

PROJECT BRIEF**1. IDENTIFIERS**

PROJECT NUMBER: PHI/99/G31/33/A/1G
PROJECT NAME: **Philippines: Samar Island Biodiversity Project (SIBP) Conservation and Sustainable Use of the Biodiversity of a Forested Protected Area**
DURATION: Eight years, divided into two 4-year implementation phases
IMPLEMENTING AGENCY: United Nations Development Programme
EXECUTING AGENCY: Department of Environment and Natural Resources (DENR)
IMPLEMENTING AGENTS: DENR Region VIII office in conjunction w/ Samareño NGOs
REQUESTING COUNTRY: Philippines
ELIGIBILITY: CBD ratified in October 1993
GEF FOCAL AREA: Biodiversity
GEF PROGRAMMING FRAMEWORK: No. 3: Forest Ecosystems (cross cutting: Land Degradation)

2. SUMMARY: Samar island –the third largest island in the Philippine archipelago—contains some of the Philippines’ largest extant, unfragmented tracts of lowland rainforest. Although these forests are widely recognized to be an important repository of biodiversity, civil disorder problems in Samar have, until recently, hampered conservation management. Civil order has now been restored, providing a historic window of opportunity to expand the conservation estate. The Project would establish the Samar Island Natural Park (SINP), a new protected area zoned for multiple uses centering on protection, but providing for sustainable harvests of non-timber forest products, and institute a comprehensive range of ancillary conservation measures to insulate the Park from human pressures. Park management would be operationalized in partnership with forest-edge communities with the aim of establishing a ‘social fence’ against threats. Interventions will strengthen participatory planning, process-response monitoring, surveillance and enforcement functions, enhance the conservation management capacities of communities, impart conservation values to wider Samareño society, backstop advocacy operations, and abet development of conservation-compatible village livelihoods. Implementation will be phased to nurture nascent conservation processes through to maturity. The GEF will share the cost of these interventions with other financiers.

3. COSTS AND FINANCING

GEF:	Phase 1	US\$ 3,344,050
	Phase 2	US\$ 2,415,420
	PDF B	US\$ 350,000
	Sub-total	US\$ 6,109,470
CO-FINANCING:	Phase 1	
	GOP: Full Project	US\$ 2,032,600
	GOP: PDF B	US\$ 75,000
	UNDP	US\$ 628,700
	USAID	US\$ 350,000
	FPE	US\$ 466,800
	NGO/ Church Groups	US\$ 31,100
	Phase 2	
	GOP:	US\$ 2,219,000
	UNDP	US\$ 895,620
	FPE	US\$ 468,500
	NGO/Church Groups	US\$ 31,100
	Sub-total	US\$ 7,198,420
TOTAL PROJECT COST:	US\$13,307,890	

4. **ASSOCIATED FINANCING:** Baseline funding is estimated at US\$ 27.07 m over 8 years.

5. **OPERATIONAL FOCAL POINT ENDORSEMENT**

Name: Mario Rono

Title: USEC for External Commitment & Local Government Affairs

Organization: DENR

Date: 13 August 1999

6. **IA CONTACT:** Tim Boyle, Regional Coordinator, UNDP/RBAP GEF Unit,
Tel (1 212) 906 6511; Fax (1 212) 906 5825; e-mail (Tim.Boyle@UNDP.org)

LIST OF ACRONYMS

APR	Annual Progress Report
BMU	Park Buffer Management Units
CENRO	Community Environment and Natural Resources Office
CCF	Country Cooperation Framework (UNDP)
DA	Department of Agriculture
DAR	Department of Agrarian Reform
DENR	Department of Environment and Natural Resources
DILG	Department of Interior & Local Government
DOLE	Department of Labor & Employment
DOST	Department of Science & Technology
DOT	Department of Tourism
DSWD	Department of Social Welfare and Development
DTI	Department of Trade & Industry
EBA	Endemic Bird Area
EIA	Environmental Impact Assessment
ESSC	Eastern Samar State College
EXECOM	Executive Committee of PAMB
FPE	Foundation for the Philippine Environment
FSSI	Foundation for Sustainable Society Incorporated
GEF	Global Environmental Facility
GOP	Government of the Philippines
IPAF	Integrated Protected Area Fund
LGU	Local Government Unit
M & E	Monitoring and Evaluation
NBSAP	National Biodiversity Strategy & Action Plan
NGO	Non-government Organization
NIA	National Irrigation Administration
NIPAS	National Integrated Protected Areas System
NORDECO	Nordic Agency for Development and Ecology
NTFP	Non Timber Forest Product
PA	Protected Area
PA 21	Philippine Agenda 21
PAMB	Protected Area Management Board
PASU	Protected Area Superintendent
PAWB	Protected Areas and Wildlife Bureau of DENR
PENRO	Provincial Environment and Natural Resources Office
PO	People's Organization
PRA	Participatory Rural Appraisal
PSC	Project Steering Committee
PSSD	Philippine Strategy for Sustainable Development
QPR	Quarterly Progress Report
SIBP	Samar Island Biodiversity Project
SIFR	Samar Island Forest Reserve
SINP	Samar Island Natural Park
TESDA	Technical Education and Skills Development Authority
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VCC	Village Conservation Committee
WWF	World Wide Fund for Nature

PROJECT CONTEXT:

1. Environmental Context: The Philippines is ranked as one of 17 ‘megadiversity’ countries globally by Conservation International, a measure of the archipelago’s extraordinary species richness. Samar island, which spans an area of 13,428 sq. kms, is exceptionally rich in biological diversity, and is listed as a global 200 ecoregion by WWF. The island belongs to the Eastern Visayas bio-geographic area, one of 15 such areas in the Philippines, and is listed as one of 18 centers of plant diversity and 9 endemic bird areas in the country. The island’s physical geography is characterized by an undulating, dissected, interior landscape girdled by a narrow coastal plain. The topography is hilly rather than mountainous, with peaks ranging from 300 to 850 meters in elevation. Lying within the typhoon belt, the island suffers from frequent high intensity storms, a factor that causes relatively high forest turnover. Some 360,000 hectares of rainforest remain extant, including over 120,000 hectares of primary forest and large contiguous tracts of secondary forest in good ecological condition. Forest types include forest on ultrabasic rock, forest on limestone outcrops, lowland dipterocarp forest and small pockets of montane forest on the highest peaks. The island also contains a vast labyrinth of caves in limestone karst country, known to harbor a unique and undisturbed cave fauna.

2. The island’s biological inventory is incomplete, and recent field surveys have added to the species tally. The bird fauna is especially rich, with 197 species listed (34% of the total count for the country), including 50 Philippine endemics. Several of these species are highly threatened, including the Philippine Eagle, Philippine Hawk Eagle and Philippine Cockatoo. 39 species of mammals have been recorded thus far, 46% of which are endemic to the Philippines including the Philippine Tarsier, Philippine Flying Lemur, and several bats. 37 species of herpetofauna have been identified with a recent survey adding 9 new records to the inventory. There is little information available for invertebrates and freshwater fish owing to a paucity of survey effort. The flora includes several thousand species of vascular plants, including a large number of island endemics and several globally endangered dipterocarps. Again, the inventory is incomplete owing to inadequate survey work, particularly in limestone forests. The Eastern Visayas bio-geographic area remains under-represented in the Philippine Protected Area (PA) System, underscoring the global significance of conservation in Samar island. Further information on these various biological attributes is provided in Annex E.

3. Socio-economic Context: The island is arranged politically into three provinces (Northern, Western and Eastern Samar), and divided administratively into 2,119 local government units, known as *barangays*. It has a total population of 1,405,000, concentrated in the coastal fringe, including in the urban centers of Catbalogan and Borongan¹. The demographic growth rate is less than 2% per annum because emigration to neighboring provinces and urban centers is high. Mean monthly household income varies from US\$65-99. Farm holdings include a mix of smallholder and medium-sized properties and coconut, rice, corn, bananas, abaca, pineapples, ginger and vegetables are grown. Copra and root crop production provide the principal sources of rural income, while rice production is important

¹ The Samareño’s are descendents of Indo-Malaysian migrants who arrived in the Philippines during the 13th and 14th centuries A.D, and share common ethnological features with the neighboring East- Visayan island of Leyte.

within the subsistence economy. Various forms of swidden agriculture (or *kaingin*) are widely practiced in the interior, with farming intensification constrained by a lack of access to appropriate know-how and technology. Forest-edge communities are dependent on forest resources to supplement agricultural earnings and harvest rattan and bamboo poles for shelter construction, a variety of medicinal and culinary plants, and freshwater fish and large animals, mainly for consumptive purposes. Firewood is gathered –usually when forests and shrublands are opened for *kaingin*—to meet household energy needs as well as for sale in local markets. In addition, rattans and other non-timber forest products (NTFPs) are harvested and sold to non-Samareño dealers.

4. Policy Context: The Philippines has developed a raft of policies in the dual arenas of sustainable development and conservation. Foremost amongst these are the National Biodiversity Strategy and Action Plan (NBSAP), National Integrated Protected Areas System (NIPAS) law (1992), Philippine Strategy for Sustainable Development (PSSD) and Philippine Agenda 21 (PA 21). The country’s conservation strategy centers on the management of PAs under NIPAS, with the goal of capturing a representative sample of biodiversity within the conservation estate. Recognizing the interconnectedness of ecological and socio-economic systems, the Constitution mandates the creation of tight linkages between conservation and development programs. The PSSD aims at integrating environmental and social welfare concerns into development planning, promoting environmental education, and engendering public participation in natural resource management. The NBSAP² articulates a number of conservation strategies under 6 thematic heads, five of which are relevant to this initiative: 1] expanding knowledge of the uses and values of biological diversity; 2] enhancing conservation efforts with an emphasis on *in situ* habitat and species management; 3] formulating an integrated policy and legislative framework for conservation, sustainable use of biological resources, and sharing of derived benefits; 4] strengthening conservation management capacities at all levels; and 5] developing an integrated conservation information, educational, and communications system.

5. The NBSAP underscores the conservation significance of Samar island’s forests and the Government of the Philippines (GOP) is committed to their protection. A Presidential Proclamation issued in 1996 declared the site as the Samar Island Forest Reserve (SIFR), pending its designation as a NIPAS site³. This move reinforced an island-wide ban on industrial logging first effected in 1989.

6. Institutional Context: The Department of Environment and Natural Resources (DENR) is responsible for most environmental management functions including biodiversity conservation, enforcement of environmental legislation, regulation of forest industries, and other aspects of natural resource management. DENR has a decentralized institutional structure. The national office in Metro Manila is responsible for policy evolution and umbrella supervision and monitoring operations while regional offices co-ordinate management and regulatory functions. Provincial Environment and Natural Resource Offices (PENRO) oversee environmental

² Prepared in 1996 as part of the Philippine Biodiversity Country Study with funding through UNEP-GEF.

³ The NIPAS Act establishes seven discrete PA categories, with management objectives ranging from biodiversity preservation to sustainable resource uses. Natural Parks are relatively large areas where strictly controlled, conservation-compatible, resource uses are allowed in designated zones. Forest Reserves constitute an additional category of protected landscape outside of the NIPAS framework. Their management objectives vary on a spectrum from extraction to preservation, but are generally less restrictive than those prescribed for NIPAS sites.

management at the provincial level, while subsidiary Community Environment and Natural Resources Offices (CENRO) are responsible for discharging DENR functions at the municipal level, with each office covering several *barangays*. The Protected Areas and Wildlife Bureau of DENR (PAWB) is charged with the management of Protected Areas and ensuring compliance with wildlife laws. At the site level, PAWB functions are shared between 1] the office of the Protected Area Superintendent (PASu) or Parks authority, created for each NIPAS site and charged with regulatory and administrative duties pertaining to site management; and 2] Protected Area Management Board (PAMB), comprised of representatives from DENR's regional office, representatives from municipal governments, *barangays*, Provincial Governors Offices, NGOs and local communities, and mandated under the NIPAS law with overseeing planning and coordinating other basic conservation functions within the protected area.

7. A large number of non-government organizations and peoples (community-based) organizations are very actively involved in Samar's conservation arena. Prominent among these are Tandaya, Guian Development Foundation Inc. (GDFI), Samar Action Group for Environmental Protection (SAGEP), Action for Community Empowerment, Center for Empowerment and Resource Development, and the Eastern Samar Development Foundation. The non-government sector has recently established the Samar Island Biodiversity Foundation (SIBF), an umbrella grouping responsible for coordinating conservation efforts spearheaded by NGOs. At a national level, the Foundation for the Philippine Environment (FPE) is an active non-government actor in the conservation arena, financing and assisting to coordinate community-based conservation efforts.

BASELINE COURSE OF ACTION

8. Threats: Samar island has suffered significant ecological degradation in the recent past (60+% of the original forest has been lost to agriculture or converted to imperata grasslands since the 1950s). Anthropogenic pressures on forests diminished during the 1980's and early 1990s, partly because civil disorder in some regions of Samar discouraged development. An increasingly active conservation movement has grown in recent years, and NGOs have been successful in injecting conservation goals into the development agenda. NGO advocacy was instrumental in obtaining a suspension of plans by planners to develop a road linking the east and west coasts of southern Samar that would have cut through an important forest corridor and provided an artery for human colonization of the interior. In addition, the NGO sector successfully canvassed decision-makers to impose a blanket island-wide ban on industrial logging in 1989—a move that has protected remaining forests. Despite such positive trends, other anthropogenic pressures remain unchecked. Although the situation is less acute than that prevailing in several other areas in the Philippines, threats are likely to grow with time—especially given betterment in law and order fundamentals.

9. The principal remaining threats to biodiversity are listed in annex F, which also reports on their underlying social, institutional and economic determinants. The main threat stems from agricultural encroachment, driven by the practice of swidden farming by forest-edge communities. Small-scale logging remains unregulated, and remains a threat in areas close to human settlements. Other threats stem from hunting, mainly for bush meat, and the harvest of minor forest resources. This latter pressure is amplified by the use of destructive harvest

practices, (i.e. tree felling to harvest rattan). In the future there is a risk that poorly planned infrastructural development in the periphery of the forest reserve will impose adverse indirect externalities, including the threat of immigration. A lack of understanding of biodiversity management needs presently hampers efforts to integrate conservation objectives fully into development planning processes. Habitat fragmentation is a concern. Remaining primary forests lie within two large blocks and one smaller one, presently separated by secondary forest (much of it in good condition) that provides a much needed biological corridor. It is critical that this corridor be maintained to guard against insularisation of these blocks.

10. The root causes of the aforementioned threats are multifarious, but may be summed up as follows: 1] for the most part Samar's forests lie outside NIPAS, correlating in inadequate investment in management, including staffing and infrastructure required to perform basic surveillance and enforcement functions; 2] little notice has been paid in advancing conservation to the perspectives of forest-edge communities, who lack an understanding of the ecological and socio-economic impacts of their activities, and the wherewithal to adapt contra-conservation land use practices; investment in the development of sustainable livelihoods that uphold conservation values has been lacking; 3] conservation objectives are weakly integrated into development plans and programs, leading to negative externalities on biological diversity; 4] Samareño civil society lacks adequate understanding of conservation values and recognition of the contribution that conservation can make towards sustainable development; and 5] institutional management capacities to protect biodiversity and manage wild resource use are weakly developed throughout the region. Elsewhere in the Philippines, protected area management has been retarded by a failure to create a strong PASu office and effectively delineate the functions of PASU, CENRO and PENRO. This has created multiple jurisdictions within protected areas— complicated the task of performing PA management functions.

11. **Baseline:** The baseline course of events in a business as usual situation is described below. The incremental cost annex summarizes information on baseline costs projected over 8 years.

12. Planning & Monitoring Biodiversity Conservation: Three small NIPAS sites, covering a total area of 11,207 hectares have been established within the SIFR. However, these are highly isolated ecologically, exclude large areas of critical natural habitat, and are being managed without reference to the social, economic and ecological determinants of stable conservation. In-house capacity to adapt management in response to emergent threats is weak. DENR appropriates budgetary and human resources for planning operations. But operations are stymied by a paucity of baseline biological, ecological, and socio-economic data, weak data management systems and interpretation know-how, and an incapacity to design participatory management interventions. A Management Plan for the SIFR is lacking, including for the 3 NIPAS sites, meaning that there is no long-term conservation blueprint— a recipe for *ad hoc* management. Monitoring operations are likewise weak and concentrate on providing snapshots of the status of some species in some areas rather than a comprehensive picture of ecological and social trends. There is a need for targeted capacity building support to enhance the efficacy of the monitoring and planning system and optimize resource allocations. However, such support is not planned in the baseline scenario, leaving an unmet need.

13. Site Management: While the Philippines' national conservation policy and legislative framework is fundamentally strong, enforcement operations remain weak. This is partly a reflection of the enormity of the conservation challenge facing the country, given its 'megadiversity' status on a global scale, and characterized by considerable internal bio-geographic variation. Despite the conservation priority accorded to Samar island by the GOP, its need to commit budgetary resources to existing conservation areas retards its ability to establish effective management structures there without some external support. In a baseline situation it is unlikely that the objective of creating a single integrated NIPAS site in Samar would be realized, particularly given that significant one-time investments in infrastructure, equipment, institution building and staff training are required. The donor community and non-government sectors currently have no plans to strengthen conservation operations in Samar, placing the burden of responsibility solely upon PAWB. The baseline would see some investment in staff and infrastructure within the 3 NIPAS sites, although inadequate to the task of managing a large and ecologically viable forest PA. Additionally, DENR would continue to regulate access to the area, given its present status as a forest reserve, but the focus of intervention would be on maintaining forest cover rather than biodiversity values per se. Finally, management intervention would likely be engineered from the top-down, as has been the practice historically.

14. Community-based Forest Management: The participation of local communities in conservation efforts in Samar is constrained by a number of resource tenure and usufruct related constraints. Most communities at the forest-edge reside on public lands and are classed officially as 'squatters'. Denial of tenure rights in turn provides communities with little inducement to intensify farming systems and execute soil conservation measures, as needed to stabilize the ecological frontier, particularly when the option of agricultural extensification in forestlands remains open because of weak enforcement of regulations against encroachment. Communities are also technically disallowed access to the SIFR to harvest forest products, with harvest rights being accorded to outsiders, often non- Samareños, who routinely enter the area. This has the perverse incentive of encouraging communities to treat the forest as a commons, rather than manage it for the public good.

15. The Department of Agrarian Reform (DAR) is responsible for acquiring and distributing alienable and disposable land suitable for agriculture to landless farmers. In 1998, the DAR, distributed 6,834 hectares in Samar Island to 3,237 farmer beneficiaries, but few forest-edge residents were beneficiaries. Lands adjacent to the SIFR are in the public domain, and no acquisition is required to effect distribution. Much of this area is officially classed as forest land, and is therefore inalienable, although occupation may still be recognized by law, subject to qualification, through instruments of tenure provided under Community-based Forest Management Agreements (CBFMA). The process of tenure allotment under this scheme involves several steps, including, inter alia 1] educating local government officials, and community groups about the scheme, and establishing institutional linkages between these actors; 2] selecting potential CBFM areas; 3] strengthening the capacity of community based groups to participate; 4] identification of beneficiaries 5] development of resource use and management plan; 6] negotiation of the terms and conditions of tenure; 7] approvals and extension of tenure rights; and 8] the iterative processes involved in implementing and managing planned activities specified by the management plan, reviewing the outcomes of these activities, and drawing on experiences as the basis for developing subsequent annual work plans.

16. The baseline scenario would see considerable investment in social organization activities, aimed at strengthening the capacities of local communities to participate in development initiatives and galvanize better internal co-ordination of community development programs. This investment would be concentrated for the most part in farming communities near the coast, but would also extend to the forest-edge. Financing for this activity would be provided by DENR, the Department of Agriculture, Department of Agrarian Reform, and various other government and non government agencies. The focus of such activities would be specific to development or general environmental management, rather than biodiversity conservation. But potential exists to reorient DENR's social organization activities in areas contiguous to the SIFR, to improve conservation-specific linkages.

