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**ECUADOR**

**FEASIBILITY STUDY FOR THE GALAPAGOS ENVIRONMENTAL  
MANAGEMENT PROGRAM**

**(TC9307209)**

**PLAN OF OPERATIONS**

**1994**

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ABBREVIATIONS

BANK	Inter-American Development Bank
CAAM	Comisión Asesora Ambiental
CETUR	Corporación Ecuatoriana de Turismo
CONADE	Consejo Nacional de Desarrollo
CPP	Country Programming Paper
DIGMER	Dirección General de la Marina Mercante
EIA	Environmental Impact Assessment
GEF	Global Environmental Facility
GIS	Geographic Information System
GMRR	Galapagos Marine Resources Reserve
GOE	Government of Ecuador
IEOS	Instituto Ecuatoriano de Obras Sanitarias
INEFAN	Instituto Ecuatoriano Forestal y de Areas Naturales y Vida Silvestre
INGALA	Instituto Nacional Galapagos
MOP	Ministerio de Obras Públicas
NGO	Non-Governmental Organizations
PDM	Programa de Desarrollo Municipal
PMP	Programming Mission Paper
PNUD	Programa de las Naciones Unidas para el Desarrollo

FEASIBILITY STUDY FOR THE GALAPAGOS ENVIRONMENTAL MANAGEMENT PROGRAM

(TC-93-07-20-9)

EXECUTIVE SUMMARY

REQUESTER: Republic of Ecuador (CONADE)

EXECUTING AGENCY: Permanent Commission for the Galapagos

BENEFICIARIES: Republic of Ecuador

FINANCING: IDB: ¥64.2 million (JF)1/  
Local counterpart funding: US\$ 60,000  
Total: Equiv. US\$660,000  
1/Equiv. US\$600,000

TERMS: Execution period: 11 months  
Disbursement period: 1 year

ENVIRONMENTAL CLASSIFICATION: The Environmental Management Committee, at its meeting of June 7, 1994, classified this as a Category I operation.

OBJECTIVES: The purpose of the technical cooperation is to design and assess the feasibility of an Integrated Environmental Management Program for the Archipelago of the Galapagos. This program would support the implementation of two plans for the Galapagos: the Comprehensive Plan for Tourism Management and Conservation of the Galapagos Islands; and the Management Plan for the Galapagos Marine Resources Reserve. The specific objectives of the technical cooperation are to: (a) prepare final designs for investments needed to implement the plans; (b) propose an effective institutional structure for integrated environmental management of the Galapagos and establish the corresponding needs for rationalizing the role and strengthening existing institutions; (c) build commitment to integrated environmental management of the Archipelago through local participation in project preparation; and (d) assess the socio-economic, financial, institutional, legal and environmental feasibility of an eventual operation for environmental management in the Galapagos.

DESCRIPTION: The technical cooperation will be comprised of the following two components: (a) the design and feasibility study and (b) support activities for

integrated environmental management. The first component will consist of the feasibility study and design of investments and activities for an eventual loan program to include: (a) land use planning and environmental sanitation component for the three municipalities of the Galapagos; (b) management of the Galapagos Marine Resources Reserve; and (c) institutional development and strengthening. The second component will consist of technical assistance to the Permanent Commission, local demonstration projects and community participation activities. The technical cooperation will be undertaken in close consultation with the institutions responsible for and the local groups affected by land use planning, urban development and natural resources management of the area. To this end, a participatory planning process will take place during the entire feasibility study under the direction of the Permanent Commission for the Galapagos and its members.

**BENEFITS:**

The technical cooperation is expected to yield positive environmental benefits with respect to: (a) operational definition of existing environmental policies and regulations for the non-park lands and the Marine Resources Reserve, specifically in fisheries conservation, pollution prevention and tourism; (b) enhanced local support, particularly among residents and small businesses, for environmental management in non-park lands and the Marine Resources Reserve; (c) enhanced institutional framework, including inter-agency agreements, for cooperative management of the Archipelago; and (d) practical local experience in small-scale activities in support of environmental management. The program resulting from the technical cooperation would yield long-term benefits in environmental quality, optimal resource allocation and financial sustainability.

