special land use rights for the local indigenous people living in the USFs.

No USF areas were visited, but extensive areas of USF and state forests in the Chittagong were observed on an over-flight.

F. Ecologically Critical Area

The Environment Conservation Act 1995, Section 5 says: “Declaration of Ecologically Critical Area: (1) If the Government is satisfied that due to degradation of environment, the ecosystem of

any area has reached or is threatened to reach a critical state, the Government may, by notification in the official Gazette, declare such area as ecologically critical area.

(2) The Government shall specify, in the notification provided in sub Section (1) or in any other separate notification, which of the operations or processes shall be carried out or shall not be initiated in the ecologically critical area.”

In the same Act, Section 7 says, *“Direct or indirect damage to ecosystem: If it appears to the Director General that any particular activity is causing damage to the ecosystem, whether directly or indirectly, he may, after assessing the amount of damage, direct any person responsible for such activity for applying corrective measures and such person shall be bound to comply with such direction.”*

Further, in the Environment Conservation Rules, 1997, there is a section on ecologically critical area. This is Section 3, ‘Declaration of ecologically critical area’ and reads:

“(1) The Government will take the following into consideration to declare any area as Ecologically Critical area, Section 5(1) of the Act:

- (a) Human settlement*
- (b) Ancient monument*
- (c) Archeological site*
- (d) Forest sanctuary*
- (e) National Park*
- (f) Game reserve*
- (g) Wildlife habitat*
- (h) Wetland*
- (i) Mangrove*
- (j) Forest area*
- (k) Biodiversity area*
- (l) Similar other areas*

(2) The activities or processes which cannot be continued or initiated in Ecologically Critical Area shall be specified by the Government as per standards described in following Rules 12 and 13.”

Summary of Site Analyses (1)

Summary of Site Analyses (1)

Criteria	Lawachara NP	Satchuri RF	Rema-Kalenga WS
<p><i>Conservation Value/Biophysical Condition</i></p> <p>What are the site's conservation value/biophysical condition?</p>	<p><i>Forest type:</i> semi-moist tropical evergreen/deciduous forest Conservation value: High</p> <ul style="list-style-type: none"> Original forest cover removed or substantially altered - only small remnant patches of natural forest but significant area of older indigenous species plantations approaching a natural forest state. Viable populations of small mammals including gibbons, langurs and macaques Contains one third of bird species (337) known in Bangladesh. Single best site for migratory and tropical songbirds. 	<p><i>Forest type:</i> semi-moist tropical evergreen/deciduous forest (slightly drier than Lawachara and with different variety of plants and animals) Conservation value: High</p> <ul style="list-style-type: none"> 80 ha forest relatively intact (closed canopy) – among the better small patches of natural forest seen. Viable populations of small mammals including langurs and macaques. Recent sighting of black bear. Avifauna and herpetofauna incompletely documented 	<p><i>Forest type:</i> semi-moist tropical evergreen/deciduous forest Conservation value: High, but unlikely to survive without support</p> <ul style="list-style-type: none"> Northern portion severely degraded by prolonged human use, neglect and depredations of special interests – only small areas of relatively intact forest remain. Large mammals have long since disappeared but viable populations of small mammals still remain including langurs, macaques, barking deer, wild pigs, etc. Avifauna and herpetofauna incompletely documented
<p><i>Conservation Value/Biophysical Condition</i></p> <p>What are the site's conservation value/biophysical condition?</p>	<p><i>Forest type:</i> semi-moist tropical evergreen/deciduous forest Conservation value: High</p> <ul style="list-style-type: none"> Original forest cover removed or substantially altered - only small remnant patches of natural forest but significant area of older indigenous species plantations approaching a natural forest state. Viable populations of small mammals including gibbons, langurs and macaques Contains one third of bird species (337) known in Bangladesh. Single best site for migratory and tropical songbirds. 	<p><i>Forest type:</i> semi-moist tropical evergreen/deciduous forest (slightly drier than Lawachara and with different variety of plants and animals) Conservation value: High</p> <ul style="list-style-type: none"> 80 ha forest relatively intact (closed canopy) – among the better small patches of natural forest seen. Viable populations of small mammals including langurs and macaques. Recent sighting of black bear. Avifauna and herpetofauna incompletely documented 	<p><i>Forest type:</i> semi-moist tropical evergreen/deciduous forest Conservation value: High, but unlikely to survive without support</p> <ul style="list-style-type: none"> Northern portion severely degraded by prolonged human use, neglect and depredations of special interests – only small areas of relatively intact forest remain. Large mammals have long since disappeared but viable populations of small mammals still remain including langurs, macaques, barking deer, wild pigs, etc. Avifauna and herpetofauna incompletely documented