17. Environmental Education: A number of NGOs are active in imparting environmental awareness, and have registered early successes in influencing development policies. Awareness raising is a key function of Samareño NGOs. Other agents of awareness include DENR, accorded statutory responsibilities for environmental education, and various church groups. However, projected investments would occur at a low background level, and need to be scaled up to strengthen the conservation constituency and build broad-based public support for biodiversity protection, especially where there are tradeoffs with development. NORDECO has sponsored the development of generic conservation awareness materials for the Philippines. These materials need to be adapted to the specific circumstances of Samar island in order to make them more contextually relevant. Further education is needed to sensitize the public to conservation policies and legislation, to impart conservation values, and build recognition of the linkages between development and conservation.

18. Environmental Management: DENR is responsible for regulating the environmental impacts of development, including in the agricultural, public works and mining sectors, as well as for enforcing permitting requirements for use of forest lands. The provincial and municipal governments have each established planning units responsible for coordinating spatial development in the *barangays* and framing macro and micro development plans. These arrangements would continue within the baseline scenario, incurring significant financial costs. However, there is a weak integration of conservation objectives into development planning and general environmental management, characterized by 1] a lack of conservation-specific appraisal within environmental impact assessments; 2] absence of zoning requirements to satisfy conservation needs; 3] weak understanding amongst policy-makers of the external ecological costs of development; and 4] a lack of information of the comparative values of forest conservation relative to other forms of resource use. In addition, although the SIBF has assumed a 'watch' on development activity, its capacity to execute this function is weak. There is an urgent need to build institutional capacity to address each of these weaknesses and thus ensure a better integration of conservation and development objectives.

19. Sustainable Livelihoods: PRA exercises conducted during project development underscored the need to address rural livelihood needs as part of the conservation strategy, founding activities on an understanding of the perspectives of communities, their survival strategies and capacity for behavior change. A significant infusion of investment into rural development is being planned for Samar over the coming 8 years. But unless programmed jointly

with conservation, there is little surety that these investments will contribute to conservation objectives. For this to occur, the following interventions will be needed 1] spatial targeting of development programs to ensure that communities at the forest-edge are beneficiaries; 2] creation of safeguards, through legal compacts or other appropriate instruments to tie development support to communities to the fulfillment of agreed conservation objectives; 3] design of management safeguards, including spatial zoning requirements to enhance the ecological sustainability of livelihoods; 4] investment in measures to remove barriers to the sustainable uses of biological resources, enabling a paradigm shift in consumptive and productive resource use; and 5] reinvestment of a portion of the net proceeds of community development into conservation management, thus ensuring that beneficiaries bear management costs.

(a) Non Timber Forest Products (NTFPs): Some 15 species of rattan are harvested for productive purposes within the SIFR (the most frequently harvested species belong to the genus *Calamus*, i.e *C. maximus*⁴). The present allowable cut is 2.25 million lineal meters per annum. But management is weak, and for some species at least, harvests are probably not sustainable. Harvest records are incomplete, and do not capture consumptive uses of rattan by local communities. 11 rattan harvest concessions, covering a total area of 114,775 ha., have been awarded. Almaciga resin is also tapped from the conifer: *Agathis philippinensis* to produce copal, and 4 harvest concessions have been allocated. Annual production is estimated at only 11.99 MT, considerably lower than allowable production quota (225 MT). Current harvests appear to be sustainable, although the target quota may not constitute a sustainable yield. A failure to invest in quality control causes the product to be discounted. The main barriers to sustainable use of these NTFP' s include 1] the absence of set asides to protect genetic material (harvesting is presently undertaken throughout the SIFR, although the interior has been protected by its remoteness); 2] lack of incentives for local communities to participate in efforts to protect the resource (communities are technically denied resource access, even for consumptive use purposes as harvest permits are issued to non Samareño collectors); 3] failure to gear management to address the biological and ecological determinants of sustainability; 4] a lack of understanding of the impacts of different management methods on biological diversity, and 5] the lack of a long term monitoring program, which serves as a constraint to adaptive management.

(b) Nature Tourism: Although there is considerable potential for nature tourism in the SIFR, the industry remains poorly developed. This may partly be attributed to erroneous perceptions of law and order problems in source markets, which may be addressed through better marketing, but there are a number of other barriers impeding development of the sector as a conservation compatible livelihood alternative. These include 1] a lack of articulation of the tourism product in key markets, 2] a lack of on site infrastructure, including camping facilities, trails and interpretation facilities; 3] a lack of accommodation facilities; 4] a lack of trained guides, and inadequate visitor management capacities; and 5] the absence of capacities and skills at the community level to enable local participation in the sector (without this, communities are unlikely to see tourism, and by extension conservation, to be in their interests). Nevertheless, the SIFR has considerable natural attributes, including a large forest area, wildlife, and especially avifauna, caves, waterfalls, streams and other natural attractions, which may be used as levers for

⁴ Other species include *C. discolor*, *C. filispadix*, *C. mindorensis*, *C. usitatus*. *C. ornatus var philippinensis* and *Daemonorops sp.*

nature tourism. The tourism sector in the Philippines has been gradually expanding, fuelled by an increase in overseas visitors as well as growth in domestic tourism markets⁵. The proximity of the area to other tourism destinations in the central Philippines, and to Cebu City, a gateway to the country, also augur well for the development of nature tourism in Samar. However, owing to the afore-mentioned barriers, there are no plans to develop tourism in the SIFR.

(c) Agriculture: Farming constitutes the main source of livelihood of forest edge communities. Upland farming systems are oriented towards subsistence, although some root crops, vegetables and fruit are marketed, and include a mix of swidden horticulture and sedentary farming. Five agro-ecosystems have been identified, differentiated by climate and substrate conditions. Productivity is generally low. Agriculture poses a threat to the ecological frontier, and interventions are needed to stabilize ecological boundaries by supporting sustainable farming system intensification using appropriate technologies. The baseline scenario would see considerable investment island-wide in agricultural development, including strengthening of extension services, farming systems research, input supplies, micro-credit, marketing and distribution. There is also a baseline of support targeted more directly at forest-edge communities, including intervention packages that promote agro-forestry, soil conservation, and reforestation, and provide basic capacity building in enterprise management. Although this support is significant, and provides an important complement to this project, it does not extend equally to all communities at the forest-edge and needs to be gradually expanded. In addition, technical assistance is needed to marry agricultural and conservation interventions.

ALTERNATIVE COURSE OF ACTION

20. Project Preparation: Project development has been jointly financed by UNDP-GEF and the GOP. Activities have included 1] stakeholder consultations to clarify project strategies; 2] preliminary Participatory Rural Appraisals in local villages to gather data; 3] preliminary biological appraisals to assess the status of Samar forests; 4] the design of a community-based conservation management strategy; 5] threats identification 6] review of legal issues pertaining to the status of the SIFR; 7] negotiation of co-financing; 8] determination of incremental costs; and 9] proposal writing.

21. The project aims to protect a representative sample of the biodiversity of the Philippine archipelago by expanding conservation coverage in the Eastern Visayas bio-geographic zone. This will be achieved through establishment of the Samar Island Natural Park (SINP), a new PA with an area of 347,000 hectares, and a surrounding buffer of 123,000 hectares. The project would pilot a participatory community-based conservation regime, adopting a “social fencing” strategy whereby forest-edge communities act as a bulwark against threats. The Park will comprise a core area zoned for strict protection and recreational and scientific use, and a sustainable use area, where sustainable harvests of non timber forest products would be permitted. Sustainable agro-forestry and other conservation-compatible land uses would be promoted in the buffer zone, which has a resident population of 6,500 households. Based on the results of feasibility assessments conducted during project development, it is anticipated that the

⁵ According to government statistics, some 25,000 tourists visited the Eastern Visayas in 1997 (7% from overseas). Although tourism to the region has grown on average by 4.38% per annum, it still captures only 1.6% of the country’s tourism trade, providing room for growth. In 1998, there were approximately 1,500 visitors to the SIFR, and in 1999, a large, well-publicized adventure rally was organized with funding from the French company: ELF.

core zone will cover a total area of 135,000 hectares, encompassing primary forest blocks, mature secondary forests, the Calbiga and Sohoton caves, and biological corridors between these blocks. The sustainable use area will encompass a total area of 212,000 hectares. A map of the Park, indicating the provisional zoning plan is provided in Annex E.⁶

22. The project will advance conservation processes in two phases. The first phase would complete planning and policy work required to formally gazette the Natural Park, and institutionalize the proposed community-based management approach. The second phase would then build core conservation functions, and nurture conservation processes through to maturity. A time horizon of eight years has been selected for project implementation, with time budgets divided equally between the phases. A number of pre-requisites have been set to trigger graduation between the phases. The log frame provides a clear overview of the sequencing of activities between phases and these triggers, and provides a framework for monitoring and evaluating project performance. The Threats Annex shows how activities will address the underlying root causes of biodiversity loss. Seven complementary outputs are proposed, with the GEF financing the agreed incremental costs of conservation. Co-financing will be provided by the GOP, UNDP, USAID, FPE and local NGOs.

Output 1. An adaptive management framework for conservation is established and operational.

23. The GEF would provide funds to update the biological inventory by funding biological assessments in hitherto unsampled or under-sampled areas. These assessments would provide further information on conservation values and the status of critical natural habitats and will contribute to the process of land use zoning and management planning. A detailed biodiversity M&E plan would be framed, confirming the preliminary list of indicators identified during project development, and specifying the temporal and spatial scale of further sampling effort. Aerial photographs and other monitoring tools would be procured, and data management/assessment capabilities strengthened to ensure efficient storage, manipulation and use of data by Park managers. Biennial biological surveys would then be undertaken to monitor trends. While these surveys would be coordinated by Filipino scientists, indigenous knowledge would be tapped by training local observers to monitor ecological processes. Local observers would be trained in transect sampling, record keeping, and interpretation.

24. The GEF would also finance regular social assessments in order to maintain a record of changes in stakeholder composition, monitor social relations between forest-edge communities and other actors, and gauge the success of project interventions in fostering attitudinal change. The first step will involve preparation of a social M&E plan, building on the results of PRA exercises performed during project development and further community consultations. Local social monitors would be trained in socio-economic survey techniques, record keeping and interpretation. Social assessments would be routinely performed during the course of project implementation. The project team would include an experienced sociologist tasked with coordinating social monitoring activities.

25. A participatory planning framework will be created to engage all primary stakeholders in

⁶ The various zones would be concretized following additional biological appraisal and consultation with communities.

planning. An operational plan for year 1 will be finalized during the first quarter of implementation. Training would subsequently be provided to PA staff in participatory planning methods. Then, based on the results of the baseline biological and social assessments and public consultation (Output 3), a 5 and 10 year Management Plans would be framed, with 1] a clear description of management objectives; 2] schedule of planned activities; 3] zoning plan for the core area and buffer; 4] biodiversity and social monitoring plans; 5] delineation of the respective management responsibilities of DENR, LGUs and local communities; 6] outline of regulations, as they apply to the different zones; 6] description of enforcement procedures; 7] schedule of penalties, including traditional sanctions designed by communities; and 8] outline of management incentives, including execution modalities. The Plan would be open to public review and public hearings would be convened to solicit further stakeholder contributions. Concurrent steps would be taken to secure Presidential and Congressional endorsement of PA status, with funding provided for policy and advocacy operations. The Management Plan will be adapted as necessary through subsidiary Operational Plans, enabling managers to respond to changes in the social, and ecological landscape. On-going strengthening of planning capabilities will enable stakeholders to craft subsequent Plans.

Output 2. Conservation functions are operationalised and infrastructure established and maintained.

26. In accordance with the NIPAS Law, a Protected Area Management Board (PAMB) will be established with representation from DENR, governors/ mayors offices, SIBF, and Village Conservation Committees (see para 32). An interim PAMB will be established in year 1 to oversee planning activities. The Board would be confirmed following formal designation of the area as a Natural Park. Guidelines for selecting PAMB members will be prepared during year 1 following public consultation. In order to improve administrative efficiency, an executive committee of the PAMB will be established (Execom). This will meet more regularly than the full Board, and would be responsible for day to day execution of the Board's responsibilities. The project will serve as a secretariat for PAMB during phase 1, whereupon the PASu would assume this function.

27. Management of the SINP will require recruitment of additional staff to complement DENR's existing human resources, including a PA Superintendent (PASu), 16 rangers, 2 clerks, a mechanic, environmental management specialist, advocacy officer, property custodian, accountant, bookkeeper, cartographer (part time), computer programmer, information specialist, radio operator, 2 drivers, janitor, 2 sociologists and 2 biologists. All staff will receive a mix of formal and informal training in PA management methods, including threats identification and quantification, conflict resolution, and enforcement, reporting, public relations, and administration. Training needs assessments will be performed at the commencement of each phase, enabling staff to participate in the design of training programs. The proposed training budget would provide for the following activities: 1] sensitization of staff to other community-based conservation models in S. East Asia (3 study tours for 30 participants); 2] participation in regional PA training programs (20 participants); 3] annual in-service training workshops to discuss lessons and resolve problems; 4] on- the-job training in the field.

28. The project would supply basic equipment, supplies and infrastructure required to operate the SINP. This would include standard office equipment, GPS, radio communications, camping equipment, vehicles and horses. In addition the GEF would finance the cost of designing and

constructing a central park headquarters facility and visitor interpretation center, signage, camp site, 13 park entrance/check posts, 30 ranger posts, demarcation posts, 10 village conservation resource centers for community education, and 90 kilometers of trails to facilitate enforcement operations and trekking.

29. In order to strengthen the position of PASU within DENR's internal hierarchy, the SINP-PASU will report directly to the Regional Executive Director (Region VIII—the office responsible for the SINP). The delineation of responsibilities between CENRO/PENRO and PASU is a pre-requisite for phase 2.

30. The recurrent costs of PA operations, including staffing⁷, utilities, and equipment maintenance would be shared by the GEF and GOP as follows: year 1 100% GEF; years 2-4 50% GEF & 50% GOP; years 5-6 30% GEF & 70% GOP; year 7 10% GEF & 90% GOP; year 8 100% GOP.

Output 3. A community-based conservation framework is tested and operational with strong community participation evidenced in all aspects of conservation and sustainable use management.

31. The proposed conservation program would share responsibilities for buffer zone management with forest-edge communities, and would build conservation-enabling institutions within communities. Initial consultations with communities during project development have indicated a receptivity on their part to participate in conservation activities. But intensive outreach is needed to build the foundations of trust with communities, level dis-equilibria in social relations within and between communities and government actors, obtain broad-based consensus on management activities and operations, and mobilize meaningful inputs into the development of management plans and zoning regimen (output 1). The project would mobilize a technically competent, experienced and dedicated team of community workers to perform social outreach functions and to assist with capacity building for community-based conservation. The task will require extensive training both prior and during the course of fieldwork, and a community outreach trainer would be recruited. The GEF would cover the costs of field operations, including salaries, per diem and transportation.

32. The outreach program will follow an organic process comprising of the following elements: 1] additional PRA exercises to identify community resources, needs and management constraints; 2] consensus-building on management parameters and execution modalities; 3] definition of the respective responsibilities of community actors, LGUs and DENR in fulfilling management objectives; 4] facilitation of community participation in management planning, including determination of sanctions for malfeasance; 5] mediation of conflict and development of conflict resolution capacities; 6] mobilization of community forestry guards responsible for surveillance and reporting; 7] establishment of conservation committees; and 8] execution of a broad-based capacity building program to strengthen the agreed management framework. The buffer zone will be divided into 10 Buffer Management Units (BMUs), each governed by a Village Conservation Committee (VCC) comprising of representatives of the different *barangays* in the BMU. The VCCs would be accountable to the PAMB for enforcing conservation regulations in the buffer area and in sustainable use areas within the Park, as agreed between the

⁷ As the SINP is a new protected area, additional staff resources are needed to administer it. The GEF will not finance existing DENR staff positions.

VCC and PAMB. On a day to day basis, community forestry guards would report to the PASu on behalf of the VCCs on the status of management and of any legal infringements. Each VCC would elect a representative to the PAMB.

33. In order to co-ordinate conservation actions across BMU's and ensure congruity in effort, the GEF would also provide funds for inter-community forums, bringing together representatives of the 10 VCC's to discuss experiences, resolve problem areas, and ensure that management operations are co-ordinated. An annual general meeting of VCCs would be convened each year for this purpose. But funding would also be appropriated to facilitate informal exchanges between community-based groups, including women's and youth groups, enabling them to share management experiences.

34. The GOP will extend good stewardship incentives to communities to encourage participation through 1] extension of tenure instruments to smallholders residing in the buffer; and 2] extension of usufruct rights to communities through the VCCs in sustainable use zones, where controlled harvests of forest products would be permitted. These incentives will be extended under Community-Based Forest Management Agreements negotiated with the VCCs, following the process described in paragraph 16. Tenure would be non-transferable and awarded only to bona fide residents, already tilling portions of the area to be awarded, or traditionally utilizing the resource for all or a substantial portion of their livelihood. The terms and conditions of the instrument would catalogue the type of land uses permitted, resource stewardship requirements, and penalties for malfeasance, and would be discussed and agreed upon by representatives of the DENR regional office, local government units, PAMB and the VCCs. In order to effect smooth operation of the scheme, intensive preparation and training would be engendered prior to the execution of the instrument. The costs of allotting tenure instruments and usufruct rights would be borne by the GOP.

Output 4. Broad-based awareness of conservation values and threats are imparted to forest-edge communities and other key Samareño stakeholders.

35. The project would develop and execute a broad-based conservation awareness campaign, aimed at imparting conservation values to civil society and leaders and alerting stakeholders to threats. The target audience would include local communities, *barangay* leaders, provincial and municipal planners and decision-makers, church leaders, schoolteachers and other key actors. The campaign would be designed following an in-depth appraisal of awareness needs within different Samareño stakeholding constituencies. Awareness materials will be designed specifically for each stakeholding group, field tested, and then adapted based on audience response. Messages would be communicated through a variety of media including local radio and newspapers, and the church.

Output 5. Conservation objectives are internalized in sectoral development planning, budgeting and activity delivery at the regional, provincial and municipal levels.

36. GEF funds would be drawn upon to supply technical assistance and training to integrate conservation objectives into development planning, including in the agricultural, mining and public works sectors. The project would strengthen planning capacities by developing integrated planning skills, including multi-criteria analysis. Technical support would be provided to devise a set of safe minimum standards to be applied in development operations within the buffer zone.

These would provide a tool for planners to assess how development can be modified to accommodate specific conservation needs. The project would also strengthen the environmental impact assessment framework, as it applies to the buffer zone, by instituting conservation impact appraisal requirements. USAID would provide co-financing for a resource valuation of the Samar island forest, providing a comparative economic assessment of the values of conservation against other land use options.

37. GEF and UNDP inputs would also strengthen the advocacy functions of the Samar Island Biodiversity Foundation's constituent NGO's by building policy appraisal and regulatory negotiation capacities. The objective is to maintain an independent watch on threats to biodiversity and build the capacity of NGOs to work collaboratively with government to integrate conservation with development.

Output 6. Barriers to sustainable use of wild resources are removed through demonstration activities.

38. NTFPs: The project would provide financing to demonstrate a model management program for rattan and *Agathis philippinensis* that, beyond engendering sustainable use of these resources, would enable community custodianship. UNDP and the GOP would co-finance 1] an inventory of the status of harvested species within the SINP (density and size class); 2] determination of sustainable harvest parameters, drawing initially on existing yield and regeneration studies, and taking ecological and socio-economic considerations into account⁸; 3] preparation of a management plan clearly specifying quotas for different NTFP's, specifying harvest methods, delineating collection areas, establishing new licensing conditions, management responsibilities and penalties for malfeasance. The GEF would fund: 4] provision of technical advice to mould management towards attaining conservation objectives; 5] establishment of a new permitting system, operated through the VCC's and aimed at making communities the key beneficiaries of resource use (as a conservation incentive); 6] raising awareness of the impacts of destructive harvest practices. The VCCs would be accountable to PAMB for enforcing the management plan, and preventing illegal harvest by outsiders and malfeasance by community members. Local observers designated by the VCC's would maintain a record of harvests. The GOP and UNDP would fund yield and regeneration studies to assess the biological response to management, and recommend adjustments to harvest quotas and methods if necessary. UNDP would provide funds to enhance quality control for almaciga resin by training collectors, and would also train local NTFP collectors to negotiate fair prices with middlemen. The costs of the demonstration would be shared as follows: GEF: 26%; GOP: 4% and UNDP:70%.