**RISKS:**

Given the fiscal situation of the Government of Ecuador and the limited resources of the institutions operating in the Galapagos, the timely availability of sufficient local counterpart funding for both the technical cooperation and the investment program proposed for Bank financing are areas of potential concern. Insofar as this operation, this risk has been minimized since local counterpart has been limited to logistical support. With regard to the investment program, this issue and the possibility of relying on local contributions from communities and sources external to the Government will be addressed during the feasibility study.

The migration rate from the mainland to the Galapagos is estimated at 6.3% annually. The potential effects of improving municipal infrastructure and services on local migration to the Archipelago would be projected and assessed during the technical cooperation in light of limits to carrying capacity.

There are different interests at stake in the development and conservation of the Archipelago, including those of island residents, tourism operators, environmental organizations, national and international tourists, the scientific community and policy makers. Yet most groups recognize the need for controlling growth and sound environmental management. The range of options could lead to conflicts and controversy, unless there is a sustained effort to consult and involve user groups in the definition of the program. The technical cooperation should result in clearly articulated consensus with regard to environmental management actions. To help encourage this consensus, the technical cooperation would include opportunities for active participation of user groups in practical exercises in coastal and marine resource management.

**THE BANK'S  
COUNTRY STRATEGY:**

As indicated in Bank programming documents (CPP and PMP) the Bank's strategy for Ecuador stresses the objectives of reactivating the productive sectors and improving the access to social services for low income populations. Furthermore, the need to focus on policy and institutional reform in the productive and social sectors as well as infrastructural improvement calls for a mix of sector and investment lending.

The Country Programming Paper (CPP) of July, 1993, reiterated the aforementioned strategy and established three basic objectives for the Bank's action in Ecuador: (a) increase economic efficiency through the elimination of institutional and political distortions in the productive sectors; (b) improve the access and quality of primary health care services and basic education for low income groups; and (c) improve the control and preservation of the environment. The strategy emphasizes the improvement of environmental regulation and protection in two main areas: (i) environmental policy and strategy development, focusing on the improvement of land regulation and supervision in the context of appropriate land use practices and prudent development of tourism activities; and (ii) development of environmental institutional and monitoring capabilities, strengthening of environmental management

capabilities at a sectoral level, including technical assistance in developing execution, monitoring and zoning mechanisms toward land protection and other renewable resources. The proposed technical cooperation and the investment program that would ensue from it further the Bank's strategy by strengthening the institutional framework and capabilities for environmental management in the Galapagos while also addressing environmental deterioration in an area of recognized national and international significance.

**SPECIAL  
CONTRACTUAL  
CONDITIONS**

**Conditions prior to first disbursement.** The Executing Agency will present, to the satisfaction of the Bank, evidence of the:

- a. Appointment of the technical working group (see paragraph 3.9);
- b. Presentation and approval of the criteria and procedures for selecting the demonstration activities in environmental management (see paragraph 3.5); and
- c. Signature of the inter-institutional agreement between the Permanent Commission for the Galapagos and the Advisory Commission on Environment describing their responsibilities in the execution of the program (see paragraph 3.10).

**Reports.** The Executing Agency shall present to the satisfaction of the Bank, the following progress reports which will contain an analysis of the activities carried out during each phase including the status of the community based demonstration activities:

- a. Initial report. Within two months of the date of the contracting of the consulting firm (see paragraphs 5.1 and 5.2);
- b. Mid-term report. Within four months of the date of the contracting of the consulting firm (see paragraphs 5.1 and 5.2); and
- c. Draft final report. Within eight months of the date of the contracting of the consulting firm (see paragraphs 5.1 and 5.3).



## I. BACKGROUND

- 1.1 The Government of Ecuador has requested Bank financing to carry out a feasibility study for an Integrated Environmental Management Program for the Archipelago of the Galapagos. The purpose of the program under consideration would be to support the coordinated implementation of two plans for the Galapagos: the **Comprehensive Plan for Tourism Management and Conservation of the Galapagos Islands** approved in 1991; and the **Management Plan for the Galapagos Marine Resources Reserve** approved in 1992. Both plans, which have been ratified by the current Government, establish conservation policies for which innovative solutions and enhanced financial resources will be required during implementation.