Criteria	Lawachara NP	Satchuri RF	Rema-Kalenga WS
<p><i>Leverage:</i></p> <p>Sites should have the hope/potential of affecting the broadest possible audience of stakeholders.</p>	<p><i>High leverage potential.</i> Lawachara has threats similar to other PAs but not at the same scale. High potential to apply lessons learned to other sites in the eco-region (Satchuri and Rema-Kalenga), and elsewhere. Good potential for building AF credibility- ease of access and high visibility.</p>	<p><i>High leverage potential:</i> Like Lawachara, Satchuri has threats similar to other PAs but not at the same scale. High potential to apply lessons learned to other sites in the eco-region (Lawachara and Rema-Kalenga), and elsewhere. Good potential for building AF credibility- ease of access and high visibility.</p>	<p><i>Low leverage potential:</i> Better to initiate activities in Lawachara and/or Satchuri and then apply lessons learned there to Rema-Kalenga – better for developing local credibility. A “conservation success” will be difficult here in the short term. Also, isolated site makes attracting the attention of others more difficult.</p>
<p><i>Feasibility/project potential:</i></p> <p>What’s the potential for strategic impact, feasibility, and ability to be carried out quickly in order to build a track record?</p>	<p><i>High project potential:</i></p> <ul style="list-style-type: none"> • Relatively good tourism potential • Additional habitat potential of tea estates • High potential for reconversion to natural forest structure • Good forest/vegetation monitoring potential. • Relatively limited illegal harvest of park resources 	<p><i>High project potential:</i> providing classification can be upgraded:</p> <ul style="list-style-type: none"> • Relatively good tourism potential • Additional habitat potential of tea estates • High potential for reconversion to natural forest structure • Good forest/vegetation monitoring potential. • Relatively limited illegal harvest of park resources 	<p><i>Low project potential:</i></p> <ul style="list-style-type: none"> • Difficult resolution of settlement problems • Very limited tourism potential (difficult access). • Apparent tendency to open access use, at least in the north. <p>However, need to confirm status of southern portion of the reserve; forest condition and if contiguity better in the south.</p>

SUMMARY OF SITE ANALYSES (2)

Summary of Site Analyses (2)

Criteria	Madhupur NP	Chunati WS	Teknaf GR
<p><i>Conservation Value/Biophysical Condition</i></p> <p>What are the site's conservation value/biophysical condition?</p>	<p><i>Forest type:</i> Dry tropical deciduous or <i>sal</i> forest.</p> <p><i>Conservation value:</i> High, only one of two remaining areas of relatively intact <i>sal</i> forest that once covered the central plains of Bangladesh.</p> <ul style="list-style-type: none"> • Less than 4000 ha of <i>sal</i> forest cover remaining – conversion to agriculture, and extensive conversion to plantations (rubber, short-term rotations) • Current condition of remaining forest highly variable but all areas have been subject to some disturbance. However, most of plant biodiversity intact. • Larger mammals have disappeared but small mammals still remain (19 species). Main center of abundance for capped langurs. • Relative high bird (140 species), and reptile (28 species) diversity. 	<p><i>Forest type:</i> Semi-moist tropical evergreen/deciduous</p> <p><i>Conservation value:</i> High, but it may be too late to save.</p> <ul style="list-style-type: none"> • Closed canopy natural forest has decreased from about 2000 ha in 1985 to only small patches on steep inaccessible terrain. • Had significant biodiversity in 1985 (500 plant species, 160 bird species and 40 mammal species) but some loss of species has more than likely occurred. • Capped langur and hoolock gibbon are probably on the verge of extirpation. • Sanctuary still supports an important elephant population. 	<p><i>Forest type:</i> Semi-moist tropical evergreen/deciduous and lowland coastal forest.</p> <p><i>Conservation value:</i> High, although may be too late to save.</p> <ul style="list-style-type: none"> • Original wet evergreen and semi-evergreen forest has been severely degraded. Now only small remnants on steep inaccessible slopes. • Had at one time highest biodiversity level in Bangladesh (55 species of mammals, 290 of plants, 286 of birds, 55 of reptiles and 13 species of amphibians. Due to rapid degradation of all vegetation types, loss of species is occurring and has probably already occurred. • Reserve still supports an important elephant population
<p><i>Management Status:</i></p> <p>What's the current management status of the site in terms of biodiversity, threats, current protection status, and strategies?</p>	<p><i>National Park</i> – highest level of protection.</p> <p><i>Threats</i> – most complex set of problems in Bangladesh:</p> <ul style="list-style-type: none"> • Unclear land tenure • Inadequate FD resources and capacity for effective park/biodiversity management. • High level of animosity between communities and FD. <ul style="list-style-type: none"> • High population pressure 	<p><i>Wildlife Sanctuary</i> – moderate level of protection – higher than reserve but lower than park.</p> <p><i>Threats:</i></p> <ul style="list-style-type: none"> • Uncontrolled and extensive harvesting of fuelwood, poles, bamboo, sungrass and other resources from the sanctuary combined with extensive grazing. • Absence of any specific FD protected area management activities. • High degree of animosity between FD and local communities. 	<p><i>Wildlife Reserve</i> – lowest level of protection, similar to Forest Reserve.</p> <p><i>Threats:</i></p> <ul style="list-style-type: none"> • Uncontrolled and extensive harvesting of fuelwood, poles, bamboo, sungrass and other resources from the sanctuary combined with extensive grazing. • Absence of any specific FD protected area management activities.

