IMPLEMENTATION COMPLETION REPORT
Region: LCR
Country: Belize
Project ID: P057031
Grant No. TF 022064

GEF Medium-Size Project:

Northern Belize Biological Corridors Project

June 30th, 2003

Caribbean Country Managing Unit
Environmentally and Socially Sustainable Development Sector Unit
Latin America and the Caribbean Region
The World Bank Group

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GEF MSP IMPLEMENTATION COMPLETION REPORT (ICR)

I. BASIC DATA

(1) Date of Completion Report: April 17, 2003

(2) Project Title:

Northern Belize Biological Corridors Project, Belize, TF022064

(3) GEF Allocation: $723,500

(4) Grant Recipient/Main Contact: Programme for Belize, Belize/Edilberto Romero

(5) Execution Date: April 1999 – June, 2002.

(6) World Bank Manager/Task Team: Douglas J. Graham / Yabanex Batista

(7) Goals and Objectives of the MSP Grant: (include any changes in the objectives):

Despite being one of the smallest countries in the region with a total land area of 22,960 km^2, Belize shows as much diversity in low altitude habitats and biota as any Central American country. The documented biodiversity includes about 4000 plant species, 162 mammals, 571 birds and a herpetofauna of 144 species. Inventory of other groups is incomplete, but believed to display the same general features – biotic communities' characteristic of the Mayan lowlands with good numbers of regional endemics and a few country endemics. The other important feature is that these communities occur within extensive tracts of natural habitat and are fully functional, indicated by the occurrence of good populations of top predators and scavengers.

An extensive protected areas network has been built up in Belize, including statutory, private, and community-managed reserves of various forms. Currently some 55 reserves are recognized in the terrestrial and coastal/marine environment. These range from strict nature reserves and national parks to forest reserves and other management regimes permitting extractive use.

The protected area network is dominated by the block of statutory reserves occupying the Maya Mountain/Mountain Pine Ridge massif. The Rio Bravo Conservation Management Area and the Aguas Turbias National Park form another conservation management unit. This area joins directly to the Maya Biosphere Reserve of Guatemala via the Río Azul National Park, itself linking to the Calakmul Biosphere Reserve in Mexico. The Rio Bravo thus constitutes the Belizean portion of one of the largest remaining tracts of forest in Mesoamerica.

The value of these two sites on a regional and international level cannot be underestimated. Their current quality is further enhanced by being embedded in an area dominated by natural vegetation, maintaining connections to other existing protected areas (e.g. Crooked Tree, Freshwater Creek, Shipstern Nature Reserve); at present it is still possible to walk through natural habitats the length of the country from the Columbia River Forest Reserve to Shipstern Nature Reserve. These connections are, however, now becoming tenuous and being broken. Maintaining them is recognized as essential for the conservation of the biodiversity of Belize, as expressed in both the National Protected Areas System Plan and the National Biological Corridors Plan developed as part of the consultative process under the Mesoamerican Biological Corridor Project.

According to the Medium Size Project brief, the objective of the project is "**to maintain the ecological linkages that currently connect major protected areas within northern and central Belize to the regional Mesoamerican Biological Corridor system"**. It therefore helps maintain the value, in terms of biodiversity conservation, of the protected area network in northern Belize by preventing it from becoming a scatter of isolated sites. It also contributes to maintenance of biodiversity on a regional scale, across the Maya Lowlands. Two valuable by-products of this activity are the development of mechanisms for securing the conservation of recognized gaps in the national protected area system, and, by using an approach emphasizing wide stakeholder participation, promoting community and private sector collaboration in corridor creation that may be replicable elsewhere.

There were no changes to the original objectives established for the project.

(8) Financial Information: Describe any changes from original financing plan including co-financing. Table with key components (initial and final allocations). Key discrepancies can either be described here, or addressed in the sections below as they relate to other implementation issues.

Table 1. Summary of Use of GEF Funds US $			
Project Component	**Planned**	**Actual**	**Variation**
A. Planning for corridor creation and Management in northern Belize			
- A1. Research and Dissemination of Corridor Concepts	25,500	34,845	(9,345)
- A2. Development of Incentives for Corridors/socioeconomic	40,000	5,675	34,325
- A3. Development and Implementation of a Monitoring System	25,250	16,604	8,646
- A4. Technical Personnel	115,000	104,161	10,839
B. Securing Integrity of the RBCMA			
- B1. Investments within the RBCMA*[1]			
- B2. Belriv Investments	49,500	93,675	(44,175)
- B3. Orange Walk Community investments	74,000	77,980	(3,980)
C. Corridors in the N. Coastal Plains	189,100	126,636	62,464
D. Public Awareness and Support for Corridors			
- D1. Environmental Education in Schools	35,500	16,977	18,523
- D2. Environmental Education for Public	13,750	15,656	(1,906)
- D3. Facilitation of Public Participation	23,900	20,399	3,501
E. Project Administration/Coordination	132,000	100,909	31,091
Total	723,500	613,517	109,983

Notes to Table 1:

1. Investments within the RBCMA were Programme for Belize's contribution. Programme for Belize invested US $2.9M in the RBCMA management, planning, protection, sustainable forestry, carbon sequestration, and community outreach activities (see Table 2).

2. The large variation appearing in component A2 is because the private incentives study was not carried due to unavailability of local experts; and budget proposals presented by international experts were higher than the allocated budget.

3. The savings in A4 is a reflection in staff turnover that resulted in the project not paying staff salary during staff transition.

4. Expenses for B2 almost doubled due to changes in the approach in the Belize River Valley communities to ensure completion of Component B2. Savings from Component C was used to cover the variation of expense B2.

5. The savings in C ($62,464) resulted from changes (scaling down or shift in community activity) since some proposed community activities were not endorsed and permitted by the Conservation Division of the Ministry of Natural Resources.

6. Savings in D1 were the result of using University students from Belize, Corozal, and Orange Walk Districts, respectively, resulting in a reduction in wages, per-diem, and transportation expense.