### A. Environmental conditions in the Galapagos

- 1.2 The Archipelago of the Galapagos consists of 19 volcanic islands and 42 smaller keys located at the equator approximately 1000 km from the Ecuadorian mainland. The islands encompass a small area (8,000 km<sup>2</sup>) of dry coastal vegetation, rocky shores and beaches which support important colonies of sea birds and marine mammals. The Galapagos are located at the convergence of three major oceanic currents in the Eastern Pacific which account for the productivity and high diversity of its marine area.
- 1.3 The uniqueness and biodiversity of the Galapagos Islands have made them the subject of sustained attention from the international scientific community and environmental organizations. The area has been an important setting for ecological research since its designation as a National Park in 1959 and the establishment of the Charles Darwin Foundation. Ninety seven per cent of the land area of the Archipelago has been designated as National Park.
- 1.4 The Galapagos National Park has been attracting a growing number of national tourists and foreigners who are drawn by the outstanding scenery as well as the unique fauna and flora. The towns located outside the National Park are fast becoming an economic growth center. The booming demand for services has resulted in the expansion of tourism-related businesses, migration from the mainland and rapid land use change.
- 1.5 Designated in 1986, the **Galapagos Marine Resources Reserve** encompasses 70,000 km<sup>2</sup> -- the second largest marine protected area in the world. Although a management plan for the Reserve has been approved, the institutional framework for managing the Reserve remains unclear. There is limited capacity for patrolling the marine area or for managing the fisheries stocks which are important to the region.
- 1.6 The marine waters of the Archipelago support artisanal fisheries for lobster, cod and black coral -- all depleted due to overharvesting. Families that depend on artisanal fisheries, the women that market the fish products and black coral, and other low income

groups are having to adjust to the changing island economy. A recent expansion of industrial fisheries, which are not managed, has raised concerns for potential impact on marine mammal and turtle populations. Conflicts are increasing between traditional and commercial fishermen, foreign fisheries fleets, tourism and conservation interests.

- 1.7 The tourism boom of the last decade has brought dramatic changes in living conditions for the 11,000 permanent residents of the non-park lands. Demand for public services and infrastructure has exceeded the capacity of local government to provide for orderly development. There are inadequate services for water supply, wastewater treatment and solid waste disposal in all three municipalities (on San Cristobal, Santa Cruz, and Isabela). Demand from the tourism sector competes with resident needs, giving rise to user conflicts.
- 1.8 The migration rate from the mainland to the Galapagos is estimated at 6.3% annually. Largely a result of tourism growth, this is an issue of growing concern because of the direct and indirect impact of increasing urbanization, corresponding pressure on natural resources, and a dependency on mainland production. The potential effects of improving municipal infrastructure and services on local migration to the Archipelago would be projected and assessed during the technical cooperation in light of limits to carrying capacity.

B. Institutional context for integrated environmental management

- 1.9 The institutional context for environmental management of the Archipelago is complex, with the protected areas and non-park lands involving national, regional and local entities as well as non-governmental organizations. While the issues differ from one part of the Archipelago to another, there are common institutional problems such as: lack of coordination in policy-making institutions; insufficient mechanisms for controlling growth; lack of financial sustainability and cost recovery; and insufficient local involvement in regional development. Most important, the entities responsible for municipal planning and for managing fisheries, tourism and other activities dependent on the coastal environment lack the administrative and operational capacity to accommodate the changes occurring in the Archipelago.
- 1.10 The National Park Service of the Instituto Ecuatoriano Forestal y de Areas Naturales y Vida Silvestre (INEFAN) manages the National Park in partnership with the Charles Darwin Foundation, which conducts research and monitoring. The National Park Service is confronted with a growing demand for visitor services, resource protection and enforcement yet faces severe limitations in operational capacity and budget.
- 1.11 The Instituto Nacional Galapagos (INGALA) was created in 1980 as an entity responsible for planning and coordinating regional develop-

ment in the Archipelago. In reality, it has had to assume a much broader realm of functions including the execution and maintenance of public works and development control. Neither INGALA nor the municipalities have the resources to ensure that development takes place in line with the carrying capacity of the Archipelago's fragile environment.