Criteria	Madhupur NP	Chunati WS	Teknaf GR
	<p>(illegal logging and other resource harvesting, conversion to agricultural land).</p> <ul style="list-style-type: none"> Shift from Garo traditional forest management to Bengali settlers and agriculture focus. 	<ul style="list-style-type: none"> Sanctuary is treated as open access resource by local communities. 	<ul style="list-style-type: none"> Sanctuary is treated as open access resource by local communities. Presence of Rohingya refugees exacerbates an already bad situation.
<p><i>Leverage:</i> Sites should have the hope/potential of affecting the broadest possible audience of stakeholders.</p>	<p><i>High leverage potential.</i> A “conservation success” in Madhupur, albeit difficult to achieve, would have a significant positive impact on local credibility and increase visibility of the AF.</p>	<p><i>High leverage potential.</i> A “conservation success” would more than likely be extremely difficult to achieve here. However, any success would be highly visible and applicable to Teknaf.</p>	<p><i>High leverage potential.</i> A “conservation success” would more than likely be extremely difficult to achieve here. However, any success would be highly visible and applicable to Chunati.</p>
<p><i>Feasibility/project potential:</i> What’s the potential for strategic impact, feasibility, and ability to be carried out quickly to build a track record?</p>	<p><i>Low project potential.</i> in the short-term in spite of some positive aspects (ability of <i>sal</i> forest to regenerate, local preference for <i>sal</i> forest and high tourist potential).</p> <ul style="list-style-type: none"> Extremely difficult to resolve social issues (mainly concerning land rights) with surrounding tribal and Bengali communities. In the longer term, need to look at transfer of forest management responsibilities from FD to local (Garo) communities. 	<p><i>Low project potential.</i> Given the current open access nature of the sanctuary and the amount of AF time and resources it would take to address this problem, Chunati would not be a good choice for initial “on-the-ground” type activities.</p>	<p><i>Low project potential.</i> Given the current open access nature of the reserve and the amount of AF time and resources it would take to address this problem, Teknaf would not be a good choice for initial “on-the-ground” type activities</p>