Table 2. Summary of Sources and Uses of Funds US $

Project Component	**GEF**	**Programme for Belize**	**Project Total**
A. Planning for corridor creation and Management in northern Belize			
- A1. Research and Dissemination of Corridor Concepts	34,845	0	34,845
- A2. Development of Incentives for Corridors/socioeconomic	5,675	0	5,675
- A3. Development and Implementation of a Monitoring System	16,604	0	16,604
- A4. Technical Personnel	104,161	0	104,161
B. Securing Integrity of the RBCMA			
- B1. Investments within the RBCMA*[1]		2,568,950	2,568,950
- B2. Belriv Investments	93,675	68,873	162,548
- B3. Orange Walk Community investments	77,980	24,338	102,318
C. Corridors in the N. Coastal Plains	126,636	98,314	224,950
D. Public Awareness and Support for Corridors			
- D1. Environmental Education in Schools	16,977	0	16,977
- D2. Environmental Education for Public	15,656	0	15,656
- D3. Facilitation of Public Participation	20,399	0	20,399
E. Project Administration/Coordination	100,909	155,532	256,441
Total	610,996	2,916,006	3,532,002

II. PROJECT IMPACT ANALYSIS

II. (1) Project Impacts: (a) describe to what extent the objectives have been met; (b) whether the performance indicators have been achieved:

At the end of project implementation, the Northern Belize Biological Corridors Project (NBBCP) has laid the foundation for the long-term conservation of biodiversity in the ecological linkages that form the proposed biological corridors between protected areas across northern Belize and the Maya and Calakmul Biosphere Reserves of Guatemala and Mexico, respectively, in Central America, through the following achievements:

- Development and application of mechanisms for corridor creation and management, appropriate to the northern Belize context including the delineation of the proposed northern Belize biological corridors; development of biological research protocol, baseline research of the proposed biological corridors, research in land tenure patterns and recommendation of alternative land use management strategy.

- Consolidation of the protection and management of the Rio Bravo Conservation and Management Area (RBCMA) as the critical linkage between the corridor network of Belize and the Meso-American Biological Corridor as a whole. The fourth edition of the RBCMA Management Plan has laid out plans for improving the conservation of its ecosystems and for maintaining biological connectivity with the Maya and Calakmul Biosphere Reserve in Guatemala and Mexico and with the other protected areas in northern Belize. Programme for Belize had also agreed the sustainability of the RBCMA through investment in and improvement of its ecotourism and sustainable forestry programs.

- Consolidation of the network of corridors across the northern coastal plain by promotion and support of community-based alternative activities that contribute to the creation or maintenance of biological corridors. Seventeen communities implemented new land management approaches compatible with corridor objectives including agroforestry, bee-keeping, sustainable agriculture production, cultural and ecotourism projects, protected areas management and environmental education, among others.

- The project has also enhanced public awareness and support for the Rio Bravo Conservation and Management Area and the proposed northern Belize biological corridors through the implementation of environmental awareness in the secondary schools of Corozal, Belize and Orange Walk Districts; implementation of an environmental awareness program directed towards the general public; and by facilitating public participation in corridor activities through the formation and consolidation of the Association of Northern Belize Conservation Organizations (ASONCO). The school's outreach program reached almost 90% of the high schools in the Belize, Orange Walk and Corozal Districts reaching 20 high schools and more than 2,000 students. Although, not planned under the original

project, the school education program was also extended to twenty five primary schools in northern Belize.

Despite the significant progress made in laying a good foundation for the consolidation of the Northern Belize Biological Corridors, the development of incentives for private lands conservation and the official recognition by the appropriate Government authorities is a necessary step to guarantee the long-term security of the proposed biological corridors. Although not officially recognized by the government, however, government planning officers are already considering the northern Belize biological corridors in their planning activities as in the case of the Land Management Programs of the Ministry of Natural Resources.

II. (1.1) Describe to what extent the objectives have been met; (b) whether the performance indicators have been achieved.

The achievement of performance indicators is described in the following comparative table.

Table 2. Effectiveness Indicators Comparative Table	
Planned	**Results**
Project Goal: Secure long-term conservation of biodiversity of global importance in the "Maya Lowlands" of north-eastern Central America by maintaining ecological linkages between protected areas across northern Belize, from northern Belize to the Maya Mountain /Mountain Pine Ridge massif in Central Belize into the Maya and Calakmul Biosphere Reserve in Guatemala and Mexico respectively. Indicator: By the end of the project, deforestation rates within the Northern Belize Biological Corridors, adjusted for their area, should be 25% or less of the current deforestation rate for northern Belize.	Significant progress was made towards ensuring the long-term conservation of biodiversity in northern Belize. The foundation was laid for the establishment and consolidation of the northern Belize biological corridors which maintains the Rio Bravo Conservation and Management Area (RBCMA) as the critical linkage with the Maya Biosphere Reserve in Guatemala and the Calakmul Biosphere Reserve in Mexico. The feasibility study for the biological corridors identified the most appropriate corridors routes that connects the RBCMA with the Mountain Pine ridge massif in Central Belize through the Monkey Bay Wildlife Sanctuary and maintains ecological linkages to the protected areas in northern Belize (Community Baboon Sanctuary, Crooked Tree Wildlife Sanctuary, Fresh Water Creek Forest Reserve and the Shipstern Nature Reserve). The 1994 deforestation rate in Northern Belize was estimated at 13,400 ha/year by White et al. 1996. PfB did not have access to the 1994 product generated by White et al., therefore making it impossible to provide a comparison for this data and period. However, PfB was able to conduct an analysis using the 1992 land-use basemap, which was also used by White et al. The analysis found that in 1995 the deforestation rate for Northern Belize was 15,758.5 ha/yr. A similar analysis found that in 2001 the total deforestation for Northern Belize was 193,102 ha and the deforestation rate was -90.2 ha/yr. The results found show that deforestation rates have in fact declined in the Northern part of the country. These results are not entirely due to the impacts of the NBBC project. Other aspects need to be taken into account. Results suggests that more agricultural lands are being abandoned and left to fallow, than land being cleared for agricultural activities. The decline in sugar cane price has contributed to