- 1.12 Created in 1991 under Executive Decree No. 2707 dated September 10, 1991, the **Permanent Presidential Commission for the Galapagos** was given the mandate to re-examine the policies and institutional arrangements for environmental management of the Archipelago. The work of this inter-agency Commission led to the **Comprehensive Plan for Tourism Management and Conservation of the Galapagos** which calls for an integrated approach to managing the National Park, the Marine Resource Reserves and the non-park lands. The goals of the Plan are to: (a) protect the ecological values of the Archipelago; (b) plan and implement limited, selective tourism development in line with ecological carrying capacity; and (c) build local capacity for environmental management and sustainable development.
- 1.13 Pursuant to Executive Decree No. 1731 of May 9, 1994, the Permanent Commission for the Galapagos, which is formed by representatives of all the most important public and private entities involved in the Archipelago, is vested with the responsibility of promoting, coordinating and supporting environmental management activities in the Galapagos. The Permanent Commission, through its Executive Secretariat, is responsible for introducing, in cooperation with relevant sectoral agencies, specific environmental standards for urban development, tourism and fisheries, consistent with the policies established in the Comprehensive Plan for Tourism Management and Conservation of the Galapagos. To assist the Permanent Commission in this role, the technical cooperation includes assistance in the form of three individual consultants.
- 1.14 Pursuant to Executive Decree No. 1107 of September 1993, the Advisory Commission on Environment (Comisión Asesora Ambiental (CAAM)) is responsible for setting direction in environmental policy and ensuring consistency among sectoral agencies. This Commission is vested with the responsibility of coordinating the activities of other commissions active in the environment sector, and specifically with the Permanent Commission for the Galapagos. Provisions have been made within the technical cooperation to ensure close coordination with the CAAM.

C. Other related activities

- 1.15 The Permanent Commission has initiated preliminary discussions with the European Community seeking support for complementary studies in social and productive sectors of the Galapagos. The proposed technical cooperation is self-contained and does not depend on these activities. However, should the results become available during execution, they would be taken into consideration.

- 1.16 The World Bank has recently approved financing under its Global Environmental Facility (GEF) for equipment, technical assistance, and training primarily for the Galapagos National Park and, to a limited extent, the Marine Resources Reserve. The feasibility study will also take the activities of the GEF program into consideration so as to insure that efforts will not be duplicated.

D. Bank strategy in the sector

- 1.17 Environmental protection is one of three principal areas of the Bank's strategy for Ecuador, as outlined in the Country Programming Paper. The strategy emphasizes the improvement of environmental regulation and protection in two main areas: (a) environmental policy and strategy development, focusing on the improvement of land regulation and supervision in the context of appropriate land use practices and prudent development of tourism activities; and (b) development of environmental institutional and monitoring capabilities, strengthening of environmental management capabilities at a sectoral level, including technical assistance in developing execution, monitoring and zoning mechanisms toward land protection and other renewable resources. The proposed technical cooperation and the investment program that would ensue from it further the Bank's strategy by strengthening the institutional framework and capabilities for environmental management in the Galapagos while also addressing environmental deterioration in an area of recognized national and international significance.
- 1.18 In March 1993, the Bank approved Technical Cooperation ATN/JF-4205-EC with the purpose of assisting the Government in institutional strengthening in environmental planning. National environmental norms and procedures are to be established for key development sectors.
- 1.19 On April 9, 1994 the contract was signed for loan 913/SF-EC to support Ecuador's Coastal Resources Management Program, which is aimed at promoting sustainable development of the continent's coastal environment.
- 1.20 The joint decision was taken by the Government of Ecuador and the Bank to not include the Galapagos in the above operation by virtue of the unique ecological, social and institutional conditions of the Archipelago. It was also concluded that the activities that would eventually have to be financed in the Galapagos were of sufficient magnitude to justify a separate loan operation. In the meantime, integrated environmental management of the Galapagos has become an urgent and timely priority in light of continued tourism growth and environmental trends.

E. The investment program

- 1.21 The Government of Ecuador has recognized that administrative, operational and technical capacities of local organizations will have to be strengthened if the Comprehensive Plan for Tourism

Management and Conservation and the Management Plan for the Galapagos Marine Resources Reserve are to be implemented cost-effectively and in a timely manner. To meet these ends the Government has had under consideration an investment program for the Integrated Environmental Management of the Galapagos.