39. Ecotourism: This demonstration aims at enabling a steady increase in visitation, with a target of 1500 foreign tourists (mean stay 2.6 days), and 3,500 paying Filipino tourists (mean stay: 1.14 days) by year 8. A key objective is to expand the menu of conservation compatible livelihoods. The GEF finance development of a code of conduct for recreational use of the SINP and assist DENR, the Department of Tourism (DOT) and the VCCs to prepare a tourism management plan, clearly identifying adverse ecological and social impacts on the SINP, and mitigation measures, and identifying strategies, to be implemented by PAMB in collaboration

⁸ The program would apply best practices (based on yield, regeneration and other studies) by forging links with the International Network on Bamboo and Rattan (INBAR) and field management pilots in the S. East Asian region.

with the VCC's for ensuring an equitable sharing of benefits from tourism at the community level. The GEF would also finance the development of interpretation materials for tourists, focusing on the code of conduct and site ecology, and provide funding to train local guides in visitor management methods. The GOP would finance tourism promotion at the site, both via the Internet and through local tour operators, and ensure that the SINP is described in popular Tourist Guides. UNDP would provide funding to promote a village home stay program, building understanding at the village level of the determinants of a successful tourist business and providing training in basic hospitality services, and provide deal flow services by linking up prospective entrepreneurs with existing micro-credit programs. UNDP would also provide funding for guide training, focusing on imparting communications skills. The costs of the demonstration would be shared as follows: GEF: 13%; GOP 14% and UNDP:73%.

40. Sustainable Agriculture: The project, with financing from the GOP and UNDP ,will support a program of sustainable smallholder agricultural intensification to stabilize the forest frontier. UNDP's inputs would aim at overlaying conservation objectives into baseline sponsored agricultural programs. Activities include 1] A detailed farming systems analysis to augment existing information, identifying cultivation/ fallow dynamics for shifting agriculture, assessing soil management methods, crops, cultivars, inputs and other attributes. The assessment will provide recommendations for improving the ecological sustainability of farming through use of locally appropriate technologies and farming methods (crop rotation, agroforestry, contour farming, mulching, and ditching); 2] Development of extension materials that promote farming systems friendly to conservation geared to the five different agro-ecological zones; 3] Training extension officers to impart know-how on sustainable farming methods; 4] Establishing 10 demonstration projects to showcase low cost methods of improving soil management; 5] Providing deal flow services, by linking farmers with sources of micro-credit or agriculture support; and 6] Providing co-ordination services (with baseline interventions), to ensure livelihood support interventions in the buffer are linked to the conservation program. Support will be strategically extended to barangays where encroachment is impacting the ecological frontier. The GOP would expand its farming support program, including extension services, marketing support and input supply networks to include communities currently excluded from outreach. Support packages will be coordinated through the LGUs with input from the VCCs.

Output 7. Mechanisms to finance the recurrent costs of conservation activities are in place.

41. The annual recurrent costs of managing the SINP following project closure have been estimated at US\$ 473,000 (in 1999 prices) broken down as follows: 1] US\$ 196,000 for DENR staff salaries and entitlements; 2] US\$64,000 for maintenance and replacement of equipment and infrastructure; 3] US\$10,000 to fund technical assistance for the monitoring and evaluation program; 4] US\$70,000 for utilities, travel, PAMB meetings and other ancillary expenses; 5]US\$ 117,000 for the community-based conservation program, including entitlements for community forest guards and the costs of VCC operations, inter-community forums, technical assistance and continued awareness raising; and 6]US\$16,000 for the SIBF's advocacy and networking operations. DENR/ PAWB would absorb staff, utility and maintenance costs into its budget on an increasing scale during project implementation, with annual outlays for conservation operations peaking at US\$ 297,000 in year 8. Additional funding of US\$ 50-80,000 per year would be provided by the FPE to capacitate community based conservation, geared to capacity development needs expressed by the VCCs. The PSC will be responsible for ensuring that these

respective budgetary commitments are realized.

42. The GEF would provide funding to legally constitute a new Integrated Protected Areas Fund (IPAF) for the SINP, a revolving fund capitalized by visitor fees, concession fees for harvests of rattan, bamboo, copal and other minor forest products, road user fees (for the existing Motiong-Taft road), and financial penalties for breaches of PA regulations. Assets would be deposited in an interest bearing account in accordance with national regulations. The IPAF would finance the residual management costs associated with community based conservation (external to PASu operations) providing an appropriation of US\$ 70,000-90,000. While the IPAF would be managed by the PAMB, consistent with NIPAS legislation⁹, its governance will be supported by credible independent financial managers and auditors, and a full time administrator will be recruited and trained. Interventions would establish differentiated user fee schedules, based on economic assessments of ability to pay, develop fiscal instruments, establish data management systems, develop effective fund governance mechanisms, define eligible expenditures, and frame operational specifications.

43. End of Project Situation: The SINP would be established and fully buffered from anthropogenic threats. Local communities will be actively participating in conservation management through VCCs. A 'social fencing' framework will be providing a buffer against illegal encroachment and forest use by outsiders. An incentive framework will be providing for basic villager needs in a manner compatible with the achievement of conservation objectives. A *quid pro quo* arrangement will be in place that marries economic incentives with good stewardship. There will be clear indicators that threats have been mitigated, and the capacity of managers to adapt management as the ecological and socio-economic landscape evolves will have been strengthened. Harvests of NTFPs will be controlled based on biological carrying capacities and will be contributing to the sustainable livelihoods of forest-edge communities. Strong support for the Park will be in evidence from Samareño society and decision-makers, with increased media coverage of conservation challenges, values and opportunities. Finally, a better nexus will have been achieved between conservation and development objectives, with conservation imbedded within the regional development paradigm.

44. Project Beneficiaries: The forest biodiversity of Samar Island accords a broad range of benefits at the local, national and global levels, including direct use, indirect use, option, and existence values. At the global level, benefits would be obtained by protecting species and habitats that would otherwise have been extirpated. At the local level, forest-edge communities will be direct beneficiaries of a strategy that nests conservation activities within a framework of sustainable community development. The project will enhance the menu of future livelihood options by paving the way for the development of ecotourism in the area and sustaining productive and consumptive use values for economically important biological values. Future generations of Filipinos will benefit from the foreclosure of threat to an important natural

⁹ PAWB has published a "Manual on the Establishment and Operationalization of IPAF's. At a national level, a Governing Board has been established to set guidelines for and monitor IPAF's. PA specific IPAF's may receive up to 75% of funds generated by the PA. At a site level, the fund is managed by PAMB. PAMB is responsible, through the PASu for collecting fees, which are remitted to the National Treasury through a specific PA sub-fund code. A system of bookkeeping and accounting has been prescribed. The PA sub-fund can be drawn down upon submission of work and financial plans and/or proposals approved by the PAMB. The Secretary of DENR or his duly designated representative (i.e. under secretary) is responsible for authorising work plans and funding.

heritage at a time when the country was unable to shoulder the incremental costs of management unilaterally. Finally PAWB and regional DENR staff would benefit from incremental know-how and field management experience.

45. Eligibility for GEF Financing: As a recipient of UNDP assistance, the Philippines meets the eligibility criteria described in paragraph 9(b) of the GEF instrument. The project is eligible for GEF assistance under Operational Programme No. 3 (Forest Ecosystems). In particular, it satisfies eligibility criteria by: 1] invoking a highly participatory management strategy; 2] being country-driven, initiated by Filipino authorities in accordance with their policy commitments; 3] securing co-financing to share the costs of executing conservation measures and achieving the sustainable development baseline; and 4] providing for long-term financial and institutional sustainability. The GEF would finance the agreed incremental costs of attaining biodiversity conservation objectives. The Philippines ratified the Convention on Biological Diversity in 1993, and the project meets CBD objectives in several ways, fulfilling requirements contained within Articles 6 [General Measures for Conservation and Sustainable Use], 7 [Identification and Monitoring], 8 [In Situ Conservation], 10 [Sustainable Use Management], 13 [Conservation Awareness], and 17 [Information Exchange].

46. Linkage with UNDP CCF: UNDP's Country Co-operation Framework (CCF) includes environmental protection as a key thematic focal area. UNDP presently supports components of the PA 21 and NBSAP, primarily by building institutional capacities to integrate conservation and development strategies. The proposed project is fully consistent with the objectives of UNDP's country programs, particularly in the arena of sustainable livelihoods. UNDP has committed co-financing of ~US\$ 1.5 million over 8 years to secure the needed sustainable development baseline.

47. Linkage with other GEF Initiatives: Activity design draws on lessons distilled from the World Bank-GEF Conservation of Priority Protected Areas project, which commenced in 1993. The Bank's project does not include sites in the Eastern Visaya's bio-geographic area, and focuses on existing rather than new PAs. The SIBP constitutes the first GEF intervention in the Eastern Visayas. The Philippines is also developing conservation initiatives in other ecoregions for GEF funding. UNDP would ensure that strong communications are maintained between these various initiatives, and that complementarities are optimized during their design and subsequent implementation.

PROJECT IMPLEMENTATION

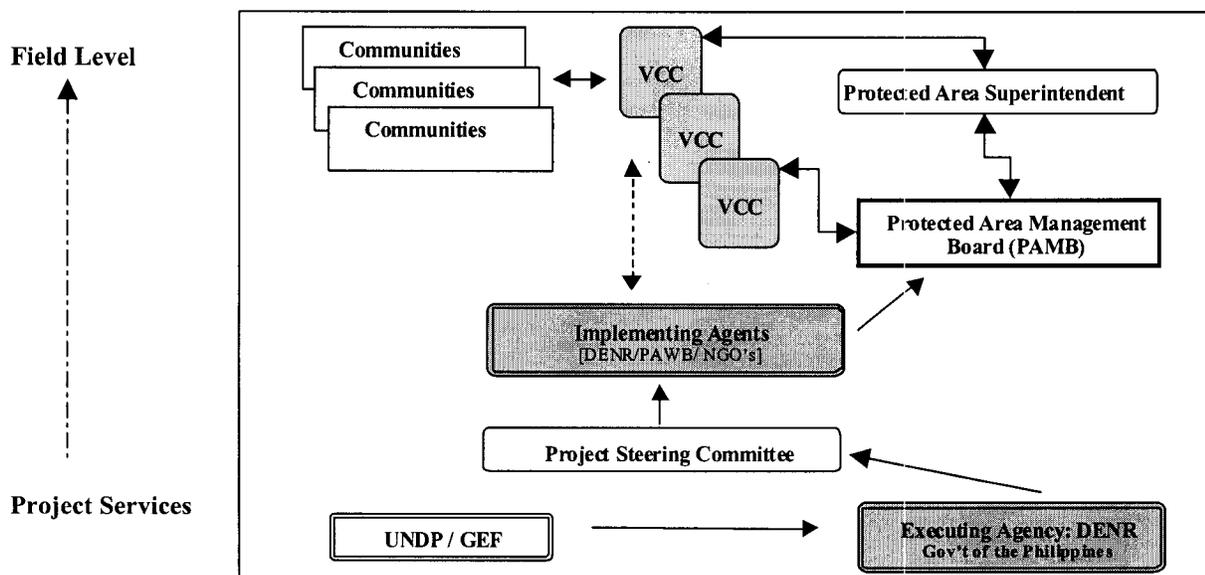
48. The project would be executed by the GOP, through DENR, following UNDP requirements for nationally executed projects. UNDP will be jointly accountable with the GOP for the administration of project moneys. DENR would be responsible for 1] certifying expenditures in line with approved budgets and work-plans; 2] monitoring and reporting on the procurement of inputs and delivery of outputs; 3] co-ordinating interventions financed by the GEF and UNDP with other parallel interventions; and 4] preparing Terms of Reference for consultants and tender documents for sub-contracted inputs. A project office led by a National Project Director and backstopped by a staff of technical experts and administrative support personnel would be created to assist perform these functions. UNDP would be responsible for

funds management and the final approval of payments to vendors, recruitment of consultants, procurement of equipment (>US\$ 10,000), and sub-contracting arrangements. A Project Steering Committee (PSC) would be established to oversee project operations, and would approve annual work-plans and progress reports, ensure implementation of the recommendations of independent evaluators, and co-ordinate advocacy functions, as necessary, to ensure the smooth passage of legislation for the SINP. The PSC would be chaired by DENR, and will include representatives from UNDP, DA, NGOs, provincial government, VCC's and FPE.

49. Implementation responsibilities will be shared between PAWB/DENR¹⁰ and Samareño NGOs (see matrix below). The implementing agents will work closely with PAMB, VCCs and local communities to implement activities at the field level. This arrangement allows for a division-of-labor based on comparative advantage. Arrangements will be reviewed during independent evaluations of the project and may, if considered necessary, be modified \ to improve delivery.

Activity	Implementing Agent
Management planning (Output 1) PA operations (Output 2) Negotiation of tenure instruments (Output 3) Sector policy integration (Output 5) Livelihood support operations (Output 6)	PAWB/DENR
Community engagement & social organization (Output 3) Conservation awareness raising (Output 4) Participation in PSC and PAMB	Samareño NGOs

SCHEMATIC: IMPLEMENTATION ARRANGEMENTS



¹⁰ The project has been scheduled over a time horizon of eight years to avoid taxing the absorptive capacities of the implementing agents. Implementation responsibilities will be delegated to DENR's office in Region VIII covering the Eastern Visayas region. (the Region VIII office currently employs 767 staff.) The regional office is not presently implementing other GEF projects, and indeed, other large foreign-assisted projects and, with the support of Samareño NGO's and local government authorities, has the absorptive capacity to implement this project.

50. Public Participation: Project development activities have provided for extensive stakeholder participation in design-work and stakeholders have expressed support for the project's proposed conservation strategy. An inception workshop (with 86 participants) was convened to clarify and debate project objectives and obtain early input into the design process. A Steering Committee comprising of nine representatives from DENR and Provincial Authorities, and nine from Samareño NGOs and community-based groups met seven times during the course of project development to oversee the process. A subsidiary Technical Working Group with 19 members, including experts in the social and biological sciences, was convened 5 times. Teams of social outreach specialists were engaged to discuss conservation needs and challenges with forest-edge communities, and undertook community mapping in 57 *barangays*, assisting to uncover local needs and perspectives. The local NGO: Tandaya, was engaged to develop a public participation plan, identifying critical interventions and processes for participation. To create awareness of project activities, the PDF team produced a regular newsletter. Finally, extensive consultations were held with provincial and local government officials and with representatives of church groups, universities, donors and other key institutions.

51. The success of the conservation strategy hinges on the solid participation of communities. VCC and NGO representatives on the PAMB and PSC will help guide and monitor participatory management. Forest-edge communities will work collaboratively with the implementing agents to develop Park Management Plans and accompanying regulations. These will specify management zones, delineate management functions, including surveillance and enforcement, between the VCCs and PaSu and set performance standards. Activities under Outputs 2 and 3 will enable PaSu and the VCCs to execute their respective responsibilities. Social organization activities would seek to empower communities to participate on an equal footing with other stakeholders. Social assessments will be performed biennially to maintain a record of social processes and stakeholder perspectives, and uncover social conflicts between stakeholders at an early stage. The results of these assessments will be presented to the VCCs and PAMB, enabling them to take corrective actions as necessary.

FINANCIAL ARRANGEMENTS

52. Incremental Costs: Agreed incremental costs to be financed by the GEF amount to US\$ 5,759,470 excluding preparatory assistance. Co-financing amounting to US\$ 7,123,420 has been leveraged, reflecting the fact that the project will generate domestic in addition to global benefits.

BUDGET:

Project Outputs	Phase 1 (US\$)		Phase 2 (US\$) ¹¹	
	GEF	Cofinancing	GEF	Cofinancing
Adaptive Management Framework	436,200	GOP: 106,400	197,200	GOP: 225,100
PA Management Operations	987,200	GOP: 608,000	490,600	GOP: 1,602,200
Community Based Conservation	1,243,900	GOP: 50,400 FPE: 456,000	786,350	GOP: 109,400 FPE: 456,000

¹¹ While the project is part of the public investment plan, GOP funding will be committed through annual budgetary appropriations. The confirmation of co-financing for phase 2 is a pre-requisite for commencement of the phase.

Project Outputs	Phase 1 (US\$)		Phase 2 (US\$) ¹¹	
	GEF	Cofinancing	GEF	Cofinancing
Conservation Awareness Raising	310,050	NGO/CH: 31,100	314,070	NGO/CH: 31,100
Integrating Conservation and Development	200,800	USAID: 350,000 UNDP: 90,700 FPE: 10,800	227,200	UNDP: 82,120 FPE: 12,500
Conservation Compatible Livelihoods	151,400	GOP: 1,267,800 UNDP: 538,000	87,100	GOP: 282,300 UNDP: 813,500
Sustainable Financing	14,500		312,900	
Total Full Project	3,344,050	3,509,200	2,415,420	3,614,220
Sub Total: Full Project	GEF: US\$ 5,759,470 Cofinancing: US\$ 7,123,420			
Project Preparation	GEF US\$ 0.35 GOP US\$.075			
GRAND TOTAL (PHASE 1 + PHASE 2+ PREPARATION) US\$ 13,307,890			G E F: US\$ 6,109,470 Cofinancing: US\$ 7,198,420	

53. Cost Effectiveness: Total costs compare favorably with other projects aimed at establishing new protected areas. While the option of reducing the time horizon for implementation was considered (to reduce project costs), it was discarded because it is unlikely that the set conservation challenge can be met without an ample time budget. In the longer term, the community-centered approach advanced will reduce the recurrent costs of conservation management and enhance the prospects for success, thus ensuring that investments are cost-effective.

SUSTAINABILITY OF PROJECT RESULTS

54. Project Risks: The assumptions that underpin project design are listed in the log frame. Seven key risks have been identified. These are listed below, with a description of abatement measures.

Risk	Rating	Abatement Measure
Possible immigration to the area, spurred by conservation incentives.	L	Tenure and usufruct rights would only be extended to those households that can prove long-term residence, and a careful check will be made to verify residency before claims are processed. The GOP has established a land acquisition and distribution program covering alienable non-forest lands in Samar, providing a mechanism for discouraging immigration to forest lands. Some 6,800 hectares of land were distributed under this scheme in 1998. The tenure scheme proposed under this project will be coordinated with that initiative.
Delay in obtaining congressional approval of PA status.	M	The PSC will have a strong advocacy function; Representation has already been made to local congressmen who have articulated their strong support for the initiative, as have provincial authorities. Approval is a trigger for phase 2.
Possibility for conflict between stakeholder groups, particularly gov't and NGO players.	M	This risk can be reduced by providing conflict resolution services, and through careful selection of personnel; significant efforts have been made to build a mutual consensus between stakeholder groups on the project strategy during project development. The project office will mediate dialogue between the principal actors until the basis of trust is solidified.
Institutional rigidity may hamper creation of a strong PASu office.	M	Functions will be delineated between PASu, PENRO and CENRO during phase 1; PASu will report directly to the Regional Executive Director. The creation of a strong PASu office, and transfer of resources from CENRO/PENRO to PASu will be a pre-requisite for phase 2.
Delay in processing tenure instruments.	M	Supply of technical assistance to DENR to assist staff to process claims and legal work.
Lack of co-operation by		Project design builds on consultations with communities; the participatory planning and

Risk	Rating	Abatement Measure
local communities in arresting threats to forest landscape.	L	management framework will ensure community perspectives are recorded and addressed during activity implementation. Independent social assessment will track social impact and local perceptions of conservation. Social organization would encourage application of peer pressure within communities to curb abuse.
Weak programming between GEF/ co-financed project inputs.	L	The PSC will facilitate joint programming between GEF inputs and those financed by other financiers; co-financing commitments would be confirmed <i>ex ante</i> (prior to and as a pre-condition for commencement of each project phase).