	the decision of farmers to abandon their lands. The methodology used to reach these estimates had some limitations: i) satellite image data would have provided more reliable and accurate data, and ii) it was not possible to differentiate between transitional areas between agriculture, shifting cultivation and secondary forest. It is therefore recommended that a more comprehensive study is necessary. Extensive field work and current satellite imagery and aerial photograph are necessary to calibrate land-use areas. Also, land use descriptions and classifications need to be standardized to allow for proper estimation of deforestation and regeneration. Despite the shortcomings in the estimation of deforestation between the two reporting periods, the change is significantly different and unlikely to be an artifact of the limitations of data and methodology. Therefore, it is concluded that deforestation has decreased within the study area based on the available evidence, even though the actual extent of the change in rate cannot be accurately determined with the available information.
A. Refinement and application of mechanisms for corridor creation and management appropriate to the northern Belize context.	The feasibility studies including biological, land tenure, human impact and socioeconomic, and land management studies were used to refine the proposed biological corridors and its management. Land use management strategies recommendations were developed for the large parcels of land in order to ensure that its management is compatible with the biological corridors.
A1. Continued research into the biological characteristics of corridors, their potential routes, and land tenure patterns.	A feasibility study including biological characteristics, land use suitability, present and projected human impact, and socio-economic characteristics was conducted in northern Belize. The study determined the most appropriate and viable routes for the biological connectivity between the Rio Bravo Conservation and Management Area and the other protected areas in northern and Central Belize. The proposed biological corridors consist of corridor conservation nodes (principal ecosystems) and its principal routes (primary corridors), secondary routes and supporting links. The primary corridors are the primary routes that have good biological characteristics and the least pressure for land use conversion, hence the best options for maintaining long-term connectivity between the conservation nodes. The secondary routes are

	the second best options for consideration should there be any problems that makes it difficult or unfeasible to maintain the primary routes. The approach used for establishing the most viable corridors included the following steps: Step 1. Identification of the areas with the highest corridor functionality based on the habitat types and vegetation coverage. Step 2. Determining present and projected human impact on the vegetation systems of northern Belize. Step 3. Defining the potential corridor routes based on the corridor functionality and present and projected human impact. Large areas with more or less intact habitat were considered as nodes which are considered as "large stepping stones" linked by corridors. Each corridor was classified according to viability (based on human influence, habitat type, and value to the Northern Belize Biological Corridor concept). This exercise showed preferred corridors, alternate and supporting corridors, resulting in a network of corridors. Step 4. Determine degree of overlaps between protected areas and potential corridor nodes and corridor routes. Step 5. Determine the "Agriculture Land Value" in the area as it relates to the biological corridors. Areas with high agricultural value are considered less suitable for the northern biological corridor while areas with lower agricultural value are considered more suitable for biological corridors. Step 6. Decide on the most viable corridor routes based on the results from Steps 1-5.

	Step 7. Determine land tenure within and adjacent to the biological corridors. This exercise determines the number and types of land owner the corridor will have to deal with and identifies high priority areas for community outreach. For example, Santa Martha was included in the project since it sits in the middle of one of the most biologically suitable corridors. Step 8. Developed land use management strategies and guidelines for the priority land parcels to ensure the integrity of the northern biological corridor and address development issues around the surrounding lands. Step 9. Develop a framework for providing incentives for private land conservation and management to ensure that private lands management is compatible with the northern Belize Biological Corridors. Step 10. Ensure official recognition of the Northern Belize Biological Corridors by the Ministry of Natural Resources and its land use planning authority. On the latter, the awareness efforts made under the project has already ensured that the Northern Belize Biological Corridors be considered by the "Land Management Project" of the Ministry of Natural Resources. Step 11. Development of a strategy for monitoring the effectiveness of the northern biological corridor. Based on this strategy, a pilot monitoring was conducted on selected sites of the network of corridors. Training was provided to community participants to develop monitoring skill and to enable them to participate in data collection of the monitoring sites on birds, mammals, and forest cover, forest impact and present threats. In essence, the MSP project has created a more refined northern Belize biological corridor and has laid a strong foundation for the long-term maintenance of the biological corridors in northern Belize.

A2. Development of incentives for private sector and community participation in corridor creation, through easements, other legal and financial mechanisms, and adoption of revenue-generating activities compatible with conservation aims.	Two initial steps towards the development of a framework for incentives for private lands conservation were developed by the project. This included the land tenure study of the lands within and adjacent to the northern Belize biological corridors, identifying the number and type of land owners. The MSP Project also developed recommendations for land management strategies compatible with the corridor concept for the lands within and adjacent to the corridors. (See the enclosed NBBC Land Management Strategy Report). The development of incentives was the next step but this was not completed since there were no available private conservation incentives experts in Belize at the time that the study was required. Proposals from international experts were higher than the budgeted money for this activity. The available budget for the private incentive study was US $20,000 while the proposal submitted by international consultants went over US $40,000. The project was unable to secure the additional US $20,000 on time to secure the services on the international consultants. The development of the framework for private conservation incentives, therefore, remains as a need for the adequate management of the lands adjacent to the northern Belize biological corridors. The project supported 17 community activities compatible with the biological corridors concept including the establishment and enhancement of protected areas. These revenue-generating activities include ecotourism (9 communities); sustainable agriculture and agroforestry (5 communities); Honey Production (2 communities), and one eco-cultural activity. These activities generate revenues for the communities and are dependent on maintaining a healthy forest cover hence a good incentive for maintaining the biological corridors.
A3. Development of methodology for monitoring the effectiveness of corridors as a tool for conservation, tested during the project lifetime	The feasibility study developed recommendations for monitoring the effectiveness of the biological corridors. Those recommendations were later refined and monitoring protocols were developed for the establishment of a baseline and for evaluating the status and effectiveness of the corridor. Protocols were developed for the monitoring