- 1.22 The investment program under consideration for eventual Bank financing would consist of three components:
  - a. Land use planning and environmental sanitation for three municipalities;
  - b. Management of the Galapagos Marine Resources Reserve; and
  - c. Institutional strengthening and development for integrated environmental management of the Galapagos.
- 1.23 The expected duration of Bank financing for the investment program would be five years during which time permanent institutional arrangements and financial mechanisms would be introduced to ensure the long-term sustainability of the program.
- 1.24 The Government, through its Consejo Nacional de Desarrollo (CONADE) formally requested the assistance of the Bank in designing and financing an Environmental Management Program for the Galapagos in a letter dated June 2, 1993.
- 1.25 The types of investments which could be included in the loan were discussed in a preliminary manner with the Permanent Commission for the Galapagos and its members in November 1993. However, detailed designs and a complete feasibility assessment are needed for each component in order to proceed with the Bank's analysis and financing of the proposed program.

## II. OBJECTIVES

- 2.1 The purpose of the technical cooperation is to design and assess the feasibility of an Integrated Environmental Management Program for the Archipelago of the Galapagos. This will be undertaken in close consultation with the institutions responsible for and the local groups affected by land use planning, urban development and natural resources management of the area.
- 2.2 The specific objectives of the technical cooperation are to:
  - a. Design a coordinated program of investments to implement the Comprehensive Plan for Tourism Management and Conservation of the Galapagos and the Marine Resources Reserve management plan;
  - b. Propose an effective institutional structure for integrated environmental management of the Galapagos and establish the

corresponding needs for rationalizing the role and strengthening existing institutions;

- c. Build commitment to integrated environmental management of the Archipelago through the participation of national and local organizations, island residents, the private sector and other groups in project preparation; and
- d. Assess the socio-economic, financial, institutional, legal and environmental feasibility of a Bank-financed operation for environmental management in the Galapagos.

### III. PROJECT DESCRIPTION

#### A. Specific activities

- 3.1 The geographic scope of the technical cooperation will be: (a) the urban and rural areas outside the Galapagos National Park (which are having an impact on conditions in the Park); and (b) the Galapagos Marine Resources Reserve. Special attention will be directed at strengthening those institutions with a role in integrated environmental management -- particularly their operational capacity for environmentally-sound land use planning and natural resource management. In determining needs and priorities, consideration will be given to on-going assistance programs for the Galapagos in order to avoid duplication.
- 3.2 The technical cooperation would consist of the following two components:
  - 1. Design and feasibility study 1/
- 3.3 Based on a preliminary proposal submitted by the Government the sub-components to be further designed and assessed during the study would include:
  - a. **Land use planning and environmental sanitation:** (i) administrative reforms for municipal land use planning and zoning consistent with the policies for controlling urban growth; (ii) environmental controls for municipal development; and (iii) improved systems for public sanitation (solid waste disposal, wastewater treatment, water supply).
  - b. **Management of the Galapagos Marine Resources Reserve:** (i) marine fisheries management and conservation; (ii) control of land-based and maritime (harbor) sources of pollution; (iii) maritime surveillance and enforcement; (iv) environmental monitoring system and applied investigations for marine resources management; (v) implementation of environmental controls and

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1/ See Annex III-1 for the Terms of Reference of the feasibility study.

management measures for tourism and marine fisheries; and (vi) integration of traditional user groups in marine conservation.

- c. **Institutional development and strengthening:** (i) proposal for an institutional structure for integrated environmental management; (ii) strengthening of the network of national and local institutions responsible for integrated environmental management and development in the Archipelago (e.g., INGALA, Dirección General de la Marina Mercante (DIGMER), Corporación Ecuatoriana de Turismo (CETUR), the Charles Darwin Foundation and others) through technical assistance, training and administrative reforms; (iii) improved Environmental Impact Assessment (EIA) procedures; (iv) legislative and regulatory reforms for environmental management and development control of the Archipelago; and (v) mechanisms for ensuring the financial sustainability and cost recovery for environmental management investments and programs.

- 3.4 The technical, environmental, socio-economic, financial and legal feasibility of the aforementioned three sub-components would also be analyzed during the study.