ANNEX D

TOPICS AND CRITERIA FOR SCORING PROTECTED AREA MANAGEMENT PROGRESS⁽¹⁾

TOPIC	CRITERIA	SCORE
LAW		
1. Legislation	a. There is no legal basis for protection of the area.	0
	b. There is a legal basis for protection of the area, but problems with legislation or its understanding are a significant barrier to management.	1
	c. Problems with protected area legislation or regulations and their understanding are not a significant barrier to management.	2
	d. Legislation and regulations are highly effective in supporting management.	3
2. Boundary demarcation	a. There is no legally defined boundary for the protected area.	0
	b. The protected area's boundary is legally defined, but is inexact and/or is not visible on the ground.	1
	c. The protected area's boundary is legally defined, but it is only partially and/or temporarily marked on the ground, and not all local stakeholders know where it is.	2
	d. The protected area's boundary is permanently and fully marked on the ground, and most local stakeholders know where it is.	3
3. Enforcement	a. There is no enforcement of protected area legislation and regulations.	0
	b. There are major deficiencies in enforcement (e.g., unclear understanding of the law, small and/or poorly trained staff, problems with legal process).	1
	c. Enforcement is active, but some deficiencies remain.	2
	d. Enforcement of legislation and regulations is excellent.	3
MANAGEMENT		
4. Objectives	a. The main objective of the area and its management is not biodiversity and habitat conservation.	0
	b. The main objective of the area and its management is biodiversity and habitat conservation, but significant new development or other activities contrary to this are allowed or planned (e.g., infrastructure construction, logging, etc.).	1
	c. The main objective of the area and its management is biodiversity and habitat conservation, and only limited new development or other activities contrary to this are allowed or planned.	2
	d. The principal objective of the area and its management is biodiversity and habitat conservation, and no new development or other activities contrary to this are allowed.	3
5. Funding	a. Little or no funding is committed to management of the protected area.	0
	b. Partial funding flows to management of the area, but the scope is not sufficient for effective, long-term conservation (e.g., amount is too small and/or duration is too limited).	1
	c. There is significant, long-term funding (>20 years, e.g., recurring government budget line, donor commitment, or trust fund), but not enough for implementation of some management objectives.	2
	d. The protected area is fully funded for effective, long-term conservation.	3
6. Information gathering	a. There is almost no information on the area's biodiversity and the socioeconomics of local human residents.	0

TOPIC	CRITERIA	SCORE
	b. There is some information on the area's biodiversity and socio-economics, but not enough to contribute to a management strategy.	1
	c. There is enough information on the area's biodiversity and socio-economics to prepare a basic management strategy.	2
	d. Information on the area is excellent, and sufficient for preparation of a comprehensive management strategy.	3
7. Planning	a. There is no written management strategy for the area.	0
	b. A management strategy is under preparation, or one has been written but has not been approved by all required levels of government, and implementation is minimal.	1
	c. A management strategy has been approved, but there is not yet full implementation (e.g., due to funding or staff constraints).	2
	d. An approved management strategy is under full implementation.	3
8. Staffing	a. No full-time staff are assigned to the protected area.	0
	b. Staff are assigned to the area, but their numbers and/or training and experience fall significantly short of that needed for successful management.	1
	c. There are staff assigned to the area, and numbers and training are sufficient for implementation of most, but not all, management.	2
	d. The protected area is fully staffed with adequately trained and motivated personnel for full implementation of a comprehensive management plan.	3
9. Management action	a. Management actions required to fulfill the objectives of the protected area are not known.	0
	b. Management actions required to fulfill the objectives of the protected area are known, but there is little implementation, or there is significant lack of consensus on the management actions required.	1
	c. There is consensus on required management actions, and many but not all are being implemented.	2
	d. Required management actions are being fully implemented.	3
10. Information management and monitoring	a. There is no information management system (IMS) and no monitoring program to track the condition of the protected area or the effectiveness of management.	0
	b. There is a limited IMS and/or monitoring program in place to track the condition of the protected area and management effectiveness, but major gaps remain.	1
	c. Both an IMS and monitoring program are in place for many key characteristics of the protected area and aspects of its management, but some gaps remain.	2
	d. There is a comprehensive monitoring program backed by an effective IMS, and both are used to make management decisions.	3
STAKEHOLDER	INVOLVEMENT	
11. Communication with local stakeholders	a. There is little constructive communication between management and major local stakeholders.	0
	b. There is <i>ad hoc</i> , opportunistic communication between management and local stakeholders.	1
	c. There is a program of regular communication between management and major local stakeholders, but it is not completely implemented.	2
	d. A planned program is working well to maintain constructive communication between management and major local stakeholders.	3
12. Local support	a. Most local residents are hostile to the protected area.	0
	b. Most local residents do not know that the area is protected, are indifferent to it, or support it with significant doubts.	1

TOPIC	CRITERIA	SCORE
	c. Most resident communities see some benefits of the protected area and its management, and support it.	2
	d. Most resident communities see major benefits of the protected area and its management, and voluntarily contribute to its protection.	3

¹Based on: 1) Hocking, M., S. Stolton and N. Dudley. 2000. Evaluating effectiveness: a framework for assessing the management of protected areas. IUCN, Gland, Switzerland and Cambridge, U.K., and 2) Robichaud, W., C.W. Marsh, S. Southammakoth and S. Khounthikoummane. 2001. Review of the national protected area system in Lao PDR. Lao/Swedish Forestry Programme and Department of Forestry/National Agriculture and Forestry Research Institute, Ministry of Agriculture and Forestry.