	of birds, mammals, anurans and forest cover. Training was provided to community representatives who assisted the technical experts in conducting field research for establishing the baseline data of the various corridor routes. The monitoring protocols were tested in selected monitoring sites in each of the corridors that make the northern Belize biological corridors. (See the enclosed Pilot Monitoring Report)
A4. Appointment of technical personnel for coordination and field support for corridor creation activities.	Programme for Belize appointed a Project Coordinator to coordinate and implement project activities. The Coordinator was assisted by a Community Development Officer who was directly responsible for working with and assisting community organizations in planning and implementing community activities and coordinating corridor education activities. An accounts clerk was appointed to train and assist communities in accounting and reporting the use of project funds provided by the project. The overall project implementation was guided by a technical advisory committee which was formed by various local experts including Programme for Belize's personnel, Government representatives, and community representatives. Wherever necessary, community officers were appointed to assist the Community Development Officer in the implementation and coordination of community activities. The project also secured paid and unpaid technical experts to directly implement project activities or to provide technical training and guidance to community activities. The unpaid services came from Government departments and volunteers.
B. Consolidation of the Rio Bravo Conservation and Management Area as the critical link between the corridor networks of Belize and the Mesoamerica as a whole.	Programme for Belize continued to invest within the Rio Bravo Conservation and Management Area (RBCMA) and in community outreach activities in order to ensure the long term conservation of the RBCMA as the critical link between the corridor networks of Belize and Mesoamerica. Over the three-year project period, Programme for Belize invested US $1.7 M in improving the management and projects and activities to consolidate the protection of the RBCMA and in strengthening community support through conservation awareness and community outreach.

B1. Enhanced protection of the RBCMA through a series of investments in protection and more sustainable use of biodiversity of this privately managed area.	Investments of US $1.7M were made in the RBCMA in strategic conservation planning, sustainable forestry aimed at developing sustainable timber extraction while maintaining biological integrity, bird conservation and outreach, carbon sequestration aimed at contributing to the abatement of climate change, and the enhancement of its ecotourism program and facilities. Despite the negative effects of the U.S. incident of September 11, 2001, investments were made in improving Programme for Belize's ecotourism facilities and services. Today, ecotourism continues to be the largest source of self-generated revenue for Programme for Belize. It is now generating revenues that cover 25% of Programme for Belize's operation expense. The proceeds from the ecotourism program are reinvested in the protection and management of the RBCMA. Programme for Belize has enhanced its capacity to develop timber extraction in a manner that it does not cause significant impacts on the biodiversity and environmental characteristics of the forests. The organization is now trying to demonstrate the economic viability of sustainable timber extraction. Programme for Belize completed a five year site conservation plan for the RBCMA that consolidate the area as the critical ecological link with the other protected areas in northern Belize, and the Maya Forest (Selva Maya) in northern Central America. As a result, Programme for Belize is now participating in the ecoregional planning of the Selva Maya forest together with The Nature Conservancy, Conservation International, Defensores de La Naturaleza in Peten, Guatemala, and Pronatura Peninsula Yucatan in southern Mexico. Programme for Belize has also secured ten years of annual funds for the protection of the RBCMA as well as an endowment fund for its management from the Tropical Forest Conservation Act Agreement between the Government of the United States of America and the Government of Belize.

B2. Technical support for community-based conservation and economic development projects identified as priorities by the Belize River Valley (BELRIV) communities east of the RBCMA.	Community-based land use management approaches compatible with corridors were supported and implemented in five (5) communities in the Belize River Valley (BELRIV) area. These community-based conservation and economic development projects included support for the establishment of a protected area and ecotourism activity (Spanish Creek Wildlife Sanctuary in Rancho Dolores); Culture and ecotourism in the Community Baboon Sanctuary (Bermudian Landing), St. Paul's Bank, and Flower's Bank; and sustainable agriculture in Rancho Dolores and Flower's Bank. The Spanish Creek Wildlife Sanctuary is a community-based protected area of 5,985 acres (2,422 ha.) bordering the southeastern part of the RBCMA thereby strengthening the protection of the RBCMA and enhancing the protection of the "Belriv Node" of the proposed northern Belize biological corridor.
B3. Technical support for community-based conservation and economic development projects identified as priorities by the communities of northern Orange Walk District north and north-eastward of the RBCMA.	The project provided support for land use management approaches compatible with biological corridors in four Orange Walk communities. These community-based conservation and economic development activities included tree production and landscaping in San Felipe, cultural tourism and backyard gardening in Yo Creek, Agroforestry in San Lazaro, and honey production in San Lazaro and Indian Church. These projects have demonstrated that there are viable alternatives of land management approaches that are compatible with the conservation of corridors in northern Belize. The project also contributed to ensuring the protection of forested areas in San Lazaro by securing tenure of 250 acres of forested land for protection and sustainable management under the management of the Rio Hondo Environmental and Conservation Organization (RHECO).
C. Consolidation of a network of corridors across the northern coastal plain from the Rio Bravo northeastward to Shipstern Nature Reserve, through community and other actions.	As proposed, the RBCMA connects with the Belize River Node which has corridor connection with the Sibun River corridor of Central Belize through the Mile 35 corridor. The Belize River Node is also connected to the Esteves Node in the northern coastal plain by the Crooked Tree Corridor and the Biscayne Corridor. The Esteves Node forms the principal link that connects with the corridors of the Belize River and Rio Bravo Nodes. In the northern coastal plains, the principal

	nodes are formed by the Esteves Node, the Fresh Water Creek Node, the Shipstern High Forest Node and the Shipstern Dry Forest Node. As proposed, the Santa Marta and Colha Corridors connect the Esteves Node with the Freshwater Creek Forest Node (Fresh Water Creek Forest Reserve). The Xopol corridor connects the Fresh Water Creek with Shipstern High Forest and Shipstern Dry Forest Nodes (Shipstern Nature Reserve). The MSP project made investments in sustainable community-based activities compatible with conservation in seven communities along the northern coastal plain corridor. Community based sustainable activities supported by the project include agroforestry and small livestock in the Belize Old Northern Highway Community Association (BONCA); water quality monitoring and protection in Progresso, Protection, education and ecotourism in the Shipstern Nature Reserve; establishment of private protection and sustainable forest management in Fireburn and Wildtracks, sustainable agriculture in Santa Marta and ecotourism in San Estevan. Santa Marta was not included in the original project proposal but was included in the second year of project implementation after the feasibility study indicated that this community is located within the principal corridor route and therefore considered critical for ensuring the long-term integrity of the northern Belize biological corridors.
Indicators for A,B, and C: Six communities or major landowners (representing about 50% of those targeted by the project successfully implementing new land management approaches compatible with corridor objectives.	Of the 17 community activities supported by the project, four (4) community-based ecotourism activities are still operational and generating revenues for the communities; one (1) community-based agroforestry project is still operational and generating revenues, and two (2) community-based honey production are also operational and generating revenues for the communities. These activities are all compatible with conservation and the biological corridors concept. While, the project targeted indicator was reached, there was less investments in the community-