Risk rating L=low; M=medium; H=high

55. Sustainability: Institutional sustainability would be assured by strengthening the capacities of all key institutional actors in the conservation management arena, namely: PAWB-PASu, PAMB, the VCC's, Provincial and Municipal Planning Offices, and Samar NGOs. Training would impart a range of skills, including conflict resolution, administration, reporting, public relations, enforcement, monitoring, planning and maintenance. A total of 35 new staffing positions will be created within PAWB-PASu the incremental costs of which would be gradually absorbed by the GOP. An implementation span of 8 years has been selected to enable institutional capacities to mature. Financial sustainability would be strengthened through interventions planned as part of Output 7.

MONITORING, EVALUATION AND LESSONS LEARNED:

56. The project will be implemented through an adaptive framework that feeds the findings of process- response monitoring into operational planning, thus enabling management strategies and activities to be adjusted as necessary where corrective measures are warranted. Monitoring exercises would involve both government and local communities, in order to facilitate inputs from all stakeholders and obtain a common understanding of successes and failures in management. The Executing Agency will be required to prepare quarterly and annual work-plans and report to UNDP and DENR on progress in achieving targets enumerated in the plans. The Quarterly Progress Reports (QPRs) would provide a brief summary of the status of input procurement and output delivery, explain variances from the work plan, and present work-plans for each successive quarter for review and endorsement. Annual Progress Reports (APR's) would provide a more in-depth summary of work-in-progress, measuring performance against both implementation and impact indicators. APR's would inform decision-making by the Project Steering Committee, which would evaluate whether any adjustment in approach is required. Finally, a terminal report would be completed prior to the completion of each phase of the project detailing achievements and lessons.

57. Upon commencement of project implementation, the project office would develop analytical and sampling tools for field monitoring activities. The logical framework provides a set of performance indicators to measure the delivery of outputs, and impact indicators, measuring attainment of project objectives. These indicators will be further refined following in-depth biological and social assessments scheduled during year 1 of implementation under output 1. The following impact indicators have been pre-selected: 1] presence of indicator forest dependent species in areas under threat of 'defaunation'; 2] changes in the size of habitat blocks, including critical biological corridors; and 3] changes in human settlement patterns. Process monitoring will also be undertaken to assess changes in the magnitude of threats. Monitoring would involve several methods, including field surveys (transect plots), evaluation of aerial

imagery, canopy cover assessments and targeted questionnaires. Monitoring will be conducted both independently, by trained biologists and social scientists who will conduct biennial biological and social assessments, and by trained local observers, including park rangers and designated community representatives, who would be trained in monitoring, record keeping and assessment methods. Part of the purpose of such exercises would be to build the capacity of local managers to sustain monitoring operations over the long-term.

58. The project will be subject to two mandatory independent evaluations. The first of these will be scheduled during the third quarter of year 3 to determine whether the pre requisites for graduation to phase 2 have been satisfied. Triggers are listed in the logical framework and include legislative clearance of PA designation, establishment of the permanent PAMB, and formal delimitation of PA boundaries. A second evaluation will be scheduled upon project termination and UNDP, may, at its discretion, schedule additional independent evaluations if deemed necessary.

59. Design builds on lessons distilled from other conservation programs in the Philippines:

Lesson	Design Feature
Community participation cannot be assured without a commitment to empowerment, institution building, and strengthening social relations among stakeholders.	Lesson incorporated into the design of Output 3 with empowerment activities designed to level dis-equilibria in social relations among collaborating stakeholder groups.
Community-based conservation has been shown to be both time and human –resource intensive, and the allocation of adequate time budgets and personnel is important.	Selection of 8-year time horizon for implementation, and strong investment in community outreach, social assessment, awareness raising and local institutional strengthening.
Conservation basics, such as surveillance and enforcement should not be ignored when promoting integrated conservation and development approaches.	Surveillance, enforcement and other basic conservation functions will be strengthened as part of Output 2. The bulk of project resources are allocated towards field intervention.
Need for projects to maintain political neutrality	To be addressed by PSC, and accommodated in micro-planning.
Need for common understanding among implementing agents regarding project objectives and strategies.	Project objectives and strategies have been clarified with implementing agents during design; further consensus building workshops will be scheduled if necessary during phase 1
Congressional approval of PA status is time consuming, and requires considerable advocacy to ensure smooth passage of enabling legislation.	Addressed in Output 2; PSC will play a strong advocacy function.
Need to ensure ‘due process’ and transparency when appointing community representatives to VCCs and PAMB.	Process to be clarified and agreed with communities prior to formalization of management structures.

LIST OF ANNEXES

- ANNEX A. INCREMENTAL COST
- ANNEX B LOGICAL FRAMEWORK
- ANNEX C. STAP TECHNICAL REVIEW/ RESPONSE TO STAP COMMENTS
- ANNEX D. COUNTRY ENDORSEMENT

OPTIONAL ANNEXES: The following annexes have been placed on file at the GEF Secretariat and are available upon request. The information may also be accessed directly from the official GEF web site (go to work programme documentation: <http://www.gefweb.org/meetings/meetings.htm>)

ANNEX E. DESCRIPTION OF SITE BIOLOGY: A description of site biology and key ecological features is provided to justify selection of the Samar island site. A map of the project area is appended.

ANNEX F. THREATS ANALYSIS: An overview of the proximate threats to forest biodiversity and description of their root causes is provided, together with a summary of abatement measures to be instituted.

ANNEX G. SUMMARY OF PUBLIC PARTICIPATION ARRANGEMENTS: This annex provides a description of the measures that will be taken to ensure the effective participation of local communities and other primary stakeholders in the execution of conservation management interventions.

ANNEX H. PROJECT CATEGORIZATION SHEET

ANNEX I: LIST OF REFERENCES

ANNEX A: INCREMENTAL COST ANALYSIS

1. Broad Development Objectives:

1.1 The Philippines is strongly committed to sustainable development, and biodiversity conservation and forest management constitute policy priorities within the nation's broader sustainable development agenda. Having ratified the Convention on Biological Diversity in 1993, the country completed a National Biodiversity Strategy and Action Plan in 1997. While the Plan is broadly focused and advances six Conservation Strategies, the policy cornerstone for biodiversity conservation remains the establishment and sound management of the National Integrated System of Protected Areas (NIPAS). Significantly, recognizing that conservation objectives are unlikely to be fulfilled in the long run without the active participation of local communities, the Government is moving to implement a participatory framework that accords communities with important conservation management responsibilities. The PA system, created in 1992, presently comprises 209 sites. The GOP appropriates over US\$ 9 million annually to recurrent biodiversity management programs¹ –a mark of its conservation commitment, especially given present fiscal constraints and other pressing development needs. But this appropriation is clearly insufficient to expand the conservation estate as needed to widen its biogeographic coverage, and the GOP is seeking international assistance to defray the costs of capacitating incremental conservation.

2. Global Environmental Objectives:

2.1 The project's global environmental objective is to conserve a representative sample of the biodiversity of the Philippines by creating a new PA in the Eastern Visayas biogeographic area: the Samar Island Natural Park (SINP). The Park has a number of biological and ecological attributes that make it globally significant: 1] it constitutes an important repository of biodiversity within a 'megadiversity' country and conservation hotspot; 2] it is located within an endemic bird area and center of plant diversity; 3] it contains one of the largest and most ecologically intact tracts of lowland tropical rainforest in the archipelago; 4] it harbors important beta diversity, including dipterocarp, mossy, and limestone forests, and extensive limestone caves; and 5] is an important storehouse of endangered species, including the Philippine Eagle. These attributes are threatened by anthropogenic pressures. Although the Government of the Philippines, local governments and non-government entities are committed to the site's protection, baseline interventions are inadequate to operationalise effective field management. This creates the risk that important global environmental benefits would be forfeited without intervention.

3. Baseline:

3.1 The threats facing biodiversity in Samar are chronicled in the threats matrix, which distinguishes between current threats and prospective future ones, and describes the various underlying causes. Project proponents have identified seven categories of activities necessary to mitigate these pressures, namely:

- a] Monitoring and planning functions;
- b] Surveillance, enforcement and other operational functions;

¹ This estimate is based on appropriations during FY 99, and excludes programs financed by donors and NGOs.

- c] Social organization to facilitate community-based forest management;
- d] Environmental awareness and education;
- e] Integrated management of development and conservation;
- f] Development of sustainable livelihoods;
- g] Sustainable financing.

A number of activities would occur irrespective of GEF intervention in the coming years. The GOP would be the main source of budgetary appropriations for these interventions. While insufficient to comprehensively remove all threats, these appropriations nevertheless provide an important baseline in which this project is fully nested. A brief description of these activities follows:

a) **Monitoring and Planning Functions:** The GOP originally planned to create a total of 8 small protected areas in Samar island, in addition to the three sites that have already been established. Accordingly, the GOP would have appropriated some funds through DENR to prepare work-plans and draft enabling legislation. This would have covered salary expenses for a skeletal planning office in Samar, but would have been insufficient to recruit the resource people needed to develop Management Plans. The total baseline appropriation for planning functions in Samar is projected at US\$.546 m over the next 8 years. This would be supplemented by some investment in monitoring, focusing on identifying components of biodiversity rather than assessing trends in the social and biological landscape. An inventory of wetland systems is planned, as are some rapid field assessments of fauna. But gaps would remain in survey effort, particularly for flora, forests on limestone, freshwater fish and invertebrates. The aggregate investment in monitoring is estimated at US\$.234 m. over the survey period.

b) **Surveillance, Enforcement and other Operational Functions:** DENR would have appropriated a total of US\$ 1.111 m for the management of the existing and new PAs in Samar. This appropriation would have included investments in a watch and ward team in the Philippine Eagle Sanctuary at Taft (in Eastern Samar Province), some management of the Calbiga and Sohoton caves, mainly to prevent limestone mining, establishment and maintenance of a wildlife rescue center, and the regulation of wildlife collection and trade. However, there would be no development of PA infrastructure, including control posts and ranger accommodation, and enforcement would be coordinated from regional DENR centers, reducing efficacy. Even if enforcement were to be successful in the existing PAs, biodiversity would still be lost because these sites are fragmented and clearly too small to safeguard ecological functions.

c) **Social Organization:** Several government and non-government agencies are active on this front and significant baseline appropriations are anticipated over the coming 8 years. Activities would 1] strengthen governance within LGUs; 2] enhance citizen participation in governance by improving consultation processes; 3] undertake a rural cadastral survey, to delineate existing land holdings, clarify prior land right and provide legal assistance for agrarian reform; 4] strengthen the data management system for land records; and 5] organize local community groups to partake in social forestry initiatives. The baseline has been costed at US\$ 8.36 m, broken down as follows: DENR, US\$ 2.64 m; DA, US\$ 0.039 m; DAR, US\$ 4.436 m; UNDP US\$ 0.296 m; DSWD, US\$ 0.815 m; DILG, US\$ 0.048 m; and NGOs, including church groups, US\$ 0.083 m There is however, presently little linkage between the afore-mentioned programs and biodiversity conservation and complementary interventions are required to organize communities around conservation-specific land and wild resource management objectives.

d) **Environmental Awareness and Education:** The Samareño NGO community has been an active proponent of conservation, but lacks the financial wherewithal to launch and sustain a broad-based campaign. Thus the conservation constituency remains small, and civil society poorly tuned to conservation values and management needs. Environmental education constitutes one of DENR's core functions. Total baseline appropriations have been costed at US\$ 1.323m, of which DENR would allocate 89% and NGOs 11 %. [N.B. these figures do not include 'sweat equity' volunteered by NGO activists.]

e) **Integrated Management of Development and Conservation:** The GOP would expend resources performing environmental impact assessments, providing concession permitting services, pollution control operations, strengthening data management capabilities and statistical services, and compliance monitoring. These activities would address negative externalities of development ventures, including agriculture, mining, fisheries and industrial development, as well as public works. But the capacity of regulatory agencies to integrate biodiversity management objectives into the development-planning framework is limited. Understanding of conservation values and benefits is inadequate amongst decision-makers, spatial and temporal plans for integrating conservation and development operations are lacking, there are no standards for development operations in ecologically sensitive areas, and capacity to plan, implement and monitor impact mitigation measures to sustain conservation processes is inadequate. These constitute potent barriers to effective integration of conservation with development, posing the risk that future development activities will impose adverse impacts on Samar's forest biodiversity. Total baseline costs for environmental management are estimated at US\$ 8.66 m over 8 years, of which 44.37% would be appropriated by DENR (environmental oversight), and the remainder by DAR (land use management).

f) **Development of Sustainable Livelihoods:** The baseline has been conservatively costed at US\$ 6.826 m². DENR would appropriate US\$ 1.6 m for social forestry programs, the promotion of agro-forestry and soil conservation in upland areas. The Department of Agriculture (DA) would allocate US\$ 1.82 m for seed production, micro-credit and smallholder marketing support. The NIA would provide US\$ 2.6 m in funding for the Catubig valley agricultural advancement project, aimed at improving the productivity of farming systems in an area to the immediate north of the SINP. A number of agencies would invest in capacity development focusing on small business management (basic book keeping, marketing etc), sericulture and local cottage industries. These include DAR (US\$.108 m), DSWD (US\$ 0.015m), DTI (US\$ 0.018 m), DOLE (US\$ 0.079m), TESDA (0.378 m) and Filipino universities (0.112 m) Finally various NGOs, including the FPE, would provide funding of US\$.039 m for social forestry, and wasteland restoration through reforestation. However, the baseline is weak in a number of areas 1] there are spatial gaps in the extension of social agro-forestry programs providing an alternative to swidden agriculture at the forest edge (particularly in the south and east); 2] there are no plans to support the development of ecotourism, although tourism offers a conservation congruent livelihood alternative, and 3] there are no immediate plans to strengthen *in situ* management of non timber forest products.

g) **Sustainable Financing:** Conservation management programs in Samar are currently dependent on GOP budgetary appropriations in their entirety. While the NIPAS legislation allows for the creation of integrated protected area funds, and introduction of user pays

² Considerable investments (> US\$ 90 m) in livelihood support activities are also planned in the coastal plain and areas contiguous to the uplands (not costed in the baseline), helping to reduce emigration pressures to the forest-edge.

mechanisms to finance PAs, there are no plans to establish such a fund in Samar, nor is there the capacity to develop enabling fiscal instruments.

4. GEF Alternative

4.1 The proposed GEF Alternative would catalyze the creation and effective management of the new Natural Park (SINP), comprising a core area zoned for strict protection, recreational and scientific use and controlled harvests of NTFP's and a buffer area zoned for sustainable agro-forestry and habitat restoration. Project interventions have been bundled into seven synergistic outputs as follows:

(a) **Adaptive Management Framework:** Interventions would strengthen biodiversity monitoring, social assessment and planning functions. The biodiversity monitoring component would update the biological inventory, develop a biodiversity M & E plan, purchase aerial imagery and other monitoring tools, strengthen DENR's data management systems in Samar, perform biannual biological surveys, obtain independent scientific input, and mobilize a cadre of trained local observers to capture local knowledge. The social assessment component would collate existing social, demographic and economic data and, with further community input, design a social monitoring plan, train local monitors in social survey methods, and supply technical assistance to interpret social assessment outcomes. The planning component would establish the foundations for participatory planning with local communities, culminating in the preparation of 5 year Management and annual Operational Plans for the SINP. These activities are all complementary to the baseline and would not be needed but for the need to protect biodiversity. Costs are projected at US\$ 964,900, partitioned as follows: GEF US\$ 633,400, and GOP US\$ 331,500.

(b) **PA Management Operations:** Activities would establish a representative multi-stakeholder PA Management Board (PAMB), recruit additional staff needed to fulfill incremental PA management functions, finance staff training, and supply basic equipment, supplies and infrastructure to operate the SINP. These costs are all complementary to the baseline, and unnecessary but for the need to manage biodiversity. Of the total costs (US\$ 3,688,000), the GEF would appropriate US\$ 1,477,800 and GOP US\$ 2,210,200.

(c) **Community-based Conservation Management:** The project would mobilize and train community workers to serve as intermediaries in the community-based conservation process, organizing communities and strengthening their capacity to engage in conservation management. Tenurial and usufruct instruments would be negotiated with communities as part of a conservation compact that provides an incentive for good resource stewardship. While this component is necessary to secure global environmental objectives by buffering the core area from threat, activities would also generate incidental domestic benefits in the longer-term by empowering local communities to engage in sustainable resource use practices. Activity costs US\$ 3,102,050 would be shared by the GEF (US\$ 2,030,250), FPE US\$ (912,000), and GOP (US\$ 159,800), with communities appropriating sweat equity inputs (not monetized).

(d) **Conservation Awareness Raising:** A conservation awareness program would raise the profile of the SINP within institutions of civil society in Samar. The component will generate non tangible, long-term global benefits, and is wholly incremental to the baseline of environmental education. Costs, amounting to US\$ 686,320, would be shared by the GEF (US\$ 624,120) and NGO/Church groups (US\$ 62,200).

(e) **Integrating Conservation and Development Policy Operations:** Activities would evaluate the comparative economic values of conservation vis a vis alternative land uses, incorporate conservation needs appraisal requirements into environmental impact assessments conducted for buffer zone development, and build conservation objectives into provincial multi-sectoral development plans. USAID would finance an assessment of the costs and benefits of different land uses. Funding would be provided by the FPE (US\$ 23,300); UNDP (US\$ 172,820); USAID (US\$350,000); and GEF: (US\$ 428,000).

(f) **Conservation-Compatible Livelihoods:** The project would finance a model management program for non timber forest products, focusing on rattan and *Agathis* sp. Co-financing has been secured to bolster management capabilities (i.e. to conduct resource inventories, yield and regeneration studies, planning and monitoring, and improve quality control for produce). GEF support aims at removing barriers to conservation, by ensuring that NTFP management provides a conservation incentive to communities, and ensuring that harvest methods are ecologically benign [GEF: US\$ 112,438; UNDP US\$ 297,652; GOP US\$ 15,300]. The project would also fund an ecotourism demonstration, aimed at developing nature tourism as a conservation compatible livelihood. The baseline would be reinforced (non GEF funding) through advancement of a village home stay program, and tourism promotion specific to the site. GEF funding would be used to develop a code of conduct for tourism, and develop and implement strategies to manage the external ecological and cultural impacts of tourism [GEF: US\$ 84,814; UNDP: US\$ 473,952; GOP US\$ 84,814.] Finally, UNDP and the GOP would co-finance a sustainable upland farming demonstration program, aimed at adapting farming systems in the different agro-ecological zones of the buffer to ensure conservation compatibility [UNDP: US\$ 579,396; GOP: US\$ 1,449,886].

(g) **Sustainable Financing:** An Integrated Protected Areas Fund would be operationalized, capitalized by visitor fees, road tolls, NTFP permit fees and penalties for breach of regulations GEF: US\$ 327,400

5. Incremental Costs and Benefits:

5.1. The Systems boundary for the project is formed spatially by Samar island's upland environments, temporally, by the life of the project (8 years) and thematically by the various interventions needed to buffer the island's rainforests from threat. The incremental cost matrix provides a summary of the domestic and global benefits associated with each of the 7 project outputs. Activities that would generate highly tangible domestic benefits would be co-financed, while GEF moneys would be appropriated for activities with intangible, diffuse and long-term benefits accruing globally. The cost of the business-as-usual baseline, occurring irrespective of GEF support, has been estimated at US\$ 27.07 m. Co-financing amounting to US\$ 3,607,520 has been secured to leverage a sustainable development baseline (Outputs 3, 5 AND 6). These are activities that yield sizable domestic benefits, which nevertheless are needed to conserve biodiversity. Incremental costs amount to US\$ 9,275,370, of which the GEF would finance US\$ 5,759,470, and co-financiers US\$ 3,515,900 (net of project preparation costs). Project preparation costs amount to US\$ 425,000 of which the GEF financed US\$ 350,000 and the GOP, US\$75,000. Total project costs, inclusive of the sustainable development baseline, increment and project preparation amount to US\$ 13,307,890. The GEF Alternative, comprising total project costs and the business-as-usual baseline, amounts to US\$ 40.378 m. The GEF would fund a modest 15 % of the total cost of the GEF Alternative.