Arannayk Foundation Policy Advisory Committee (Forest and Biodiversity Conservation)

The AF Board, in collaboration with the MOEF and its agencies (particularly the FD and the DOE), NGOs and private sector partners, will form a Policy Advisory Committee focused on forest and biodiversity conservation, whose tasks will be to:

1. Monitor and record legislative and administrative changes related to the natural resources sector, especially regarding natural forests, forest remnants, regenerated forests and biodiversity;
2. Develop, in consultation with the MOEF, NGOs/CBOs, the private sector and other interest groups, a list of policy priorities that relate to achievement of forest conservation and regeneration, sustainable forest use and biodiversity protection objectives;
3. Evaluate new policy initiatives in the sector, and draw the attention of policy makers to possible omissions from, or issues created by, the policy menus;
4. Assist in the policy formulation process by preparing syntheses of the most important policy topics, such as the land tenure issue, for use by Government officials, USAID, local and international NGOs and other private interest groups;
5. Educate male and female participants in the policy formulation process about the economic efficiency and sustainability repercussions of selected policy options;
6. Stimulate, by the use of appropriate educational and training devices, a cross sectoral approach to forest oriented policy evaluation, formulation and implementation, paying heed to forestry, agriculture and other forms of land use and their environmental/biodiversity consequences, and public/private needs and interests, particularly including tenure, and their social consequences;
7. Provide advice on the development of a technique for measuring the effectiveness and impact of policy reforms, and of the capacity building methods and implementation used to support such reforms, and use the results as a guide for improvement;
8. Work toward the development of specific resource management/policy analysis skills (e.g. natural resource valuation, cost benefit analysis, integrated planning, GIS applications) that build on the existing technical qualifications of AF public-private partner stakeholders.

The AF will ask the Secretary of the MOEF (or if not available, his Joint Secretary [Development]) to head this committee.

Scope of Work

Below are specific activities that shall be undertaken by the contractor.

A. Principles and Coordination

The Strategic Premise

USAID/Bangladesh Strategy: TFCA and the Arannayk Foundation established under the TFCA agreements provide a unique opportunity for USAID/Bangladesh to initiate a long-term forest biodiversity conservation and management program, in line with the newly developed Program Strategy of the environment Strategic Objective (SO), SO6: *Improved Management of Open Water and Tropical Forest Resources*. This task order shall provide assistance to the newly established Arannayk Foundation. The contractor shall manage the program according to this strategic principle.

Bangladesh Forestry Sector and Biodiversity Context. The forestry sector context, with particular reference to forest and/or terrestrial biodiversity, poses a great challenge toward any effort pertaining to community-based management of natural forest. The natural forests are highly fragmented and the status of biodiversity is unknown. The Bangladesh Forest Department does not have a protected area management system although there are a number of declared protected areas. Experts opine that the terrestrial natural resources of the country will be wiped off within ten years. The Sundarbans – a World Heritage Site, which is the largest single tract of tropical mangroves – is expected to be considerably diminished within 15 years, given the current trend of deforestation and fragmentation. Arannayk will aim at implementing a tropical forest conservation strategy with poor people as central to implementation. We expect Arannayk to act as a catalyst for mass awareness generation toward conservation and for developing a protected area management system in Bangladesh.

Coordination

The contractor shall, at a minimum, follow the following coordination principles:

- The contractor shall require coordinating with the USAID Office Chief of Economic Growth, Food and Environment, and the Environment, Science and Technology Officer of the U.S. Embassy, as well as with the TFCA Secretariat at USAID/Washington Global Bureau.
- The Senior Natural Resources Advisor (SNRA) of the Environment Team's on-going MACH activity will play a key role in the task-order team's local coordination efforts. The contractor – particularly the task-order team leader, therefore, shall require maintaining strong, day-to-day liaison with the SNRA.

- The contractor shall maintain close liaison with the Executive Director, the Board of Director, and the technical staff of Arannayk.
- The contractor shall have to work closely with the NGO apex bodies, the Coalition of Environmental NGOs (CEN) and the Association of Development Agencies in Bangladesh (ADAB) and significant local and international NGOs as appropriate.
- The contractor will also be expected to work with appropriate representatives of the Government of Bangladesh, including the Ministry of Environment and Forest (MOEF), Bangladesh Forest Department (FD), Department of Environment (DOE) – particularly the Biodiversity and Natural Resources Division, and Bangladesh Forest Research Institute (BFRI).
- The contractor shall also coordinate with relevant academic institutions such as, but not be limited to, the Dhaka University, the Chittagong University -- especially the Institute of Forestry and Environmental Sciences, and the Khulna University -- especially the Forestry and Wood Technology Discipline.
- The contractor will be expected to take adequate field visits in the tropical forest areas of Bangladesh to perform the tasks, especially selecting potential site(s) for Arannayk strategy implementation vis-à-vis the inventory and monitoring of tropical forest biodiversity.