	based project as originally planned for Component C. There are various reason for less investments: 1.) The wildlife rearing projects were not endorsed by the Conservation Division of the Ministry of Natural Resources hence the communities were unable to develop these activities. They were forced to scale back their project or to develop alternative activities with lower funding requirements; 2.) Political interference in some of the communities made it impossible for some community groups to ensure land tenure or permission to work on the natural resource areas. This was certainly the case for Progresso and the Association of Friends of Fresh Water Creek. The activities had to be scaled back or abandoned for other alternatives that required lower investments. 3.) Hurricanes and flooding caused several weeks of delays due to inaccessibility of the community areas causing lower investments in the community-based activities. 4.) Some community groups had very little capacity for project implementation. The MSP project , therefore, had to spend a lot of time assisting this communities and the activities moved at a much lower pace resulting in less investments in such community groups as is the case for the Belize Old Northern Highway Communities' Association (BONCA). At the end, there was US $65,000 less investments on Component C. Corridors in the Northern Coastal Plains. This additional fund was re-allocated for the investments in the Belriv and Orange Walk Communities (Components B2 and B3, respectively).
Indicator for A, B, and C: Alteration in formal conservation status of lands on a minimum of four sites located in corridors such that their biodiversity comes under stricter protection.	The project supported the increased conservation status of three sites and enhanced the protection and sustainability of another. The project ensured the land tenure of 250 acres of forested land for protection and sustainable management by the Rio Hondo Environmental Conservation Organization (RHECO). The project also provided support and technical expertise to the Rancho Dolores Environmental and

	Development Group that led to the Ministry of Natural Resources declaring the Spanish Creek area (5,985 acres) as the Spanish Creek Wildlife Sanctuary. The project also provided the support for surveying 2,400 acres of forest for sustainable management and protection in the Fireburn area under the management of Wild Tracks. The project provided funds to improve the protection capacity and increase sustainability, through ecotourism, in the Shipstern Nature Reserve.
D. Improved public awareness and support of the Mesoamerican Biological Corridors and conservation issues in general, on the part of the student population, general public, and decision makers, translating into support for the corridor concept.	The majority of the community-based activities supported by the project had a component of conservation awareness directly linked to the consolidation and maintenance on the northern Belize biological corridors. Improved public awareness and support for the biological corridors was created through environmental education in the high schools and primary schools in the Orange Walk, Belize and Corozal Districts, general public awareness, and the facilitation of community participation.
D1. Implement environmental awareness program in the secondary schools of Corozal, Orange Walk and Corozal Districts (presentation at schools, displays, educational materials, support to field visits).	An environmental education program was developed and implemented in 20 high schools (90% of the high schools) in Orange Walk and Corozal districts reaching a total of 2,000 students. Since, funds from the community-based activities were not fully utilized, part of those funds was used to develop and implement a primary school environmental education program. Funds saved from the community-based activities were used to develop a primary school environmental education program that was implemented in twenty five primary schools in the three districts. The environmental education program was implemented through the use of various means including teachers meeting, school presentations, field trips, career day displays, support for environmental projects and summer camps held in the Hill Bank Field Station of the RBCMA.
Indicator: At least 50% of the secondary school student body exposed to corridor concept.	2000 high school students representing 90% of the high school student body in the Belize, Corozal and Orange Walk Districts were exposed to the northern Belize biological corridors concept.

	An additional 25 primary schools from the area were exposed to the biological corridors concept.
D2. Implement environmental awareness program directed towards the general public (environmental awareness strategy formulation, production of presentation materials)	The creation of awareness and support for the northern Belize biological corridors targeting the general public was carried through the development of educational materials such as press articles, brochures, displays, posters and corridor maps that were distributed among the general public and in various forum, shows and fairs organized by Government authorities, non-governmental organizations and communities. A biological corridors documentary video was developed and aired on the local television stations and in one local expo and trade fair. These education efforts have resulted in support on the biological corridors from the communities, and the student population. Although, the biological corridors have not been officially accepted by the Government of Belize, Government officers involved in land use planning are aware of the corridors and are considering it in their planning exercises. The recently launched "Land Management Program" of the Ministry of Natural Resources, for example, is already considering the work carried on the northern biological corridor as part of their planning activities.
Indicator: At least ten media presentations concerning corridors given to the general public.	Four radio presentations were on biological corridors were made to the general public. Four community activities' inaugural ceremonies were used as forums for presentations on the biological corridors to the general public. A video documentary on the biological corridors was also presented at the Belize Expo and Trade Show, which was visited by thousands of people from Belize. The Video documentary was also aired on local television in the three northern districts of Belize.
D3. Facilitation of public participation in corridor activities (support for local associations such as the proposed Association of Northern Belize Conservation Organization (ASONCO), including travel cost for participation) and support for inter-organizational	The project facilitated the participation of the general public in northern Belize by supporting the establishment and consolidation of the Association on Northern Belize Conservation Organizations (ASONCO) and the establishment of a technical advisory committee that included stakeholders from governmental Institutions, other non-governmental organizations, and community representatives in the coordination of the biological corridors project.

coordination through a Technical Advisory Group.	The project has also secured the active participation of ASONCO in the Meso-American Biological Corridors (MBC) by ensuring that ASONCO is represented in the technical advisory committee of the MBC. Their participation at high level committees will ensure that their interests are considered and that the northern Belize biological corridors are considered and maintained. The mid-project review carried in the form of a workshop with all the communities involved in the biological corridors project provided an opportunity for the community representatives to review project progress and participate in the coordination, and modification of the projects.