INCREMENTAL COST MATRIX

Component	Cost Category	Cost (in millions)	Domestic Benefit	Global Benefit
Output 1: Adaptive Management Framework	Baseline	Total= US\$ 0.781	Weak planning and monitoring framework hinders forest management operations	The legal status of Samar's forests as a forest reserve, while designed to maintain tree cover, is inadequate to protect biodiversity; Weaknesses in planning and monitoring erode the efficacy of management.
	GEF Alternative	Total= US\$ 1.75	Participatory planning and monitoring capabilities are improved	Creation of zoned Natural Park provides added legal protection for biodiversity; Better capacity to plan, monitor and adapt management interventions to ensure threat remediation
	Increment	GEF: US\$.633 GOP: US\$.332 Total: US\$ 0.965		
Output 2: PA Operations	Baseline	Total= US\$ 1.111	Inadequate financial and human resources to protect a bio-geographically representative sample of the nation's biological heritage	Failure to operationalise surveillance, enforcement and other conservation functions is leading to an open access dilemma in the SIFR, a loss of option and existence values for biodiversity and erosion of carbon sequestration services
	GEF Alternative	Total=4.799	Effective management of the SINP contributes to fulfillment of the objectives of the NIPAS	Operationalization of conservation functions in the SINP safeguards natural capital values
	Increment	GEF: 1.477 GOP: 2.210 Total: US\$3.688		
Output 3: Community-based Conservation	Baseline	Total =US\$ 8.36 6	Weak ability to mesh conservation approaches with the needs of communities	Failure to consult and involve local communities during the conservation process correlates in ineffective management
	GEF Alternative	Total= US\$ 11.462	Better integration of conservation and community development objectives	Prospects for achieving long-term conservation objectives improved
	Sustainable Development Baseline	GOP: US\$.159 Total: US\$.159		
	Increment	GEF: US\$2.030 FPE: .912 Total: US\$ 2.942		
Output 4: Conservation Awareness & Education	Baseline	Total= US\$ 1.324	Weak understanding of the relevance of conservation to sustainable development in Sarnar	The Samareño conservation constituency, although active, remains small and marginalized, posing the risk that local efforts to spearhead responsible development will not be sustained.
	GEF Alternative	Total=2.010	Public discourse on sustainable development enriched by greater appreciation of conservation values	Enhanced awareness of conservation values amongst decision-makers and civil society serves to build local/ regional constituency for conservation
	Increment	GEF: US\$.624 NGO: US\$.062 Total: US\$.686		
Output 5: Regional Planning	Baseline	Total= US\$ 8.662	Lack of capacity within provincial planning units to internalize conservation objectives into development strategies	Future development poses external risks to biodiversity
	GEF Alternative	Total=US\$ 9.636	Improved understanding of the linkages between conservation and development at the provincial level and added understanding of the	Improved match between conservation and development objectives ensures that spatial planning supports PA

Component	Cost Category	Cost (in millions)	Domestic Benefit	Global Benefit
			economic value of conservation:	management
	Sustainable Development Baseline	USAID: US\$ 0.35 m UNDP: US\$.173 FPE: US\$.023 Total: US\$.546		
	Increment	GEF US\$: 0.428 Total: US\$ 0.428		
Output 6: Sustainable Livelihoods	Baseline	Total= US\$ 6.826	Poor smallholder agricultural productivity; loss of forests forecloses recreation and other livelihood options; NTFPs provide direct productive and consumptive use values, but resource harvests are unsustainable	Lack of sustainability in NTFP use and damaging harvest practices threaten ecological processes; benefits of extraction accrue in large part to outsiders providing little conservation incentive to forest-edge communities;
	GEF Alternative	Total=US\$ 8.88	Improvement in agricultural services enables farming systems intensification; protection of forest cover and removal of barriers to sustainable use of NTFPs expands menu of future livelihood options	Paradigm shift from unsustainable to sustainable uses of NTFPs; internalization of the costs of NTFP management in production system;
	Sustainable Development Baseline	UNDP: US\$ 1.351 GOP: US\$ 1.550 Total: US\$ 2.901		
	Increment	GEF: .238 Total: US\$.238		
Output 7: Financial Mechanism	Baseline	Total= nil	Funding dependent on GOP budgetary appropriations; Weak fund raising capacities and budget preparation skills in local DENR	Lack of surety that financial sustainability will be realised in conservation operations
	Alternative	Total= US\$.327	Strengthening of financial management capacities and widening of funding base	Assured funding appropriations cover recurrent conservation management costs
	Increment	GEF: .327 Total: US\$.327		
Total	Baseline	US\$ 27.07 m		
	GEF Alternative	US\$ 40.378		
SD Baseline	Full Project Non-GEF	US\$ 3,607,520		
Incremental Cost	Full Project GEF	US\$ 5,759,470		
	Non-GEF	US\$ 3,515,900		
	Total	US\$ 9,275,370		
	Preparation GEF	US\$ 350,000		
	GOP	US\$ 75,000		
	Total	US\$ 425,000		
Grand Total	13,307,890			

ANNEX B: LOGICAL FRAMEWORK

Objectives	Indicators	Means of Verification	Assumptions & Risks
<p>Goal: A representative sample of the forest biodiversity of the Philippine archipelago is protected</p>	<p>1. Presence of indicator forest-dependent species in Samar (Philippine Cockatoo, Rufous Hornbill, Long Tailed Macaques, Philippine Warty Pig, Flying Foxes—<i>Acerodon jubatus</i> & <i>Eonycteris robusta</i>) in 5 permanent transect plots</p> <p>2. Habitat monitoring in yr. 2008 indicates that there has been no reduction in total area of primary forest from 1999 baseline [lowland forest: 119,248 hectares; mossy forest 1,650 hectares]</p> <p>3. Connectivity maintained between 2 largest primary forest blocks with no net reduction in biological corridor beyond yr. 1999 baseline (distance between blocks 18 kilometers; corridor area 15,700 hectares)</p> <p>4. No decrease in canopy cover of secondary forest beyond yr 2000 baseline</p>	<p>Biannual biological surveys in transects (baselines to be concretized in year 1 and adjusted for seasonality)</p> <p>Aerial photographs</p> <p>Aerial photographs</p> <p>Aerial photographs Field Surveys</p>	<p>* Samar island forest ecosystems contain the best remaining sample of biodiversity within the Eastern Visayas bio-geographic area</p> <p>* Viable populations of threatened species remain within the SINP</p> <p>* Adaptive management strategy enables interventions to be geared towards new management challenges</p>
<p>Purpose: The Samar Island Natural Park is established and managed with broad-based stakeholder participation</p>	<p>1. Legislative approval of PA status obtained by yr. 2003 q4 (prerequisite for graduation to phase 2)</p> <p>2. No illegal new settlement within SINP core area and buffer zone beyond 2000 baseline</p>	<p>DENR notification</p> <p>Annual monitoring records</p>	<p>* Social fencing strategy effective in controlling immigration into SINP</p> <p>* Stakeholder receptivity to proposed conservation strategy remains high</p> <p>* Government willing to test new participatory management methods and share responsibilities and accountability</p> <p>* Baseline of sustainable development is assured</p>
<p>Output 1: An adaptive management framework for conservation management is established and operational</p>	<p>Phase 1</p> <p>* Operational Plans for phase 1 completed by first quarter of each year</p> <p>* First 5 Year Management Plan developed and approved by yr. 2, q4</p> <p>* PAMB established by yr. 1, q3</p> <p>* Biological assessment completed by yr. 2, q2 and data base for monitoring established by yr. 2 q4</p> <p>* Land use map and zoning plan completed by yr. 2 q4</p> <p>* Legislative approvals for gazettal of SINP obtained by yr. 3, q3 (prerequisite for phase 2)</p> <p>* By year 5, operational planning will be undertaken independently by PA authorities</p> <p>* Second five year management plan finalized by year 6, q1</p>	<p>Operational plans</p> <p>Management Plan & formal notification by DENR</p> <p>DENR notification</p> <p>APR</p> <p>APR</p> <p>Independent Evaluation</p> <p>APR and operational plans</p> <p>Management Plan</p>	<p>* Stakeholder conflicts are manageable and may be mediated using resources provided through the project/ partner agencies</p> <p>* Agreement can be reached between national, provincial and local governments and local communities on management requirements/ regulations</p> <p>* Legislative approvals can be obtained as per schedule</p>
<p>Output 2: Conservation</p>	<p>Phase 1</p> <p>* Full complement of PA staff recruited by yr. 2 q4</p>	<p>APR</p>	<p>* Qualified and dedicated staff available for recruitment</p>

Objectives	Indicators	Means of Verification	Assumptions & Risks
<p>functions are fully actualized and infrastructure established and maintained</p>	<ul style="list-style-type: none"> * Respective functions of PASu, CENRO and PENRO formalized by yr. 2 q3 * Infrastructural designs completed by yr. 3 q1 * Signage and interpretation materials designed by yr.4 q4 * PA boundaries fully delineated by yr.4, q2 (pre requisite for phase 2) <p>Phase 2</p> <ul style="list-style-type: none"> * Park headquarters constructed by yr. 5, q1/ 15 ranger posts completed by yr. 5, q3 and 15 by yr. 6 q 1 * Trail network constructed by yr. 5 q4 * PAMB meeting regularly and providing inputs into management (on-going) * Equipment maintained according to schedule (on-going) * Participatory conservation methods being independently applied by yr. 5 q2 	<ul style="list-style-type: none"> Notification by DENR/ Project records Blueprints/APR APR DENR notification/ APR APR/ Ground truthing APR/Ground truthing PAMB Minutes Independent Evaluation Independent Evaluation 	<ul style="list-style-type: none"> * Dis-equilibria in social status of community members of PAMB (vis a vis other stakeholders) leveled * Structure of PAMB reflects community-based management dimensions of project * Sufficient absorptive capacity exists to implement and sustain the proposed conservation strategy * Broad-based agreement by NGOs to collaborate in advancing proposed conservation strategy in place and sustained * Co-financing target of US\$ 1,302,200 realized [GOP]
<p>Output 3: A community-based conservation framework is tested and operational with strong community participation evidenced in all aspects of conservation and sustainable use management.</p>	<p>Phase 1</p> <ul style="list-style-type: none"> * Social outreach team mobilized by yr. 1 q2; ongoing briefing and debriefing nurtures outreach operations and ensures quality control * Village files established by yr. 1 q3 documenting outreach <p>Contractual responsibilities for DENR, LGUs and community actors negotiated by yr. 4 q1 (pre requisite for phase 2)</p> <p>Community Forestry Programme negotiated and in place for 40% BMUs</p> <ul style="list-style-type: none"> * 5 VCCs are created by yr. 4, q 2 * Annual SINP VCC forum convened by yr.4; * Community forestry guards designated by yr. 4 q1 <p>Phase 2</p> <ul style="list-style-type: none"> * Community forestry guards trained by yr. 5 q1 * Annual SINP VCC forum convened by yr. 4; * Community Forestry Programme negotiated and in place for remaining BMUs by yr. 6 q3 * Cadre of trained local observers trained by yr. 5 q2 	<ul style="list-style-type: none"> Team Field reports Village files DENR notification DENR notification/ Independent Evaluation APR APR APR DENR notification/ Independent Evaluation APR 	<ul style="list-style-type: none"> * Qualified community workers can be recruited locally * Intercommunity consensus on management strategies can be obtained * Stewardship compacts may be negotiated as per schedule * Strong community motivators are available to drive conservation measures at the local level * Co-financing target of FPE US\$ 456,000, GOP US\$ 50,400 realized.
<p>Output 4: Broad-based awareness of conservation values and management needs is imparted to forest-edge communities and other key Samareño stakeholders</p>	<p>Phase 1</p> <ul style="list-style-type: none"> * Communications strategy prepared and endorsed by yr. 1 q4 * Awareness programme for phase 1 prepared by yr. 1 q3; for phase 2, by year 4 q3 * Awareness materials for community outreach available by yr. 2 q2 <p>Phase 2</p> <ul style="list-style-type: none"> * Phase 2 awareness activities implemented by yr. 5 q2 * Increased coverage of conservation issues in local media evidenced by yr. 5 q4 	<ul style="list-style-type: none"> Communications Strategy Strategy on file APR APR/ Awareness survey News reports on file 	<ul style="list-style-type: none"> * Education authorities are receptive to revised curricula content * Local media willing to collaborate as active conservation partners * Co-financing target of Church groups & NGOs US\$ 31,100 realized
<p>Output 5:</p>	<p>Phase 1</p>		<ul style="list-style-type: none"> * Effective and independent watchdog function can

Objectives	Indicators	Means of Verification	Assumptions & Risks
<p>Conservation objectives are internalized in sectoral development planning, budgeting and activity delivery at the provincial and municipal levels</p>	<p>* Results of resource valuation study available by yr. 1 q4 * 3 Provincial workshops on integrated conservation and development convened by yr. 4 q 3 and fact sheets on conservation needs prepared by yr. 3 q1 Phase 2 * Conservation objectives reflected in regional development plans by yr. 5 q 2 * Watch dog function to monitor development activities operational by yr. 5 q2 * Ancillary eco-development activities (Output 6) funded throughout phase 2</p>	<p>Report on file APR Independent review of plans Independent review Independent review/ APR</p>	<p>* be institutionalized within the Samar Island Biodiversity Foundation * Successive LGUs and provincial authorities will respect ex ante agreements to delimit the SINP from logging and mining activities and respect other terms of the conservation agreement * Eco-development provides alternative source of local livelihood * Co-financing target of UNDP US\$ 82,100 & FPE US\$ 12,500 realized .</p>
<p>Output 6: Alternative, conservation-enabling livelihoods are in place, and the sustainability of wild resource use is assured</p>	<p>Phase 1 * Provisional harvest quotas for sustainable use of NTFP's established by yr. 4 q3 * Community consensus on ecotourism development and management strategies obtained by yr. 4 q3 * Ecotourism management plan drafted and approved by yr. 4 q3 * Tourism promotion activities initiated by yr. 4 q 3 * Results of farming systems research and management recommendations available by yr. 4 q 3 Phase 2 * Number of tourists visiting SINP increases as follows: 1999 baseline = 1,536 visitor days; yr. 2005: 4000 visitor days; year 2008: 8,000 visitor days) * Field assessment indicates application of sustainable use methods for NTFP by yr. 6 q1 * Target smallholders receiving extension advice and other agricultural support by yr. 5 q2</p>	<p>Guideline available Guideline available Management plan APR Report available Visitor records Independent monitoring Independent evaluation</p>	<p>* Exogenous factors, including law and order do not foreclose development of ecotourism as an alternative * Philippines remain attractive market for regional and international tourism and the tourism product is competitive * Benefit sharing arrangements foreclose economic stratification and attendant perverse incentives * Social fencing structures maintain controls over NTFP harvests by outsiders * Smallholders receptive to sustainable agricultural measures and incentives are sufficient to adapt farming systems * Co-financing target of UNDP US\$813,500 & GOP US\$ 282,300 realized</p>
<p>Output 7: Mechanism for financing the recurrent costs of conservation activities is in place</p>	<p>Phase 2 * 50% of additional staff salaries absorbed into DENR budget by year 5; by year 8, 100% * By year 8, incremental costs of community management provided by FPE and the IPAF.</p>	<p>Budget review Budget review</p>	<p>* Financial sustainability is not hampered by exogenous economic shocks * Equitable cost sharing arrangements involving DENR, LGUs, communities and FPE can be negotiated * Co-financing target of US\$ XX realized [show breakdown by source]</p>
<p>Phase 2 (years 5-8)</p>			
<p>Output 1</p>	<p>Phase 1 (years 1-4) 1.1 Prepare operational plans for years 1,2,3, and 4 1.2 Establish multi-stakeholder Protected Area Management Board (PAMB) and PA staff cadre 1.3 Complete biological and social assessments; biannual biological survey 1.4 Impart participatory planning skills to PAMB and PA staff cadre</p>	<p>1.9 Strengthen operational planning capacity within PASu 1.10 Undertake impact monitoring to determine biological, social and economic responses to conservation intervention 1.11 Evaluate monitoring results, and adapt management strategies as necessary 1.12. Prepare and obtain necessary clearances of second 5 year Management Plan</p>	

Activities	Phase 1 (years 1-4)	Phase 2 (years 5-8)
	<p>1.5 Define land use zones, including core area, buffers, and transition areas</p> <p>1.6 Design comprehensive 5 year Management Plan with accompanying regulations defining allowable activities, penalties and management incentives</p> <p>1.7 Obtain necessary legislative endorsement of PA status and regulations</p> <p>1.8 Develop enabling policies and administrative orders for community-based conservation</p> <p>1.9 Strengthen mapping capabilities</p> <p>1.10 Conduct mid-term project assessment</p>	<p>1.13 Conduct terminal biological evaluation</p>
Output 2	<p>2.1 Mobilize PA staff, including Protected Area Superintendent (PASu), core ranger cadres and community outreach staff</p> <p>2.2 Delineate functions of PASu, CENRO and PENRO</p> <p>2.3 Design park headquarters/administrative center, ranger posts and interpretation facility</p> <p>2.4 Design and commission signage and visitor interpretation materials</p> <p>2.5 Supply basic field and office equipment</p> <p>2.6 Delineate PA boundaries, using natural features and signage where necessary</p> <p>2.7 Sensitize PA staff to best practices in participatory conservation management by sponsoring study tours and workshops</p> <p>2.8 Operationalise policing, intelligence gathering, enforcement and reporting functions in conjunction with CENRO/PENRO and PNP</p>	<p>2.8 Construct park headquarters/administrative center, interpretation facility and ranger posts</p> <p>2.9 Create trail network for patrols and guided treks</p> <p>2.10 Support functioning of PAMB</p> <p>2.11 Institute equipment maintenance operations</p> <p>2.12 Strengthen enforcement by building links with law enforcement agents</p> <p>2.13 Train PA staff in participatory conservation management methods</p> <p>2.14 Ensure additional costs of new staff and equipment maintenance are absorbed into DENR budget</p>
Output 3	<p>3.1 Train social outreach teams in participatory learning and action skills</p> <p>3.2 Initiate social outreach operations to a) build trust with key community actors; b) further uncover community needs and perspectives; c) mediate conflict; e) feed into management planning;</p> <p>3.3 Negotiate contractual responsibilities of different parties for conservation, including planning, enforcement and monitoring</p> <p>3.4 Complete registration of communities in buffer zone and map communal and smallholder lands</p> <p>3.5 Accord stewardship rights to local communities over buffer areas under DENR's Community Forestry Programme</p> <p>3.6 Zone buffer areas for conservation-compatible and sustainable uses</p> <p>3.7 Develop self enforcement framework to deal with infringements</p> <p>3.8 Designate community forestry guards responsible for compliance monitoring and reporting</p>	<p>3.9 Provide further training to community outreach teams and forestry guards in conservation methods</p> <p>3.10 Continue social outreach activities to a) strengthen social relations within and between communities and DENR; b) build internal management discipline; c) strengthen capacities for conservation planning and management; and d) enable community participation in operational planning</p> <p>3.11 Convene inter-community forums to share management experiences and coordinate conservation effort throughout the SINP</p> <p>3.12 Ensure fulfillment of contractual responsibilities under stewardship compacts</p> <p>3.13 Provide para legal training to designated community forest guards</p> <p>3.14 Develop cadre of trained local observers to assist in biological and social assessment</p>
Output 4	<p>4.1 Undertake scoping exercise with local stakeholders to develop a communications strategy, identifying vehicles for communication</p> <p>4.2 Design comprehensive awareness raising strategy with a 1] clear identification of target audience; 2] clarification of the awareness needs of different stakeholders 3] outline of the content of different awareness programs ; 4] identification of implementors; and 5] detailed work plan</p> <p>4.3 Develop awareness materials for community outreach in phase 1</p>	<p>4.5 Implement awareness campaign targeting a) community leaders, b) church groups] and c) youth groups</p> <p>4.6 Implement communications strategy targeting local radio and print media and key policy-makers and schools.</p> <p>4.8 Assist in designing interpretation materials to be placed at PA check posts</p> <p>4.9 Monitor implementation and results, and adapt strategy to improve program delivery</p>