B. Tasks

1. Assist the Arannayk Board of Directors and the Executive Director in developing a long-term implementation strategy for Arannayk for tropical forest biodiversity conservation and management. The strategy will focus, but not be limited to, in addressing the following fundamental strategic questions, under different funding scenarios:
 - a. Given the grave tropical forestry biodiversity situation facing Bangladesh, where should the Arannayk Foundation concentrate its implementation focus on?
 - b. What should the modus operandi be? How would the grant be effectively administered, for instance, through individual grants to NGOs, or to a consortium? What should be the role of GOB institutions?
 - c. With whom should the Arannayk be working?
 - d. What are the priorities (in terms of conceptual and geographical focus)?
2. Initiate the site selection process and design a tropical forest biodiversity inventory and monitoring project for select site(s). The following tasks must be performed at a minimum:

- a. Recommend potential site(s) for implementation in accordance with a long-term strategy.
 - b. Undertake a rapid appraisal, description of land and biodiversity, and threat analysis of biodiversity of select site(s).
 - c. Design a detailed program for inventory and monitoring of tropical forest resources for select sites.
 - d. Identify potential local institution(s) to undertake detailed inventory and periodic monitoring of biodiversity changes.
3. Develop a curriculum for NGO capacity building training for conservation and management of tropical forest biodiversity. The contractor shall perform, at a minimum, the following tasks:
 - a. Identify needs of major potential implementing NGOs, particularly in writing grant proposals, accounting procedures, monitoring and evaluation.
 - b. Prepare guidelines for a curriculum for NGO capacity building, that is, short-term training programs to train NGO staff that will be involved in designing and implementing the activities under the Arannayk grant.
 - c. Identify local institution(s) and potential trainer(s) that are eligible to administer training programs using the curriculum.
 4. Prepare a strong public awareness strategy for Arannayk aimed at generating political and financial support.

C. Results/Deliverables

The following results/deliverables are required:

1. *Work plan.* The contractor shall prepare the workplan in consultation with and approval of the CTO within 10 days of commencement of the task order. The work plan must be submitted in both electronic form and hard copies (drafts - electronic and at least two hard copies, final - electronic and at least five hard copies).
2. *A long-term implementation strategy* for Arannayk for tropical forest biodiversity conservation and management that is acceptable to the Arannayk Board of Directors, the USG and the GOB. A draft strategy shall have to be submitted to the CTO for review and comments by February 15, 2002. The final report, addressing the comments, shall have to be submitted on or before the completion date of the task order. The strategy must be submitted in both electronic form and hard copies (drafts - electronic and at least three hard copies, final - electronic and at least 25 hard copies).

3. *A preliminary inventory of potential site(s)* for Arannayk's strategy implementation including design of a detailed tropical forest biodiversity inventory and monitoring project for select site(s). A draft report shall have to be submitted to the CTO for review and comments by December 31, 2001. The final report, addressing the comments, shall have to be submitted by January 31, 2001. It is expected that an understanding of the suggested sites will have implications on the quality of the strategy report. The report must be submitted in both electronic form and hard copies (drafts - electronic and at least three hard copies, final - electronic and at least 25 hard copies).
4. *A curriculum for NGO capacity building training for conservation and management of tropical forest biodiversity*, including identification of local training institution. A draft report shall have to be submitted to the CTO for review and comments by February 15, 2002. The final report, addressing the comments, shall have to be submitted on or before the completion date of the task order. The report must be submitted in both electronic form and hard copies (drafts - electronic and at least three hard copies, final - electronic and at least 25 hard copies).
5. *A strong public awareness strategy for raising supports and funds*. A draft report shall have to be submitted to the CTO for review and comments by February 15, 2002. The final report, addressing the comments, shall have to be submitted on or before the completion date of the task order. The strategy must be submitted in both electronic form and hard copies (drafts - electronic and at least three hard copies, final - electronic and at least 25 hard copies).

Quality and effectiveness of the technical specialists as well as the quality and timeliness of delivering the deliverables shall form the basis of performance standard evaluation.