II. (2) Project Sustainability

A three-prong approach was used to ensure the continuation of project benefits. The first approach is through the support of community-based alternative land-use activities which are compatible with biological corridors such as agroforestry, ecotourism, and honey production. These alternative land use activities generate economic benefits for the community groups and therefore provide an incentive for the protection and maintenance of the biological corridors beyond project completion. The technical and financial training provided to the community groups has enabled some of the community groups to get further financial assistance from local funding agencies for enhancing their alternative land use management projects and hence continue to generate community benefits long after the project has been completed. The Rio Hondo Environmental Conservation Organization, for example, is continuing with their agroforestry and honey production project. They are generating revenues from agriculture products grown under the agroforestry project while conducting reforestation and maintaining an area for conservation. They are also generating revenues from the sale of honey. The San Estevan Ecotourism Group was able to access additional funding for the furnishing of their cabana while St. Paul's Bank continues to generate revenues from ecotourism.

The second approach is through the use of public awareness and environmental education in 90 % of the high schools and 25 primary schools in the Orange Walk and Corozal districts. This approach used various methods of creating awareness including documentary videos, field trips, press articles, the development and distribution of biological corridors maps and brochures.

The third approach is through the creation of awareness at various fora and advisory committees that included non-governmental organizations and governmental institutions. This approach has gathered significant attention and recognition from the conservation and planning governmental organizations that it is being considered by the "National Land Management Program" of the Ministry of Natural Resources of the Government of Belize in the development of a national land management framework. The formation of the Association of Northern Conservation Organizations (ASONCO) will also enable the communities in northern Belize to access funding and training from other organizations and hence continue to generate economic benefits and support for the communities and the northern biological corridors.

The dissemination of the results of the land management strategy for large land parcels owned by the Government and large land owners will increase the support for the continuation of the biological corridor project benefits. A good foundation has been created for the consolidation of the Northern Belize Biological Corridors that will continue to provide benefits long after the completion of the MSP project.

II. (3.) Replicability

Sensitizing the high school teachers before implementing the high school education program increased the receptivity of the program and eased the organization of logistics and scheduling for the education activities. Sensitization and consultation meetings with teachers of the region are therefore important and recommended before engaging in any major student awareness and environmental education program.

The community consultation meetings prior to the formulation of the Northern Belize Biological Corridors Project assisted in the formulation of the project and increased the community understanding and participation in the biological corridors. These approaches are therefore worthy of replication in the establishment and consolidation of biological corridors in central and southern Belize and in other countries of Central America.

The approach used for establishing the most appropriate network of corridors is worth mentioning. It considered the best options based on the biological and climatic characteristics of the area, the socioeconomic conditions of the area, the present and projected human impact, actual protected areas and land suitability in designing the most appropriate corridors network. Lands with higher agriculture value were considered less appropriate for the biological corridors since it was projected that it will most likely be cleared for agriculture in the short to medium term. The result of this approach is a network of corridors which is not only the most appropriate biologically but which has more support from the communities, Government authorities and other relevant stakeholders.

Because of the stakeholders' involvement and the public awareness activities implemented, the Northern Belize Biological Corridors have drawn the consideration and interest of government officers in the Ministry of Natural Resources. Various presentations and updates were given to government officers, NGO representatives, and private individuals in meetings of the regional Mesoamerican Biological Corridors as well as in presentations organized by the Northern Belize Biological Corridors Project. As a result, the Land Management Program of the Ministry of Natural Resources, funded by the IDB, is now considering the approach and results generated by the MSP Project in developing the land-use planning activities for the Land Management Planning Project. The Northern Belize Biological Corridors Project will provide a significant contribution towards the development of a better land management framework for the country of Belize.

II. (4.) Stakeholder involvement

Stakeholders' participation was ensured through community consultation meetings prior to the formulation of the Northern Belize Biological Corridors Project. These consultation meetings assisted in the formulation of the MSP project, increased the awareness of the communities and guaranteed the support of 17 community projects in the Belize, Corozal, and Orange Walk Districts in alternative land use management activities that are compatible with biological corridors. Although the disbursement of funds for community based activities took a long time to come from community consultation to implementation, the consultations eased community participation on the project. Without the community consultations, it would have taken longer to mobilize the communities to participate in the Northern Belize Biological Corridors Project.

The creation of the technical advisory committee for the project ensured the participation of other relevant stakeholders from conservation organizations, governmental institutions, and representatives from the targeted communities who are directly or indirectly involved with biological corridors and conservation of biodiversity in Belize. The technical advisory committee included a representative of the Mesoamerican Biological Corridors (MBC) project which enabled an increased collaboration in the implementation and funding of complementary activities such as the formation of the Association of the Northern Conservation Organizations (ASONCO) and the implementation of an alternative livelihood study tour for communities living adjacent to protected areas.

This approach has allowed the consideration of the northern Belize biological corridors beyond project completion thus increasing the likelihood of continuity of the biological corridor. The involvement of stakeholders at this level made it easier to solve problems encountered in the field. For example, the original MSP project had considered working with the Belriv organization to implement community-based activities in the Belize River Valley in the Belize District. However, Belriv was not complying with its responsibility to facilitate the implementation of the planned community-based activities. Because there was community representation at the technical advisory committee, it was easier for the communities to understand the problem and the decision of the project to work directly with the individual communities in the Belize River Valley instead of the Belriv organization.

The consultation and sensitization meetings with the teachers of the region guaranteed their understanding of the project and facilitated the implementation of the awareness and education program in the high schools and primary schools in northern Belize. The lesson learned here is that the involvement of the teachers at the planning level is necessary to guarantee success and efficiency in the implementation of any conservation education program targeting students in the area.

II. (5.) Monitoring and Evaluation

The project coordinator was responsible for the overall implementation of the project activities. The community worker was directly responsible for the implementing and supporting community initiatives. Both posts were integrated into the PfB management structure and Programme for Belize was responsible for providing the necessary project support services, both in the field and from its central administration.