Activities	Phase 1 (years 1-4)	Phase 2 (years 5-8)
Output 5	<p>4.4 Field test awareness materials and adapt content based on response</p> <p>4.5 Develop fact sheets on the SINP and project for dissemination within the Philippines;</p> <p>5.1 Undertake resource valuation exercise to quantify conservation benefits (USAID)</p> <p>5.2 Provide assistance to LGU's to access moneys for community eco-development from CBRM project (UNDP)</p> <p>5.3 Sensitize provincial planners to conservation management needs by a) developing resource materials and b) hosting provincial workshops</p> <p>5.4 Strengthen the watchdog and advocacy functions of the Samar Island Biodiversity Foundation (FPE)</p>	<p>5.4 Ensure conservation objectives are fully incorporated into regional development plans, including infrastructural and sectoral plans</p> <p>5.5 Monitor development operations and provide early warning of conflicts and malfeasance</p> <p>5.6 Work with community planners to ensure timely delivery of co-financed activities</p> <p>5.7 Further nurture advocacy functions of the Samar Island Biodiversity Foundation (FPE)</p>
Output 6	<p>Component 1: Sustainable use of NTFPs</p> <p>6.1 Collect data on harvesting trends for non timber forest products</p> <p>6.2 Develop legal and policy framework to re-engineer licensing systems</p> <p>6.3 Pilot new permitting system</p> <p>6.4 Perform assessment of institutional, social and economic barriers to sustainable use of NTFPs</p> <p>6.5 Develop a resource management plan, specifying new harvest quotas</p> <p>Component 2: Ecotourism</p> <p>6.14 Develop code of conduct for ecotourism; clarify zoning requirements; and develop tourism management plan</p> <p>6.15 Sensitize local communities, LGU's, PAMB and PA staff to the determinants of ecotourism demand and service requirements</p> <p>6.16 Initiate tourism promotion activities by designing promotional materials and forging links with tour operators and visitor guides</p> <p>Component 3 Sustainable Agriculture</p> <p>6.22 Undertake farming systems research to identify constraints, resource needs and opportunities for enhancing the ecological sustainability of farming</p> <p>6.23 Develop extension materials</p> <p>6.24 Establish demonstration sub-projects to research sustainable farming methods</p> <p>6.25 Co-ordinate delivery of baseline agricultural support services</p>	<p>Component 1: Sustainable use of NTFPs</p> <p>6.9 Strengthen permitting arrangements</p> <p>6.10 Establish regular resource monitoring program</p> <p>6.11 Adapt management model as necessary, based on data obtained from monitoring program</p> <p>6.12 Provide training to local extension workers in sound management methods</p> <p>6.13 Provide training to resin collectors in quality control methods</p> <p>Component 2: Ecotourism</p> <p>6.17 Train local guides in visitor management and interpretation methods</p> <p>6.18 Provide training to villagers interested in establishing home stay scheme</p> <p>6.19 Build tourism promotion capacities</p> <p>6.20 Provide deal flow services to prospective entrepreneurs</p> <p>6.21 Monitor social and ecological impacts, and adapt management plan</p> <p>Component 3 Sustainable Agriculture</p> <p>6.26 Sensitize extension agents and contact farmers to impart knowhow on sustainable agriculture</p> <p>6.27 Evaluate results of demonstrations, and adapt sub- projects as necessary</p> <p>6.25 Provide deal flow services to facilitate smallholder access to inputs and micro credit</p> <p>6.26 Supply marketing advice and support to small holders upon request</p> <p>6.27 Co-ordinate delivery of baseline agricultural support services</p>
Output 7	<p>7.1 Confirm co-financing for phase 2.</p>	<p>7.2 Design user pays mechanisms</p> <p>7.3 Provide technical support for the design of the SINP IPAF</p> <p>7.4 Establish a data management system to track performance of the pricing system</p> <p>7.5 Develop financial management safeguards for the IPAF/Build capacity of PAMB and PASu to manage IPAF</p> <p>7.6 Ensure GOP's recurrent budgetary commitments are realized</p>

ANNEX C. STAP REVIEW

Review of Samar Island Biodiversity Project (SIBP)

Project Number: PHI/99/G31/33/A/1G

Key issues:

A. Scientific and technical soundness of the project

This is one of the best GEF applications that I have ever had the pleasure of reviewing. It is extremely well written, carefully thought out, and very appropriate to its purpose. In terms of the principles of conservation biology, it is very well thought out with its respect for blocks of forest, keeping the separation of the forest blocks to a minimum, managing the well-protected and the less-protected environment, and integrating those efforts with local communities.

The idea of preserving a representative sample of the biodiversity of the Philippines by expanding the conservation coverage of this biogeographical zone, through the establishment of the Samar Island Natural Park, with a core area of 135,000 hectares is very sensible. Preceding this with biological assessments of under-sampled areas, which is an integral part of the proposal, is certainly essential, and I am struck that the level of knowledge available on which to base particular decisions is quite limited. Therefore, it will be important to increase both the level of knowledge and the capabilities in this area.

B. Global environmental benefits

This project, dealing as it does with a very important biogeographical area in a country which is highly stressed environmentally, has very high global environmental benefits: unique biodiversity in a context where it can be saved in a country where GEF funding is of extreme significance. I can see no drawbacks to this project at all and has abundant environmental benefits.

C. Context of GEF

As I said above, I believe this project is admirably suited for implementation by the GEF. Having been involved with GEF from its very earliest days, this is exactly the sort of project that I have envisioned as being the most significant in dealing with biodiversity. I think that Samar Island is an ideal target for effective environmental action and it is in the context of the Philippines' project that can be dealt with well. It is doubtless one of the best conservation priorities in the Philippines.

The operational strategies and program priorities here are outstanding, involving as they do establishing a baseline and a context in terms of education and in terms of the livelihood of the people around the area in dealing with the biodiversity of Samar, conserving it and using it sustainably. Building an adaptive management framework; following this with the actualization of conservation functions; bringing in community-based conservation; raising awareness; internalizing conservation objectives in sectoral development planning; and developing the sustainable use of wild resources and then working out a strategy to finance the recurrent costs – all of these are essential, well thought out, and integral to the success of this project. The monitoring and evaluation plan is well thought out and, again, as a whole, I consider this project ideal from a GEF point of view.

D. Regional context

Absolutely admirable in its combination of being a very rich source of biodiversity, intensively used by human beings in an important regional context.

E. Replicability of the project

Very high. The strategies read like a textbook example of the very best ways to carry out a conservation project of this sort.

F. Sustainability of the project

Of all GEF projects I have reviewed, I find this one of the best in terms of its plans for sustainability. The way that fund-raising is built into the future plans is ideal.

G. Linkages to other focal areas

Clear within the Philippines and the Southeast Asian area. Obviously, clearly brought out in the proposal.

H. Innovativeness of the project

This is, in my mind, an almost perfect GEF project and, in that sense, is highly innovative. I find it exemplary in every way. I strongly urge that it be funded. The reason for the brevity of this review is purely the excellence of the proposal.

I. Miscellaneous

Highly beneficial environmental effects by involving stakeholders in the project and working out something viable for the future of the region. The capacity-building aspects in terms of building up abilities on Samar Island to deal with their own biodiversity are ideal.

PETER RAVEN

SEPTEMBER 29, 1999

FROM : UNDP MIA

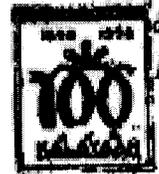
PHONE NO. : 632 8905598

AUG. 18 1999 08:22AM P2



DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

UNDP MANILA	
FILE NO. <i>DPH/92/644</i>	
AUG 16 1999	
ACTION	INFO
<i>JR</i>	<i>PPR</i>



13 August 1999

MR. KEVIN MCGRATH
Officer-in-Charge
United Nations Development Programme
NEDA sa Makati Bldg., Amorsolo St.
Legaspi VIII., Makati City

a DIC

Dear Mr. McGrath,

We are pleased to endorse the project brief of the "Samar Island Biodiversity Project (SIBP)" which is the final output of the PDF B assistance granted to the DENR for the conservation and sustainable use of the biological diversity within the 360,000 hectares Samar Island Forest Reserve. The full project will complement the concerted efforts underway to conserve the Reserve and the biodiversity found therein, as well as those activities directed to socio-economic development within the Reserve.

We hope that the project merits your consideration and endorsement to the GEF Secretariat and will be included in the GEF Work Program to be deliberated in the December 1999 GEF Council Meeting.

Thank you for your support and regards.

Very truly yours,

MARIO S. RORO

Undersecretary and GEF Operational Focal Point

Visayas Avenue, Diliman, Quezon City, 1100
Tel. Nos. : (632) 879-66-26 to 29 / 020 62 62 / 825-68-32 to 00 / 825-70-11 to 43

ANNEX E DESCRIPTION OF SITE BIOLOGY

1. **Introduction**¹: The Philippines is regarded by nearly every major international conservation organization as one of the top global priorities for conservation action (Oliver and Heaney, 1997). For example, BirdLife International, using birds as indicators, has ranked the country as one of the highest priorities for bird conservation. Conservation International lists the Philippines amongst the top ten “Megadiversity Countries globally (i.e. amongst the world’s biologically wealthiest nations). The main reasons for this are i) the enormous biological diversity represented in the flora and fauna of the archipelago, which bridges two major biogeographical regions, i.e. the Sundaic faunal region and the Philippine Biogeographic Province; ii) the extraordinarily high rate of “endemicity” within the biota; iii) the high beta or habitat diversity and iv) the high rate of habitat destruction, and inadequacies in the existing environmental protection framework, including the protected areas network, which inadequately represents the biological endowment. Indicators of the country’s biological wealth include the following:

- (a) 576 species of birds have been recorded in the Philippines, 415 of which breed in the country. 46% of the breeding birds are endemic. 74 species are threatened with extinction, including 59 endemics (Collar, Tabaranza, and Mallari, *In press*). The Philippines is a top priority for bird conservation, with 40 endemic species listed within the top two endangerment categories (Collar et al 1994)
- (b) 172 species of native terrestrial mammals have been recorded in the country of which at least 111 (64%) are endemic. At least 52 native species are threatened with extinction (Heaney et al. 1998).
- (c) 293 species of reptiles and amphibians have been identified, of which 214 (73%) are endemic. This is a high number of species and degree of endemicity per unit area (Oliver & Heaney, 1997).
- (d) At least 13,500 plant species are found, representing 5% of the world’s flora. There are 25 endemic plant genera in the country. The tally includes some 8,000- 12,000 species of flowering plants.

2. Based largely on the available scientific information on the distribution of the country’s mammals, reptiles and amphibians, the Philippines has been divided into 6 major faunal regions, namely, a) Greater Luzon (including Marinduque and Catanduanes), b) Mindoro, c) Greater Palawan (part of Sundaic Faunal Region), d) Greater Negros-Panay (including Masbate, Cebu, Ticao and Guimaras), e) **Greater Mindanao** (including **Samar**, Leyte, Bohol, Dinagat, Siargao and Basilan and f) Greater Sulu.

3. BirdLife International has identified conservation priorities by using birds as indicators of areas with high endemism. These areas contain at least two restricted-range species of birds, which have a breeding range of less than 50,000 km². Based on this information, the Philippines

¹ When a species of bird, mammal, reptile or amphibian is said to be endemic to Samar, it may mean that the species is restricted to Samar or can also be found in one or more other islands within the Mindanao EBA. At the sub-species level, however, endemic sub-species of bird, mammal, reptile or amphibian may be restricted solely to Samar. However, a Philippine endemic, unless otherwise indicated, refers to a species which is restricted to the Philippine Archipelago and found in one or more EBAs or Faunal Regions. For example, the Philippine Eagle *Pithecophaga jefferyi* is a Philippine endemic bird, which is found in Samar, and also in Luzon and Mindanao.

has been divided into several Endemic Bird Areas (EBAs) namely: 1) Luzon EBA (including Marinduque and Catanduanes), 2) Mindoro EBA, 3) Negros and Panay EBA (including Guimaras, and Ticao), 4) Cebu EBA, 5) Palawan EBA, 6) **Mindanao and the Eastern Visayas EBA**(including **Samar**, Leyte, Bohol, and Basilan).

Terrestrial Vertebrate Fauna of Samar Island ²

4. **Birds:** Samar is considered to be one of the most important islands in the Philippines for bird conservation, with a bird species inventory comprising 197 species. This is 34.2% of the total number of bird species in the Philippines and is relatively high given that Samar is only one island out of 7,100+ islands in the entire archipelago. A recently conducted biological survey (funded by the block B) added 8 species to the bird list. A total of 17 restricted-range species (endemics) are found on Samar out of a total of 51 restricted-range species in the Mindanao faunal region. Seven of the 17 restricted-range species are threatened species, while 9 Philippine endemic species are also threatened including the Philippine Eagle (*Pithecophaga jefferyi*), Philippine Hawk-eagle (*Spizaetus philippensis*), and Philippine Cockatoo (*Cacatua haematuropygia*). It should be noted that all of the restricted-range species are forest dependent (Statterfield *et al.* 1998), amplifying the conservation significance of Samar's forest environments.

5. The forests of Samar island harbor one of the largest remaining populations of the Philippine (Monkey-eating) Eagle, the second largest eagle in the world and considered the most endangered bird in the Philippines with a high risk of becoming extinct in the next 5 years (Collar, Tabaranza and Mallari, *In press*). Samar island is the type locality of the Philippine Eagle since the species became known to science and was described in 1896 from a single specimen collected by John Whitehead in Samar.

6. **Mammals:** A total of 39 species of mammals have been recorded, approximately 23% of the total count of land mammals for the country. Out of the 39 species, 18 species (46.1%) are endemic (11 are Philippine endemic species and 7 are endemic to Samar and the Mindanao faunal region). The recent survey recorded 13 new records for the island. Threatened species include: 2 endemic species of fruit bats (*Acerodon jubatus*, the largest bat in the world, and *Eonycteris robusta*), 1 endemic species of insectivorous bat (*Hipposideros pygmaeus*), and endemic large mammals (*Sus philippensis*, Philippine Warty Pig and *Cervus mariannus*, Philippine Brown Deer). Among the murid rodents, 3 endemic species were recorded. The large Mindanao forest rat, *Bullimus bagobus*, is endemic to the Mindanao Faunal Region while the Dinagat Hairy-tailed rat, *Batomys russatus*, is a newly described species (Musser, Heaney and Tabaranza, 1998) known previously only from Dingat Island. Two endemic species of squirrels are also listed. These species, *Exilisciurus concinnus* and *Sundasciurus philippensis*, are restricted to Samar and the Mindanao Faunal Region. Most endemic mammals of Samar are forest dependent.

7. **Reptiles and Amphibians:** The reptiles and amphibians of Samar are the least known of

² The biological inventory for Samar island is incomplete, although several surveys, particularly for fauna, have been conducted. Many of these are dated, having occurred in the nineteenth and early 20th centuries, although some sampling occurred in the 1960s. Most collections were of birds and mammals, leaving reptiles, amphibians, invertebrates and freshwater fish mainly unstudied. Collections have tended to focus on lowland forests.

the terrestrial vertebrate fauna. The recent survey recorded 25 species of reptiles and 12 of amphibians, including 15 endemic species (10 reptiles and 5 amphibians). The reptiles include the following: 1 freshwater turtle, 15 lizards and 9 species of snakes, while the amphibian fauna is restricted to frogs and toads. Eighteen species of reptiles and amphibians were added to the inventory in 1994 (Gaulke 1994), and 9 more new records were added following the recent survey. The inventory remains incomplete (only a small area has been sampled), and further survey effort is needed (and will likely uncover new records). According to Alcala (1986), more than half of the herpetofauna in the Philippines are forest dependent.

Flora of Samar Island

8. Samar Island is recognized as one of the 18 Centers of Plant Diversity and endemism in the country³. Some 885 species of flowering plants [499 genera and 65 families] have been recorded, of which 406 species are endemic (Merrill's enumeration, 1923-1926), including 12 species of trees listed in IUCN's World List of Threatened Trees. However, this is likely a fraction of the total species count, which some scientists posit could be more than 3,000⁴. There has been a marked paucity of survey effort on the island (i.e. there is a very low collection density index), partly because of past civil disorder, but also because surveys have been incapacitated by a dearth of trained national botanists able to identify flora. The hill range of Central Samar Island and the limestone forest communities are still little explored botanically and further fieldwork is needed to investigate these areas. The forest in Samar harbors numerous economically important species, including 16 species of dipterocarps and 15 commercially important species of rattan. Several important timber trees, such as *Hopea samarensis*, are endangered.

9. The flora of Samar is closely linked phytogeographically to that of Leyte, although the island has also been linked by land bridges to southern Luzon and Northeastern Mindanao in the past and shares floristic affinities with these areas. The island is particularly rich in dipterocarp species, some of which are represented both in southern Luzon provinces and north-eastern Mindanao. There are about 240 species of flowering plants endemic to both Samar and Luzon, 173 endemic species common to both Samar and Leyte and 172 endemic species common to both Samar and Mindanao. The presence of 6 endemic genera of vascular plants in Samar, namely *Psomiocharpa*, *Thaumasianthes*, *Antherostele*, *Gloeocarpus*, *Greemapus* and *Villarica* indicates that the island has been isolated long enough to enable speciation.

10. Twelve (12) endemic species of trees found in Samar Island are listed in the World List of Threatened Trees (Oldfield, et al., 1998). Six (6) species, i.e. *Hopea quisumbingiana*, *H. samarensis*, *Gloeocarpus patentivalis*, *Guioa discolor*, *Kibatalia puberula*, and *Mangifera monandra* are listed as critically endangered or endangered. Of these, *Kibatalia puberula*, *H. quisumbingiana*, and *H. samarensis* are restricted to Samar Island. *Horsfieldia ardisiifolia*, *Horsfieldia samarensis*, *Kibatalia merrilliana*, *Knema stellata* ssp. *stellata*, *Myristica laevis* ssp. *laevis*, and *Myristica pilosigemma* are considered vulnerable. The 1997 IUCN Red List of Threatened Plants (Walter & Gillett, 1998) includes ten (10) species of vascular plants from

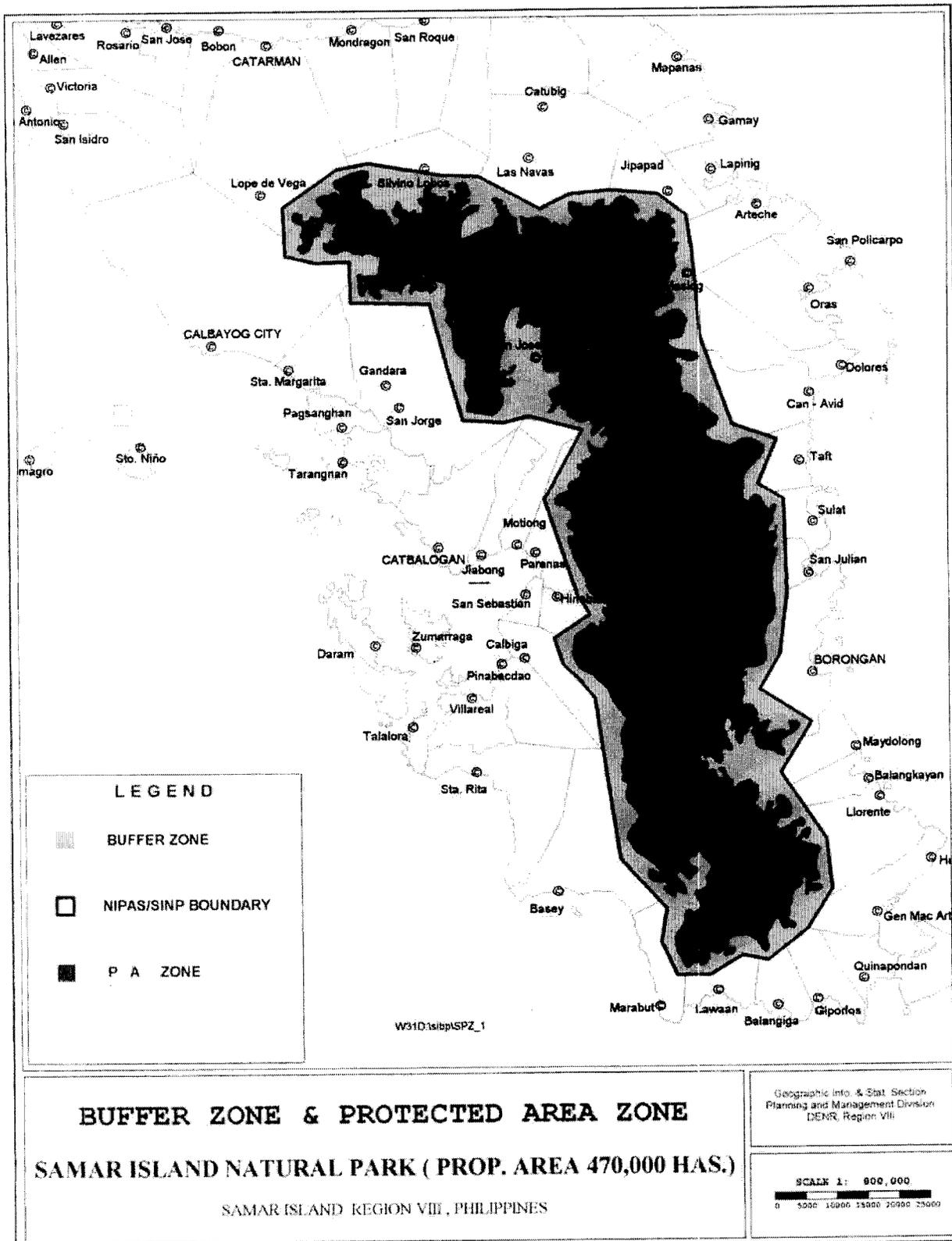
³ Species diversity is likely high for a number of reasons, including the diversity of substrates and habitat types ranging from lowland evergreen rainforest, limestone forest, riverine forest, ultramafic forest, and patches of mossy forest at high elevations.