## 2. Support for integrated environmental management

- 3.5 Activities of this component include the following two sub-components:

- a. **Technical assistance to the Permanent Commission:** Three individual consultants will provide technical assistance to the Permanent Commission in the following areas: regional development policy planning for the Galapagos, legislative and regulatory reforms and the environment. 2/
- b. **Local demonstration projects and community participation:** Small-scale demonstration activities (e.g. beach clean-up) will be aimed at rallying support for environmental management. These demonstration activities will encourage specific target groups, such as local fishers and tour boat operators, to contribute to the design of the program while also receiving information on environmentally-sound practices. The operation would also finance the production of public awareness materials and community events. The criteria and procedures for selecting the demonstration activities in environmental management will be presented to the Bank for prior approval. 3/

- 3.6 A participatory planning process will take place during the technical cooperation under the direction of the Permanent

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2/ See Annexes III-2, III-3 and III-4 for Terms of Reference of individual consultants.

3/ Condition prior to first disbursement.

Commission for the Galapagos and its members. As described further in the terms of reference (Annex III-1), this process will entail periodic workshops for local and inter-agency consultation, meetings, information dissemination and similar activities offering a forum for local participation. The study team is expected to provide technical support and to incorporate the results of this consultation process in the technical design of the program.

B. Execution of the program

- 3.7 The Permanent Commission for the Galapagos, through the Executive Coordinator of its Secretariat, will be responsible for the overall direction and coordination of the technical cooperation on behalf of the Government of Ecuador.
- 3.8 An experienced regional/environmental planning firm, a consortium, or a specialized institution would be contracted to undertake the design and feasibility study. The Government of Ecuador has requested that the Bank be responsible for contracting and administering the design and feasibility study as well as the individual consultants to provide the technical assistance to the Permanent Commission.
- 3.9 The Permanent Commission will appoint a technical working group, comprised of some of its members, to serve as the day-to-day counterpart for the team contracted for the feasibility study as well as for the individual consultants. 4/ The technical working group will also be responsible for inter-agency and local consultation during project preparation.
- 3.10 The funds for the community demonstration projects will be administered by the Advisory Commission on Environment (Comisión Asesora Ambiental (CAAM)), through the Permanent Commission. The two commissions will sign an inter-institutional agreement for the purpose of describing the responsibilities of each in the execution of the program. 5/
- 3.11 The basic responsibility for supervision of the technical cooperation will rest with the Bank's Project Team supported by the Bank's Country Office in Ecuador.
- 3.12 The technical cooperation will have an eleven month execution period and a twelve month disbursement period as described in the work schedule in Annex III-5.

C. Project budget and financing

- 3.13 The total cost of the technical cooperation is estimated at US\$660,000. The Bank's contribution would be approximately the

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4/ Condition prior to first disbursement.

5/ Condition prior to first disbursement.



equivalent of US\$600,000 in yen, that is up to an amount of 64.2 million yen, non-reimbursable from the Japan Special Fund. The local counterpart would be the equivalent of US\$60,000. The following table shows the costs, subdivided into categories and financing sources. A detailed annotated budget appears in Annex III-6.

(equivalent US\$)

BUDGET CATEGORIES	BANK	LOCAL	TOTAL
1. Consulting Firm (International)			
1.1 Fees	368,500	-	368,500
1.2 Equipment	5,000	-	5,000
2. Individual Consultants (Local)			
2.1 Compensation (3 specialists)	65,000	-	65,000
2.5 Official Travel	11,000	-	11,000
6. General Support			
6.1 Premises	-	10,000	10,000
6.9 Other-Local Travel	-	10,000	10,000
7. Publications			
7.3 Printing & Dissemination	-	5,000	5,000
97. Special Program - Community Demonstration Projects	110,500	25,000	135,500
98. Contingencies	40,000	10,000	50,000
TOTAL	600,000 <sup>1/</sup>	60,000	660,000

<sup>1/</sup> Equivalent to 64.2 million yen from Japan Special Fund. ¥10/ equals US\$1.00.