Monitoring and evaluation of project progress on an on-going basis was therefore the responsibility of the project coordinator under the supervision of Programme for Belize's Executive Director.

A Technical Advisory Committee (TAC) was established to provide guidance to the project coordinator and to monitor and evaluate project progress on a periodic basis. The TAC was comprised of representatives from other NGOs, Government departments, qualified personnel from Programme for Belize, and community representatives thereby providing transparency and participation of a variety of stakeholders, especially the communities.

The involvement of community representatives in the TAC made it easier for the project coordinator to take necessary decisions (on the advice of the TAC) that was not favorable for some of the community organizations that were not responding well. The BELRIV organization, for example, refused to comply with the essential requirements necessary for the disbursement of funds to their organization for community-based activities. Having discussed the issue with the TAC and acting on their advice, the project coordinator decided to work directly with the individual communities in the Belize River Valley. The role played by the TAC in this decision prevented any problems or retaliations from BELRIV and the communities were satisfied with the decision which proved to be more productive at the end.

Since, the successful negotiation and funding for the MSP project came one year after community consultation, the project had to review the feasibility of the community initiatives. This review resulted in the elimination of a few non-viable projects and its sub-sequent substitution for a more viable one. This was the case for the wildlife rearing initiatives proposed by Fireburn/Wild Tracks and Indian Church. Wildlife rearing is not allowed for commercial purposes, only for research, under the current Wildlife Protection Act of Belize. Although wildlife rearing can contribute to natural resource protection if done properly, these initiatives had to be abandoned by the communities. Instead, they opted for honey production projects which is compatible with conservation and generates much needed revenues for the communities.

The annual monitoring visits by a mission of The World Bank were used for conducting joint evaluations of project progress together with the project coordinator. These missions included field visits to monitor progress on the community initiatives and meeting with stakeholders involved in the project. These missions allowed for the

revision of project progress, the discussion and agreement on project adjustments, and forward planning for the following year's implementation plan.

A closer look at the project results indicate that the project accomplished the majority of its project indicators and surpassed some of them:

- The feasibility studies including biological, land tenure, human impact, and socioeconomic and land management studies were used to refined the proposed northern biological corridors and its management. A monitoring strategy and pilot monitoring was developed for the major corridors. Two major steps towards the development of a framework for private lands conservation incentive were developed: the land tenure study and the land management strategy recommendation. The actual development of a framework for incentives for private lands conservation remains an essential element needed to ensure the active participation of private land owners. The project provided support for revenue-generating activities compatible with biological corridors such as ecotourism (9 communities), sustainable agriculture and agroforestry (5 communities), honey production (2 communities), and one eco-cultural activity.

- The MSP project consolidated the Rio Bravo Conservation and Management Area (RBCMA) as the critical link between the corridor networks of Belize and the Mesoamerica through the enhancement of the protection and sustainability of the RBCMA. The MSP also supported five community-based conservation activities in the Belize River Valley area and supported the establishment of the Spanish Creek Wildlife Sanctuary.

- The project also provided technical and financial support to the four communities in the Orange Walk District including natural resource protection, agroforestry, honey production and eco-cultural tourism.

- The MSP project made investments in seven communities along the northern coastal plain corridors in agroforestry and small livestock, water quality monitoring and protection, education and ecotourism, sustainable agriculture, and private protection.

- Some communities in the northern coastal plains had very limited project implementation capacity or experienced a lot of political interference that prevented them from obtaining community support or resource management rights. Also, some of the original community initiatives, especially the wildlife rearing activities, did not meet approval from the Conservation Division of the Forestry Department, since the Wildlife Conservation Act does not have room for wildlife rearing for commercial purpose. These problems resulted in significant changes in the community initiatives which resulted in less investment in community-based activities in the northern coastal plain communities. As a result, funds were reduced for the northern coastal plain communities and

reallocated for the Belize River Valley Communities and the Orange Walk communities.

- The project supported the increased conservation status of three sites and enhanced the protection and sustainability of another. The project ensured the land tenure of 250 acres of forested lands for protection and sustainable management by the Rio Hondo Environmental Conservation Organization (RHECO). The project also provided support and technical expertise to the Rancho Dolores Environmental and Development Group that led to the Ministry of Natural Resources declaring the Spanish Creek area (5,985 acres) as the Spanish Creek Wildlife Sanctuary. The project also provided the support for surveying 2,400 acres of forest for sustainable management and protection in the Fireburn area under the management of Wild Tracks. The project provided funds to improve the protection capacity and increase sustainability, through ecotourism, in the Shipstern Nature Reserve.

- An environmental education program was developed and implemented in 20 high schools (90% of the high schools) in Orange Walk and Corozal districts reaching a total of 2,000 students. An additional 25 primary schools of the area were exposed to the northern biological corridors through teachers' meeting, school presentations, field trips and support for environmental projects.

- The creation of awareness and support for the northern Belize biological corridors targeting the general public was carried through the development of educational materials such as press articles, brochures, displays, posters and corridor maps that were distributed among the general public and in various forum, shows and fairs organized by Government authorities, non-governmental organizations and communities. A biological corridors documentary video was developed and aired on the local television stations and in one local expo and trade fair.

- These education efforts have resulted in support for the biological corridors from the communities, and the student population. Although, the biological corridors have not been officially accepted by the Government of Belize, Government officers involved in land use planning are aware of the corridors and are considering it in their planning exercises. The recently launched "Land Management Program" of the Ministry of Natural Resources, for example, is already considering the work carried on the northern biological corridor as part of their planning activities.

A mid-term project evaluation carried with the community organizations proved useful in reviewing progress in community initiatives and provided an opportunity for the communities to provided advice and recommendations to each others' initiatives and to the MSP project. This community evaluation of the project also served to motivate the various communities involved in the project.

II. (6.) Special Project Circumstances

Political interference and affiliations increased the success of community activities in one hand but lead to failure in other instances. The Rio Hondo Environmental Conservation Organization (RHECO), for example, managed to get a lease-hold of 250 acres of forested land to be used for conservation and agroforestry because they managed to get support from their community and political representative. On the other hand, the San Felipe Community Group was unable to get support from their political representative and therefore was unable to get legal tenure of the land to implement their desired agroforestry project.