⁴ Dr Madulid, Philippine National Museum (pers com).

Samar Island. The rare plant *Rafflesia manillana*, recorded in Samar and only four other localities in the country is categorized as endangered. Species categorized as vulnerable include *Ficus pseudopalma*, *Ficus ulmifolia*, *Diplodiscus paniculatus* (monotypic genus), *Xanthostemon verdugonianus*, *Macaranga caudatifolia*, *Celtis luzonica*, and *Mangifera monandra*. Except for *Ficus ulmifolia*, all of these species are widespread endemics. Two fern species are also included in the IUCN Red List. These are *Platynerium grande* (endangered) found solely in lowland dipterocarp forests and *Cyathea negrosiana* (rare) which is restricted to the Visayan Islands.

11. Several indigenous species from Samar island are listed in CITES Appendix II (collectively grouped as Orchidaceae, Nepenthaceae, Cycadaceae, and ferns and fern allies). Of particular conservation concern are orchids belonging to the genera *Phalaenopsis*, *Renanthera*, and *Dendrobium*, pitcher plants, *Nepenthes alata* and *N. ventricosa*, and ornamental ferns, i.e. *Pteris*, *Tectaria*, *Asplenium*, *Diplazium*, *Blechnum*, *Davallia*, *Nephrolepis*, *Pteridium*, *Dicranopteris*, *Ophioglossum*, *Platynerium*, *Lycopodium*, *Selaginella*, and *Adiantum*. Madulid (1991) considers *Syzygium aqueum*, a fruit tree species known locally as *tambis*, as vulnerable. This species has a very restricted distribution in the country, i.e. Samar, Dinagat, Mindanao and Basilan Islands. Other fruit trees of conservation significance are *Syzygium claviflorus* (*bolagsong*), *S. curranii* (*igot*), *S. mananquil* (*kagoko*), and *Anacolosa frutescens* (*matobato*). The endemic genus *Thaumasianthes* is found only in Samar Island. *Sararanga philippinensis* is an endemic pandan. Most of these species are found in the lowland evergreen rainforests of Samar island.

MAP OF THE PROJECT AREA



ANNEX F: THREATS ANALYSIS

Biological Impact

Root Causes and Management Issues

Alternative Strategy (Design Elements)

Current Threats to Forest Biodiversity

<p>⇒ direct and indirect anthropogenic pressures will gradually result in the loss of one of the Philippines' largest blocks of lowland rainforest, resulting in the extirpation of a large number of threatened species, including many endemics</p>	<p>a) although a Forest Reserve nominally exists, basic conservation functions such as boundary demarcation and advocacy are absent and policing and enforcement functions need strengthening; there is a lack of the most basic infrastructure, equipment and staffing for conservation management; 3 small PA's (NIPAS sites) have been established but these are too small to maintain vital ecological processes and need to be expanded to ensure stable conservation;</p> <p>b) forest-edge communities have been alienated from conservation management programs; the upshot is that they have little incentive to protect biological diversity; there is a basic lack of understanding within local communities of the connection between ecological systems and the village economy, and the potential adverse socio-economic feedbacks from forest degradation;</p> <p>c) a framework for monitoring the biological impacts of land use is lacking making it difficult to operationalise adaptive management models;</p>	<p>a) establishment of a new large Natural Park, with a core area encompassing important habitats, sustainable use areas and buffers zoned for multiple, conservation-enabling resource uses [Project Purpose];</p> <p>b) extension of the traditional protected area management model to actively involve forest-edge communities in decision-making and activity implementation [Project Purpose]; Mass and sustained awareness drive to impart conservation values to key Samareño constituencies [Output 4];</p> <p>c) on-going monitoring of ecological processes and conservation outcomes as part of an adaptive management approach [Output 1];</p>
---	--	---

Proximate Threat: shifting cultivation (kaingin) of upland rice, cassava, yams, and pineapples in forest areas

<p>⇒ retreat of ecological frontier, particularly in accessible, species rich, low land forest areas</p> <p>⇒ human presence in hinterland drives other threats, such as hunting</p>	<p>a) inadequate institutional and human capacity within DENR to regulate swidden farming; limited enforcement means that there is little disincentive for farmers to open up new forest areas for cultivation;</p> <p>b) smallholders lack property rights for lands at the forest-edge giving them little incentive to incur the additional financial/sweat equity costs of farming system intensification and</p>	<p>a) strengthening of participatory planning/ management skills, including monitoring, negotiation, policing and enforcement skills [Outputs 1,2]; targeted agricultural support interventions to bolster rural livelihoods [Output 6];</p> <p>b) extension of appropriate tenure instruments -- creating carefully negotiated stewardship compacts; claims in core</p>
--	--	--

Biological Impact

Root Causes and Management Issues

Alternative Strategy (Design Elements)

<p>and small scale logging; ⇒ loss of biological connectivity between pockets of undisturbed forest threatens to destroy the corridor between the two largest blocks of primary forest</p>	<p>diversification; c) traditional farming systems are characterised by an absence of soil conservation methods such as ditching, mulching, and soil stabilisation through tree planting; farming productivity is low, and soil impoverishment results in short cropping cycles; farming services have inadequate outreach to communities providing them with limited recourse to technical assistance and other inputs that would enable them to intensify and diversify production;</p>	<p>areas will not be recognised under the terms of the compacts [Output 3]; c) substitution of baseline agricultural support programmes to ensure that 1) farming support services reach forest-edge communities; 2) skills building focuses on improving soil conservation practices through locally appropriate methods; and 3) providing inputs to catalyse sustainable farming system intensification; [Outputs 5, 6];</p>
--	---	--

Proximate Threat: small scale logging (carabao), using chainsaws, for consumptive and productive usage

<p>⇒ damage to habitats, through clearance, and knock-on impacts (land slips etc.) ⇒ felling in vicinity of swidden gardens increases canopy break and ecological disturbance; ⇒ loss of nesting/feeding/roosting sites for niche species, such as hornbills</p>	<p>a) logging is illegal in the Samar Forest Reserve under Executive Decree, but there is an absence of intelligence gathering and enforcement capabilities to stem cutting and trade; patron-client relations cause some regulators to turn a blind eye to malfeasance by outsiders while prosecuting community users; this causes resentment at the local level, and spurs continued illegal use; b) management edicts fail to take local timber needs into account (i.e. for shelter ; there is no management strategy or mechanisms to provide for the consumptive needs of forest-edge communities); c) extraction of commercially important species for productive purposes by outsiders may occur up to 20 kms from settlements, local communities are aware of the trade, but have little incentive to control access owing to a lack of legally recognised and stable usufruct rights to wild resources, including timber; there are no mechanisms for involving the community (forest guards) in monitoring and reporting on illegal activity; d) alternative livelihood sources are poorly developed and timber sale provides a supplementary source of livelihood for some households;</p>	<p>a) involvement of NGOs and PO's in 'watchdog' operations to check illegal activity spawned by patron-client associations; [Output 5]; enhancement of intelligence gathering and enforcement capabilities of rangers [Output 2]; b) creation of community woodlots to meet consumptive use needs of forest-edge communities, [Output 6 & Output 3]; c) creation of cadre of community forest guards to report malfeasance and enforce regulations; make tenure/ usufruct instruments contingent upon control of illegal activity by communities [Output 3]; raise awareness of regulations and conservation values [Output 4]; d) expand menu of livelihood activities by supporting development of sustainable agriculture, promoting managed eco-tourism, and improving benefit capture from NTFP harvests; [Outputs 5,6];</p>
--	--	--

Proximate Threat: harvest of rattan

<p>⇒ destructive rattan harvesting practices involving tree felling causes ecological unnecessary damage (i.e. forest canopy breaks)</p> <p>⇒ excursions into forest to collect rattan cause other impacts, including opportunistic hunting of wildlife and collection of flora</p>	<p>a) although collection and trade is regulated, management is mediated by patron-client relationships; permits are rarely issued to forest-edge communities who see little tangible benefit from legal collection/ trade; local communities harvest rattan for consumptive use and productive purposes (presently illegal without permit); the lack of formal access and use rights serves as a disincentive for communities to control resource access and exploitation by outsiders nor manage harvests in their own economic interests;</p> <p>b) lack of information on biological requirements for rattan management; harvesting occurs without taking biological needs into account; conservation set asides (as a repository of genetic material for target species) are inadequate;</p> <p>c) although tree felling is prohibited by law, policing and enforcement capacity is weak making it difficult to contain the practice;</p> <p>d) weak institutional capacity within DENR to manage harvests (e.g. determine maximum sustainable yields, regulate collection and effect monitoring);</p> <p>e) opportunities for capturing benefits/ value added as a management incentive are limited at the local level;</p>	<p>a) ensure that benefits from sustainable use accrue to forest-edge communities as management incentive [Output 6]; involvement of NGOs and PO's as watchdogs to check illegal activity [Output 5]; involvement of rangers and community forestry guards in monitoring access by collectors [Outputs 2, 3]; raise awareness at local level about rattan management needs [Output 4, 6];</p> <p>b) data collection on rattan harvests to determine management needs [Output 6]; dis allow harvests in core protected zones within the Natural Park to protect genetic stocks [Outputs 1,2]; institute on going monitoring activities to check resource use trends [Output 6];</p> <p>c) training of collectors in ecologically benign harvest practices [Output 6]; development of community sanctions as part of benefit sharing model [Output 3, 6];</p> <p>d) strengthen in-house institutional capacities within DENR to manage sustainable uses [Outputs 1,2, 6];</p> <p>e) create benefit sharing arrangement that 1) captures returns from sale for conservation activities; 2) increase share of benefit captured by collectors 3) maintains equity in permitting arrangements [Output 6];</p>
---	--	---

Proximate Threat: hunting (Warty Pigs, Philippine Deer, Flying Foxes)

<p>⇒ loss of target species, such as the Philippine Deer;</p> <p>⇒ certain hunting practices (i.e. setting of</p>	<p>a) hunting mainly occurs for consumptive use, although bush meat (Warty Pigs etc.) is sold in local markets; hunts are often conducted opportunistically, when entering the forest to collect rattan or other minor forest products; the lack of basic conservation functions to foreclose hunting and enforce</p>	<p>a) strengthening of basic conservation functions [Output 1, 2]; involvement of community forestry guards in monitoring and regulating activity [Output 3]; impose stiff penalties for hunting of threatened/ banned species [Output 1, 2,3]; build linkages with police/ magistrates to increase</p>
---	---	---

Biological Impact

Root Causes and Management Issues

Alternative Strategy (Design Elements)

<p>⇒ some traps) are unselective, and result in mortality of non target species</p>	<p>regulations provides little stimulus for behaviour change; b) there is no co-ordinated community-based strategy or mechanism to manage hunts; open access is leading to a 'tragedy of the commons';</p>	<p>success rate of prosecutions [Output 2]; b) encourage community level controls on access, with co-ordination mechanisms at the inter-community level [Output 3];</p>
---	--	---

Proximate Threat: orchid collection

<p>⇒ danger of extirpation of rare species, including regional endemics</p>	<p>a) open trade conducted by orchid growers and collectors in Samareño towns b) lack of knowledge of population status of harvested species and of the biological parameters of management ; c) there is an absence of set asides where collection is banned to safeguard genetic material; d) management rules prohibit the transfer of orchids within the Philippines and overseas; although advisories are posted at airports and some sea ports and bus terminals, spot checks are rarely conducted;</p>	<p>a) establish data base on and system to track trade; establish linkages between buyers and DENR to enable management fundamentals to be discussed and agreed upon [Output 6]; b) data collection on orchid harvests to determine management needs [Output 6]; c) disallow harvests in core protected zones within the Natural Park [Outputs 1,2]; institute on-going monitoring activities to check resource use trends [Output 6]; d) strengthen enforcement capacities by encouraging spot checks, sensitise security guards and other key players to the law [Output 5,6];</p>
---	---	--

Potential Future Threats to Forest Biodiversity

Proximate Threat: mining (prospecting for and extraction of coal, bauxite, and limestone)

<p>⇒ all forms of mining have potential for direct impacts, including habitat degradation and fragmentation and loss of biological connectivity. ⇒ mining provides</p>	<p>a) mining may be banned by law in Natural Parks if mandated in management plans; failure to designate areas of high conservation significance within the forest reserve as a Natural Park would result in mining claims taking precedence over conservation; awareness regarding government policies on mining in protected areas needs to be imparted to decision-makers at all levels; decision-making needs to be better co-</p>	<p>a) designation of site as a Natural Park, with mining banned in core areas and ecologically sensitive buffers [Output 1]; support advocacy activities aimed at sensitising decision-makers to the provisions of law; promote better integration of decision-making within regional DENR units [Output 5]; b) strengthening EIA requirements for activities contiguous to</p>
--	--	---

Biological Impact

Root Causes and Management Issues

Alternative Strategy (Design Elements)

stimulus for population aggregation in biologically sensitive areas,
 ⇒ limestone mining could damage fragile cave ecosystems

ordinated between DENR's protected area management and mining units to ensure complementarity in strategies;
 b) at present, there is a lack of sufficient integration of conservation objectives into spatial planning and EIAs for mining; there is a need to plan operations outside of Protected Areas to manage negative externalities within the Areas, such as those driven by population aggregation at mine sites; capacity to undertake such planning and management needs to be bolstered within DENR (responsible for granting permits for large scale mines) and Provincial authorities (able to grant permits for small scale mines);

the Natural Park to ensure externalities on biodiversity are fully mitigated; better integration of conservation planning objectives into regional development planning; institution of legal safeguards with Congressional sanction **[Output 5 & 1]**;

Proximate Threat: infrastructural development (highways and link roads, power and communications infrastructure)

⇒ road development through or adjacent forest areas would catalyse habitat destruction and degradation by enhancing accessibility for settlement and farming;
 ⇒ loss of biological connectivity, retarding movement of canopy dwelling species;
 ⇒ increased disturbance in biologically sensitive areas (sound and air pollution)

a) infrastructural development, if carefully planned, would benefit biodiversity by channelling anthropogenic pressures to non sensitive areas; however, there is a lack of integration of conservation objectives into regional sectoral planning, leading to a failure to uncover ecological costs and benefits and accelerating conflicts in resource use;
 b) a spatial plan, identifying ecologically sensitive areas important for biodiversity protection purposes, is lacking; GIS capabilities are inadequate in East and North Samar provinces, and need to be strengthened within regional DENR/PAWB units;
 c) economic and financial instruments that would internalise the additional costs of managing habitats in infrastructural projects in areas where infrastructure has been/ is being developed are absent;

a) integration of conservation objectives into regional development planning through 1) sensitisation of decision-makers to conservation needs; 2) introduction of planning tools (i.e. multi-criteria analysis) and; 3) technical support to achieve better integration **[Output 5]**;
 b) define ecologically sensitive areas to be protected from infrastructural development; strengthen spatial mapping capabilities **[Output 5]**;
 c) explore feasibility and promote application of user pays arrangements as means of internalising external costs in development activities, and creating source of funding for conservation management **[Output 5 and 7]**;

ANNEX G: SUMMARY OF PUBLIC PARTICIPATION ARRANGEMENTS

The SINP is bounded by three provinces and 23 municipalities. Some 200 communities (6500 households) live within the SINP's buffer area, and are dependent, to varying degrees, on forest resources for subsistence. The Government of the Philippines aims at striking a balance between development and conservation in this area, forestalling forest degradation and meeting local welfare needs by executing a community based resource management strategy. The goal is to establish a social buffer against anthropogenic threats to biological diversity in the Natural Park by formalizing the role of forest-edge communities as custodians of wild resources. The goal would be achieved by ensuring the effective participation of forest-edge communities in planning, implementing and monitoring conservation interventions within the SINP and its buffer. The project has three subsidiary objectives:

- To create new incentives for communities to conserve forest resources by building awareness of conservation values and enhancing the values of conservation relative to other land uses;
- To promote conservation enabling livelihoods and ensure the sustainability of wild resource use; and
- To develop institutional capacities at the community level to plan, implement and monitor conservation measures.

Strategies⁵

The buffer area and sustainable use zone of the SINP will be divided into ten buffer management units (BMU), delineated by major watersheds. A Village Conservation Committee will be established in each BMU, comprising representatives elected by the different barangays, accountable to PAMB, and charged with overseeing agreed conservation functions at the community level. The respective responsibilities of the VCCs and PASU will be determined as part of the process of management planning, following extensive consultation. However, the VCC's would collaborate with PASu in executing the following functions: surveillance, reporting malfeasance, enforcement, and monitoring conservation impact. The following activities and strategies are planned to operationalise the VCCs:

- a) A process of social organization would be orchestrated in the ten BMU's using NGOs as intermediaries. Such organization will be effected through an organic and flexible process that is responsive to communities' perceived needs and interests. The process will be advanced in several cycles, aimed at 1] further clarifying conservation objectives and management strategies; 2] explaining the benefits accruing at the community level from the proposed management strategies; 3] clarifying the roles and responsibilities of communities as custodians of forest resources; 4] strengthening social relations between PASu and other DENR offices and local communities; 5] building a consensus on procedures for electing members to the VCC and rotating membership, accountability, reporting requirements and Terms of Reference for VCCs.
- b) VCC members would be provided training in participatory planning methods, administrative functions, conflict mediation, negotiation, public relations and other necessary management

⁵ Proposed strategies for engendering public participation have been developed following consultations with target communities, government authorities and with local NGO's working in the project area.

skills.