- 3.14 The Bank's contribution, which will be disbursed in yen, would be used to finance the following items for (a) the international consulting firm or specialized agency which will carry out the feasibility study: salaries (46 person-months of professional services), overhead, international travel, air fare to Galapagos Islands, per diem, fuel for inter-island travel, office rental in Quito and purchase of computer equipment which would become the property of the Permanent Commission upon the completion of the technical cooperation; (b) the three individual consultants who will provide technical assistance to the Permanent Commission: fees, air fare and per diem to the Galapagos; (c) part of the special program-community demonstration projects; and (d) part of the contingencies.
- 3.15 The local counterpart contribution would be used for the following logistical support: (a) office space in the Galapagos; (b) use of official vehicles both in Quito and the Galapagos and boats for inter-island travel; (c) costs of printing and distributing documents; (d) part of the costs of the special program-community demonstration projects; and (e) part of the contingencies.

#### IV. BENEFITS AND RISKS

- 4.1 The technical cooperation is expected to yield positive environmental benefits with respect to: (a) operational definition of existing environmental policies and regulations from the non-park lands and the Marine Resources Reserve, specifically in fisheries conservation, pollution prevention and tourism; (b) enhanced local support, particularly among residents and small businesses, for environmental management in non-park lands and the Marine Resources Reserve; (c) enhanced institutional framework, including inter-agency agreements, for cooperative management of the Archipelago; and (d) practical local experience in small-scale activities in support of environmental management. The program resulting from the technical cooperation would yield long-term benefits in environmental quality, optimal resource allocation and financial sustainability.
- 4.2 Given the fiscal situation of the Government of Ecuador and the limited resources of the institutions operating in the Galapagos, the timely availability of sufficient local counterpart funding for both the technical cooperation and the investment program proposed for Bank financing are areas of potential concern. Insofar as this operation, the risk has been kept to a minimum since local counterpart has been limited to logistical support. With regard to the investment program, this issue and the possibility of relying on local contributions from communities and sources external to the Government will be addressed during the feasibility study.
- 4.3 There are different interests at stake in the development and conservation of the Archipelago, including those of island residents, tourism operators, environmental organizations, national and international tourists, the scientific community and policy makers. Yet most groups recognize the need for controlling growth and sound environmental management. The range of options could lead to conflicts and controversy, unless there is a sustained effort to consult and involve user groups in the definition of the program. The technical cooperation should result in clearly articulated consensus with regard to environmental management actions. To help encourage this consensus, the technical cooperation would include opportunities for active participation of user groups in practical exercises in coastal and marine resource management.

#### V. EVALUATION

- 5.1 The evaluation of the technical cooperation will be based on the degree to which the programmed activities are being achieved. To this end, the Permanent Commission will be required to submit to the Bank, together with each report to be submitted by the specialized institution or consulting firm, a progress report on the activities carried out during each phase, including the status of the community-based demonstration activities.

5.2 The following reports will be submitted:

- a. Initial report: Two months after commencement of work;
- b. Mid-term report: At the conclusion of the pre-feasibility phase-four months after commencement of activities; and
- c. Draft final report: Eight months after beginning of work.

VI. TIME REQUIRED FOR TECHNICAL COOPERATION PREPARATION AND EXECUTION

- 6.1 It is estimated that the preparation of this technical cooperation up to the signature of the Agreement will have required some 17 weeks, of which 12 weeks correspond to Bank Headquarters staff, 2 weeks to Country Office staff and 3 weeks to consultants.
- 6.2 Furthermore, it is estimated that the Bank's supervision of project execution will require approximately 18 weeks, of which 8 weeks correspond to Bank Headquarters and 10 weeks to Country Office staff.

## DESIGN AND FEASIBILITY STUDY

### TERMS OF REFERENCE

#### I. BACKGROUND AND PURPOSE

- 1.1 The Government of Ecuador has asked the Inter-American Development Bank (Bank) to finance a Integrated Environmental Management Program for the Archipelago of the Galapagos. The investment Program under consideration would consist of three components as follows: (a) land use planning and environmental sanitation; (b) management of the Galapagos Marine Resources Reserve (GMRR); and (c) institutional strengthening and development for integrated environmental management. In order to proceed with the analysis and approval of the Program, the Bank requires additional information on the scope, activities, investments, costs and execution of each component.
- 1.2 The purpose of this study is to design and assess the feasibility of the Program and its components.