As a country located in the Caribbean coast, Belize is prone to storms and hurricanes. The passage of Hurricane Keith in October 2000 sent the people of northern Belize to shelter for three days causing delays in project implementation. However, the largest delay was not caused by the actual passage of the hurricane but by the flooding it brought to the area. The Northern Highway was flooded for three weeks while community project areas remained flooded for more than a month. The hurricane damaged community projects and caused significant losses of personal infrastructure of residents in the communities targeted by the Northern Belize Biological Corridors Project. Time had to be allocated for community residents to recover from the difficulties caused by the storm thereby causing significant delays in project implementation.

However, because of its track record, Programme for Belize was contracted to implement a hurricane relief project funded by the Christian Relief Fund and was therefore able to provide much needed assistance to the communities affected by the hurricane. This hurricane relief project enabled Programme for Belize to maintain positive relations with the communities and thus maintain the motivation of the communities to re-initiate community project implementation as soon as the communities overcame the difficulties of the hurricane and the floods had receded. This effort of Programme for Belize made it possible for community-based activities to re-initiate in a shorter period of time.

Programme for Belize have now developed “natural disasters management plans” for the communities affected by the hurricane. These plans will ensure that communities are better prepared for natural events such as hurricanes and to recuperate to normality much faster after the passage of the storms. Future projects in the area will therefore suffer minimal delays from the effects of hurricanes.

The delays caused by the hurricanes and flooding resulted in some community groups not being able to get their project to full completion and operational. The training provided, however, has enabled those community groups to access funding to get their project operational.

The time lapse between the pre-project community consultation to successful project negotiation and initial disbursement of funds took more than an year. This time lapse created some disillusionment and disintegration of some community groups. However,

the projects' community officer managed to motivate the remaining community groups to participate in the implementation of community-based initiatives.

II. (7.) Institutional Capacity / partner Assessments

The initial stakeholders' consultation process prior to the formulation of the project was crucial to ensuring the success of the Northern Belize Biological Corridors Project. The consultation process provided awareness and understanding of the corridors concept in the targeted communities, provided a sense of ownership and permitted community participation through the implementation of 17 community-based projects.

The involvement of relevant governmental institutions such as the Ministry of Natural Resources and the Ministry of Economic Development in the project's technical advisory committee increases Government support for project implementation and thus increases project success.

The Northern Belize Biological Corridors Project is the first medium size grant project implemented by the Programme for Belize. As such the guidance and technical assistance provided by The World Bank Task Manager and the experience with the community project has greatly improved the capacity of Programme for Belize for implementing medium size projects.

The project provided for the first major undertaking in agroforestry as a biodiversity conservation and economic development activity for communities in northern Belize. As a result, a good pilot project has been developed in the San Lazaro Village which has increased the capacity of Programme for Belize and San Lazaro to demonstrate a successful agroforestry venture in northern Belize, the first for the country.

The participating communities have also increased their capacity in developing alternative land-use management approaches that satisfy their interest and fulfill corridor objectives. The participating communities have also increased their capacity for obtaining additional financing from local funding agencies.

Through the MSP project therefore, Programme for Belize has increased its capacity in developing and implementing medium sized project and alternative land use management activities that are compatible with corridor conservation while generating revenues to the communities.

The MSP project has also positioned Programme for Belize to become the major player in the ecoregional planning and conservation efforts of Maya Forest (Selva Maya) region which includes Belize, southern Mexico, and northern Guatemala.

III. SUMMARY OF MAIN LESSONS LEARNED

Pre-project consultation process: A pre-project community consultation process assists in the formulation of the project, increases the awareness and sense of ownership of the communities, and increases support from the communities and project success.

Community participation: Addressing the interest of communities through community-based alternative land use activities increases the participation of the communities in conservation project as well as their support for the northern Belize biological corridors.

Involvement of relevant stakeholders: Involvement of Government authorities and other relevant stakeholders increases the long-term security of biological corridors, increasing project benefits beyond project completion. The involvement of community representatives at the coordination level, through the technical advisory committee, improves the capacity of the organization for solving complex problems involving community organizations.

Corridor routes of less resistance: While a network of corridors were generated during the first year of the project, the refinement of the corridors considering human impact and agricultural land use value is important in determining the most appropriate corridors with less likelihood of land conversion; it is highly unlikely to expect that areas with high agricultural land use value will remain undeveloped in the long-term

Political support: The lack of political support increases the likelihood of failure for community-based projects while political support enhances the likelihood of project success in community-based land use activities that are compatible with the corridors concept.

Land Tenure: Land tenure remains a critical factor for communities to engage in alternative land-use management approaches. The lack of legal tenure of the land prevents long-term investments on alternative land use approaches by the communities and funding agencies.

Support for alternative land-use management: Providing support for alternative land-use management approaches that satisfy the interest of the communities and fulfill corridor objectives increases the support of the communities in maintaining and consolidating the biological corridors.

Official acceptance of biological corridors: While government officials are already considering the northern Belize biological corridors in their land management projects, it is essential to get official acceptance of the northern Belize biological corridors in order to ensure its long-term integrity.

Private conservation incentives: The biological corridor routes pass through a mix of land tenure types including private property, national land, forest reserves and protected areas. National lands are presumably open for inclusion as protected areas in the

National Protected Areas System. However, as the corridors pass by some large undeveloped private lands, it is important to provide conservation incentives for private land owners to implement land use management strategies that are compatible to and maintain the northern Belize biological corridors.

IV. FINANCIAL MANAGEMENT STATUS

Summary of Audit Reports received and periods that they cover over the course of the project; and assessment from the internal Financial Management Review of these reports.

From July 1999 to June 2000, the audit reports were sent in September 2000.

From July 2000 to June 2001, the audit reports were sent in September 2001.

Due date of final statement of accounts and external audit with period of coverage: The Audit Report was sent in June 10, 2003 and covers the period of July 2001 to the End of Project.

Received by task manager: **Yes**/No (if no, explain when final report is expected to be received): June 10, 2003.