- c) Each VCC would be represented on the PAMB, and would advance community interests as appropriate. The VCC's would collectively elect a representative to sit on the project Steering Committee.
- d) Regular community forums would be arranged by the VCC's to explain management rules to community members and communicate PAMB/ VCC decisions, and address local grievances.
- e) The VCC's, abetted by NGO intermediary groups and PASu, will take primary responsibility for co-ordinating management planning in the BMUs; using participatory resource appraisal tools, community resources will be mapped; zoning needs would be determined following an assessment of biological, social, economic and other priorities; Park regulations and enforcement mechanisms would be developed, and execution arrangements would be clarified and formalised. After finalization of these standards, an information campaign will be launched to sensitize community members to regulations, enforcement processes and other aspects of the management regime.
- f) Park regulations will make provision for the application of internal sanctions, imposed by the communities themselves for minor breaches of regulations. An independent team (composed of representatives of PASu and NGOs) will conduct periodic assessments of enforcement quality.
- g) Members of participating communities will be deputized by the VCCs to serve as forest guards and monitors. These officers would be responsible for monitoring resource use, maintaining records of wild resource harvests, and reporting malfeasance to the VCCs. Guards and monitors would receive intensive training in conservation functions to enable them to execute tasks effectively.
- h) Community members in the BMUs will be provided orientation and training in, and exposure through field demonstrations to conservation enabling management methods to enable them to take part in the planning and management of the Program at the village level. The focus of such training would be adapted to suit the needs of communities, following client needs assessments. Training packages would be adapted to improve their efficacy, following routine post-workshop evaluations.
- i) Inter-VCC forums will be convened to provide a venue for communities to share experiences.
- j) Resource use conflicts may be settled in the VCCs with the assistance of the PASu.
- k) Another focus of the work in the BMU would be the provision of tenurial security to smallholders' farming lands in the buffer areas and the extension of usufruct rights for wild resources in designated sustainable use areas within the SINP. The project would provide legal and other ancillary support under Output 3 to ensure effective implementation of this strategy.
- l) The project would provide support for a sustained awareness building campaign, aimed at imparting conservation values to local communities and sensitizing them to conservation friendly land use strategies. The campaign would be orchestrated at several levels, including
1] under output 3, through social organization activities; 2] as part of the sustainable

livelihoods component; and 3] through activities sponsored under Output 4. The awareness program would be molded to account for the perspectives of different stakeholder groups within the community, including women, and differentiated between the BMU's to reflect different agro-ecological conditions and land use practices. The program would be amended as necessary, following social assessment, to ensure that problem areas are addressed (i.e. message content and delivery tools).

- m) The monitoring program will systematically assess social processes that have a bearing on conservation outcomes. The program will be implemented with the full participation of local communities, whose role would extend beyond the collection of data, to data interpretation. The VCC's will appoint monitors to serve as point people for monitoring & evaluation activities.
- n) Biennial Social Impact Assessments (SIA) would be performed by qualified rural sociologists to track social responses to and perspectives of conservation interventions, assess changes in stakeholder composition, and identify conflicts between stakeholders that require resolution.
- o) A system of reporting would be installed to ensure a two way flow of information between the PASu and the VCC's. NGOs involved in community outreach will submit monthly reports to Project Management. The Project Management Office will prepare quarterly and annual reports for UNDP. Year-end reports will be required with an assessment of the accomplishments. Progress in achieving public participation objectives will be reviewed during Independent Evaluations.

Activity Phasing

To ensure stable conservation outcomes, the proposed community based conservation strategy will require an extensive investment in local-level capacity building, building upon the existing knowledge and capabilities of communities. Community workers responsible for mediating social organization activities will be provided with extensive training and will be regularly briefed and debriefed in order to ensure quality control in the application of field programs. Briefing forums would provide a constant two way flow of information between project managers, PASu and field staff to guide decision making. The broad sequence of activities required to organize local communities so that they are able to function within the conservation arena independently of external support (provided by the project) is listed below.

- a. preparatory phase: [Phase 1]
 - selection of NGOs that will take part in community organizing
 - selection of community outreach staff
 - project briefing/training of community outreach workers
 - work planning
- b. community entry: [Phase 1]
 - establishment of protocols
 - further clarification of project strategies and activities with communities
 - participatory resource mapping at the community level

- clarification of the benefits and costs accruing from proposed management strategies
 - establishment of the community data collection and management system
 - establishment of VCCs
- c. community planning: [Phase 1]
- validation of resource profiles
 - community planning vis-à-vis project objectives
 - determination of zoning needs
 - inventory traditional knowledge
 - determination of PA regulations and enforcement strategies
 - clarification and formalisation of enforcement arrangements
 - training needs assessments
 - strengthening social relations between VCC's and PASu
- d. project implementation: [Phase 1 and 2]
- execution of training programs
 - allotment of tenurial and usufruct rights to eligible beneficiaries
 - implementation of community-based conservation projects
 - implementation of conservation-based alternative livelihood projects
 - exposure trips to other PAs/establishment of demonstration areas
 - awareness building
 - application of new benefit sharing arrangements for wild resource uses
 - Inter-VCC sharing of experiences
- e. consolidation phase [Phase 2]
- strengthening the VCCs organizationally
- f. pre-exit phase [Phase 2]
- planning for exit phase
- g. exit phase [Phase 2]
- final participatory evaluation

ANNEX H: PROJECT CATEGORISATION SHEET

Focal Area Categories					
Biodiversity		Climate Change		International Waters	Ozone Depletion
Conservation ✓		Energy conservation (prod./distribution)		Trans-boundary Analysis	Monitoring:
in situ ✓	Ex situ	ESCO's	Efficient Designs	Strat. Action Plan Development	ODS phase out (Production)
Sustainable Use ✓		Solar:		Freshwater Basin	ODS Phase Out (Consumption)
Benefit-sharing ✓		Biomass:		Marine Ecosystem	Other:
Agrobiodiversity		Wind:		Wetland Habitat	
Trust fund		Hydro:		Ship-based	
Ecotourism ✓		Geothermal:		Toxic Contaminants	
Biosafety		Fuel cells:		GPA Demonstration	
Policy & Legislation ✓		Methane recovery:		Fisheries Protection	
Buffer Zone Dev. ✓		Other:		Global Support:	
b. Categories of General Interest					
Investment ✓		Technical Assistance ✓		Targeted Research	Land Degrad. ✓
Technology Transf.		Small Islands ✓		Info/Awareness ✓	Private Sector
c. Community & NGO Participation					
involvement type	project design	Implementation	info/awareness	consultation	
Names of Communities and NGOs involved	Tandaya, GDFI, SAGEP, Action for Community Empowerment, Center for Empowerment and Resource Development, Eastern Samar Development Foundation, Foundation for the Philippine Environment	Tandaya, Eastern Samar Development Foundation, GDFI, Samar Island Biodiversity Foundation SAGEP.	Center for Empowerment and Resource Development Action for Community Empowerment, Caritas	Tandaya, GDFI, SAGEP, Action for Community Empowerment, Center for Empowerment and Resource Development, Eastern Samar Development Foundation, Foundation for the Philippine Environment	

ANNEX I: LIST OF REFERENCES

- Afuang, L.E. and J.C.T. Gonzalez. 1994. *A Manual on Wildlife 101*. Wildlife Biology Laboratory. IBS-CAS, UP at Los Baños.
- Alcala, A.C. 1986. *Guide to Philippine Flora and Fauna. Vol. X Amphibians and Reptiles*. Natural Resources and Management Center Ministry of Natural Resources and University of the Philippines. 195 pp.
- Alviola, P.L. III. 1988. **Diversity of the Fauna in the Philippine Forest Ecosystems**. A paper presented at the Technical Workshop on Philippine Biological Diversity, 01-02 March 1988. PCED Hostel, University of the Philippines, Diliman, Quezon City, Philippines.
- Anon. 1948. *Coelogyne asperata* plentiful in Samar. **Philipp. Orchid Review** 1(1):21.
- Brown, W.C. and A.C. Alcala. 1978. *Philippine Lizards of the Family Gekkonidae*. *Silliman University Nat. Sci. Monog. Ser. 1*, Dumaguete City, Philippines.
- Brown, W.C. and A.C. Alcala. 1980. *Philippine Lizards of the Family Scincidae*. *Silliman University Nat. Sci. Monog. Ser. 2*, Dumaguete City, Philippines.
- Bureau of Mines and Geo-Sciences. 1982. **Geology and Soil Resources of the Philippines**. BMGS, Quezon City.
- Caldecott, J. O., Piczon, E. C., Aliposa, J. S. and Cruz, M. de la. 1997. **Towards a biodiversity management strategy for Samar Island**. *Unpublished*.
- Colina, A. and J. Jumalom. 1973. Report on the flora of Basey Region, Southwestern Samar, Philippines. **Leyte-Samar Studies** 7(1):38-68.
- Colina, A. and J. Jumalom. 1974. The geographical distribution of the flora of Cantipla, Cebu and Basey, Samar. **Philipp. Scientist** 11:33-41.
- Collar, N. J., Crosby, M. J. and A. J. Stattersfield. 1994. Birds to Watch 2: **The World List of Threatened Birds**. *BirdLife International*. Cambridge, U. K.
- Collar, N.J., Tabaranza, B.R., Mallari, N.A.D. and J.M. Villasper. In press. *Threatened Birds of the Philippines: the Haribon Foundation/Birdlife International Red Data Book*. Bookmark, Makati, Philippines.
- Danielsen, F., Balete, D. S., Christensen, T. D., Heegaard, M., Jakobsen, O. F., Jensen, A., Lund, T. and M. K. Poulsen. With contributions from Altamirano, R., Cruz, V., Diesmos, A., Manamtam, A. S., Mallari, N., Mouritsen, H., Reyes, G. and K. S. Schoyen. 1993. *Conservation of Biological Diversity in the Sierra Madre Mountains of Isabela and southern Cagayan Province, the Philippines*. DENR-BirdLife International, Manila and DOF, Copenhagen.
- Dee, W.G. 1993. **Conserving and Managing Protected Areas in the Philippines: A Planning Challenge**, Pp. 225-234. In: Proceedings of the ASEAN Seminar on Management and Conservation of Biodiversity, Nov. 29-Dec. 1, 1993, Kuala Lumpur, Malaysia.
- Dee, W.G. 1994. **Institutionalizing the Protected Area Management Effort in the Philippines**. *Ecology International Bulletin*.
- Department of Environment and Natural Resources and UNEP. 1997. **Philippine Biodiversity. An Assessment and Action Plan**. Quezon City, Philippines.
- Department of Environment and Natural Resources. 1990. **Master Plan for Forestry Development**. Quezon City, Philippines.

- Department of Environment and Natural Resources. 1992. **A Report on Philippine Environment and Development to the United Nations Conference on the Environment and Development**, Quezon City, Philippines.
- Department of Environment and Natural Resources. 1997. **1997 Annual Report**. Quezon City, Philippines.
- Dickinson, E. C., Kennedy, R. S. and K. C. Parkes. 1991. *The Birds of the Philippines. An Annotated Checklist*. British Ornithologists' Union, U. K.
- Diesmos, A.C.D. Species account of selected herpetofaunal species. (unpublished paper)
- DuPont, J. E. 1971. *Philippine Birds*. Delaware Museum of Natural History, Greenville Delaware. Monograph Series No. 2.
- Environmental Center of the Philippines Foundation. 1998. **Environment and Natural Resources Atlas of the Philippines**. Quezon City, Philippines.
- FMB. 1997. **1997. Philippine Forestry Statistics**. Quezon City, Philippines.
- Gaulke, M. 1994. *Notes on the herpetofauna of Panaon and Samar, East Visayans, Philippines*. *Hamadryad* Vol. 19.
- Gee, G.V. A. and R.S. Jumadiao. 1995. *A key to the lizards of the Philippines*. Undergrad. SP. UP Los Banos.
- Gee, G.V. A. Gee and M.V. Lepiten. *A Preliminary Field Survey Report on the Herpetofauna and Avifauna Of Mt. Nahulupan, Barangay San Rafael, Taft, Eastern Samar*. A Ford Funded Haribon Project. (Unpublished report).
- Guide to Flora and Fauna (Vols. II-IV). 1986. NRM, MNR, and UP, Quezon City.
- Gunther, A.C.L.G. 1879. *List of the mammals reptiles and batrachians sent by Mr. Everett from the Philippine Islands*. Proceedings of the Zoological Society of London, 1879:74-79.
- Gutierrez, H.G. 1975. *Hopea samarensis*, a new Philippine dipterocarp. **Kalikasan, Philipp. J. Biol.** 5:92-98.
- Gutierrez, H.G. 1983. A revision of the Philippine Dipterocarpaceae (Ph.D. Dissertation). University of Santo Tomas, Manila.
- Heaney, L.R. and W. Oliver. 1997. *Biodiversity and Conservation in the Philippines: An introduction to a global priority*. In WCSP. 1997. Philippine Red Data Book. Bookmark, Manila.
- Heaney, L.R. 1986. *Biogeography of mammals in SE Asia: estimates of rates of colonization, extinction and speciation*. Biol. J. Linn. Soc. 28:127-165.
- Heaney, L.R. P.D. Heidemann, E.A. Rickart, R.B. Uzzurum, J.S.H. Klompen. 1989. *Elevational zonation of mammals in the central Philippines*. J. Trop. Ecol. 5:259-280.
- Heaney, L.R., D.S. Balete, M.L. Dolar, A.C. Alcala, A.T.L. Dans, P.C. Gonzales, N.R. Ingle, M.V. Lepiten, W.L.R. Oliver, P.S. Ong, E.A. Rickart, B.R. Tabaranza Jr., R.C.B. Uzzurum. 1998. *A synopsis of mammalian fauna of the Philippine Island*. *Feldiana: Zoology, N.S.* (88):1-61.
- Inger, R.F. 1954. *Systematics and zoogeography of Philippine Amphibia*. *Feldiana:Zool.*, 33, 181-531.
- Ingle, N.R. and L.R. Heaney. 1992. *A key to the bats of the Philippine island*. *Feldiana: Zoology, N.S.* (69):44pp.

- Kho, J.L. 1998. **Report on the Legal Aspects of the Samar Island Biodiversity Project.** Protected Areas and Wildlife Bureau. Quezon City, Philippines.
- King, H. and Y. Hsia. 1997. Establishment, progress, and performance of the Taiwan Ecological Research Network Program. In: **Long Term Ecological Research in East Asia-Pacific Region.** H. King, S.P. Hamburg, and Y. Hsia (eds.). Taiwan Forestry Research Institute, Taipei.
- Kintanar, R.L. 1984. **Climate of the Philippines.** PAGASA, Quezon City.
- Lancion, C.M., Jr. 1995. **Fast Facts about Philippine Provinces.** Tahanan Books, Manila.
- Latiff, A. 1988. Studies in Malesian Vitaceae VIII. A new species of *Ampelocissus* from the Philippines.
- Lawrence, B.L. 1939. **Collections from the Philippine Islands Mammals.** Bulletin of the Museum of Comparative Zoology, 86:28-73.
- Leviton, A. E. 1963a. **Remarks on the zoogeography of Philippine terrestrial snakes.** Proc. Calif. Acad. Sci. , 4th ser. 31(15):369-416.
- Madulid, D. A. 1994. **Plant Diversity in the Philippines.** In: Proceedings of the International Symposium on Biological Diversity and Terrestrial Ecosystems, April 17-20.
- Madulid, D.A. 1991. Rare and vanishing fruit trees and shrubs in the Philippines. **National Museum Papers** 2(1):39-58.
- Madulid, D.A. 1991. The endemic genera of flowering plants in the Philippines. **Acta Manilana** 39:47-58.
- Madulid, D.A. and H.G. Gutierrez. 1981. Botanical expeditions in the Philippines (1953-1979) I. Vascular Plants. **NRCP Bulletin** 36(1):78-90.
- Madulid, D.A. in press. **Dictionary of Philippine Plant Names** (3 Vols). Bookmark, Inc., Makati City.
- Manamtam, A. S. 1998. **Survey of the population of the Philippine Eagle**
- Manamtam, A. S. In prep. **Habitat assessment and preliminary wildlife**
- Manamtam, A. S., Lepiten, M. V., Alviola, P. and A. C. Viojan. In prep. **The**
- Merrill, E.D. 1916. New plants from Samar. **Philipp. J. Sci.** 11(4):175-206.
- Merrill, E.D. 1923-1926. **Enumeration of Philippine Flowering Plants** (Vols 1-IV). Bureau of Printing, Manila.
- Musser, G.G., L.R. Heaney and B.T. Tabaranza, Jr. 1998. **Philippine**
- National Mapping and Resource Information Authority. 1988. **Vegetation map of Samar Island (Nos. 2520, 2525)** Interpreted from 1987 SPOT Satellite images by the Swedish Space Corporation in cooperation with the Natural Resources Management Center. NAMRIA, Makati.
- occurrence of *Parus elegans* and *Chloropsis flavipennis* on Samar Island: new distribution records for birds in the Philippines.**
- Oldfield, S., C. Lusty, and A. MacKinven (comp.). 1998. **World List of Threatened Trees.** World Conservation Press, Cambridge, U.K. 650 pp.
- PAWB. 1998. **Annual Report.** Quezon City, Philippines.
- Philippine-German Forest Resources Inventory Project. 1987. **Forest Resources of Region 8.** DENR-FMB, Quezon City.

***Pithecopaga jefferyi* on Samar Island: a trip report.** Unpublished.

- Quisumbing, E. 1957. Botanical expeditions in the Philippines (1946-1953). **Proc. Eighth Pacific Science Congress** 4:501-543.
- Rand, A. L. and D. S. Rabor. 1960. ***Birds of the Philippine Islands: Siquijor, Mt. Malindang, Bohol, and Samar.*** Fieldiana Zool. 35: 221-441.
- Rodents: Redefinitions of known species of Batomys (Muridae, Murinae) and description of a new species from Dinagat Island.*** American Museum Novitates (3237):51 pp.
- Ross, C. and J. D. Lazell. 1990. ***Amphibians and reptiles of Dinagat and Siargao Island, Philippines.*** *Phil. J. Sci.* 119:256-287.
- Samson, J.A. 1979. **The Geo-Physical History and Geochronology of the Philippine Archipelago.** The Dorma Press, Cabanatuan City. 102 pp.
- Sanborn, C.C. 1952. ***Philippine Zoological Expedition 1946-1947. Mammals.*** Fieldiana: Zoology, 33:89-158.
- Sibley, C. G. and B. L. Monroe. 1993. ***A supplement to distribution and taxonomy of birds of the world.*** New Haven, Yale University.
- Steer, J.B. 1890. ***A list of the birds and mammals collected by the Steere expedition to the Philippines, with localities and with brief preliminary description of the supposed new species.*** Privately published, Ann Arbor, 30 pp.
- Sulit, M.D. 1948. Interesting orchids in Samar. **Philipp. Orchid Review** 1(2):30-31.
- Tabaranza, B. R. and N. A. D. Mallari. 1997. ***Birds. In Philippine Red DataBook: Red List of Threatened Animals.*** Wildlife Conservation Society – Bookmark, Makati City.
- Tabones, B. 1953. Samar giant ferns for orchids. **Philipp. Orchid Review** 5(1):17.
- Taylor, E.H. 1934. ***Philippine land mammals.*** Monographs of the Bureau of Science, Manila, 30:1-548 +25 pls.
- Thomas, O. 1898. ***On the mammals collected by Mr. John whitehead during his recent expedition to the Philippines with field notes by the collector.*** Transactions of the Zoological Society of London, 14:377-412.
- Utzurum, R.C.B. 1992. ***Conservation status of Philippine fruit bats (Pteropodidae).*** Silliman Journal 36(1):27-45.
- Walter, K.S. and H.J. Gillett (eds.). 1998. **1997 IUCN Red List of Threatened Plants.** Compiled by the World Conservation Monitoring Centre. IUCN – The World Conservation Union, Gland, Switzerland and Cambridge, U.K. 862 pp.
- Wernstedt, F.L. and J.E. Spencer. 1967. **The Philippine Island World. A Physical, Cultural, and Regional Geography.** University of California Press, Cal.
- World Bank and GEF. 1994. **CPPAP Project Document.** Washington, D.C., USA.
- World Bank. 1989. **Philippines: Environment and Natural Resources Management Study.** World Bank, Washington, D.C., USA.
- World Bank. 1989. **Philippines: Forestry, Fisheries and Agricultural Resources Management Study.** Report No. 7388-PH. World Bank, Washington, D.C., USA.
- World Wildlife Fund for Nature. 1991. **Inception Report: IPAS Philippines.** Washington, D.C., USA.