#### II. SCOPE OF SERVICES AND TASK DESCRIPTION

- 2.1 The duration of the feasibility study is expected to be approximately 9 months. The study will be undertaken in two phases: (a) a pre-feasibility analysis; and (b) detailed design and feasibility assessment of each component in line with the requirements of the Bank. The study team will be based in Quito and Santa Cruz Island and will work under the direction of the Permanent Commission for the Galapagos and its Executive Secretariat.
- 2.2 To facilitate inter-agency coordination, the Permanent Commission for the Galapagos will assign a Technical Working Group which will report to the Executive Coordinator of its Secretariat and work with the study team for the duration of the study. In addition to serving as the counterpart to the study team, the Technical Working Group will coordinate the local consultation process.
- 2.3 The major tasks to be undertaken during the study are as follows:
  - A. Land use planning and environmental sanitation
- 2.4 Working closely with the Technical Working Group, the study team will first undertake a review of existing land use plans and pending proposals in urban development for the three municipalities of the Galapagos: San Cristobal, Santa Cruz, and Isabela. Several recent and on-going studies are expected to contribute basic data for assessing priorities in the non-park lands. The intent is to use this information to the extent possible. An initiation

workshop will be held in the three municipalities to launch this and the other activities of the pre-feasibility phase.

2.5 The following tasks will be completed during the pre-feasibility phase:

- a. Review and evaluation of the existing urban-rural plans for each municipality, in light of the **Comprehensive Plan for Tourism Management and Conservation of the Galapagos**. Specific needs for updating the urban-rural plans of each municipality will be established.
- b. Review of urban growth trends, rural land use change and demographics based on available studies. In undertaking this task, the study team will collect available maps, aerial photography and satellite imagery in order to compile maps illustrating trends in land use change.
- c. Diagnostic of existing environmental sanitation systems (drinking water supply, wastewater collection and treatment, solid waste collection and disposal). The diagnostic will address: conditions of the existing infrastructure in relation to needs and the current policy of rationalizing systems without stimulating urban growth; operation and maintenance problems, quality of services; and financial sustainability. In undertaking this task, the study team will collect and review recent engineering pre-feasibility and feasibility studies for sanitation infrastructure available for the three municipalities. 1/ Proposals which have been submitted for financing to the *Programa de Desarrollo Municipal (PDM)* of the Central Bank will also be reviewed.
- d. Analysis of existing and projected demand for environmental sanitation services.
- e. Review of existing agreements for environmental sanitation services.
- f. Institutional analysis of existing responsibilities for urban environmental sanitation services.
- g. Environmental carrying capacity and sensitivity analysis of the three municipalities. 2/ Using the results of recent baseline studies and available monitoring data, the study team

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1/ A preliminary inventory of pending proposals and requests for urban sanitation and development projects appears in Appendix 1 of this Annex.

2/ The specific methodology for these analyses will be presented to the Permanent Commission for the Galapagos and the Bank for approval.

will analyze environmental carrying capacity in terms of: (i) surface and groundwater supply and quality; (ii) soils, vegetation cover and watersheds; (iii) natural habitats, including coastal and marine ecosystems; and (iv) contamination risks associated with solid waste, wastewater and other sources. A sensitivity analysis will also be undertaken to establish the key environmental issues and concerns for each municipality.

- 2.6 Having completed the above, the study team will prepare an environmental profile consolidating the results of the analyses for each municipality. These profiles will be accompanied by large-scale maps (e.g., 1: 10,000 scale) summarizing: land use patterns and trends, carrying capacity, environmental sensitivity and environmental sanitation priorities. The environmental profiles will serve as a basis for local consultation during the pre-feasibility stage.
- 2.7 The results of the pre-feasibility phase will be presented at local meetings and inter-agency workshops to be coordinated by the Permanent Commission for the Galapagos. An agreement will be reached on: (a) criteria for selecting environmental sanitation works eligible for financing under the eventual investment Program; (b) a list of priority environmental sanitation works to be designed during the next phase of the study <sup>3/</sup>; (c) a list of potential demonstration activities in community-based management; and (d) needs for institutional strengthening and regulatory reforms at the municipal level.
- 2.8 Having confirmed priorities, the study team will design the land use/urban planning activities and environmental sanitation solutions to be financed by the investment Program. The proposals will be derived from the diagnostic of existing systems, the environmental profiles of each municipality and the results of local consultation. The specific proposals as well as the overall strategy for each municipality shall be consistent with current policies for maintaining urban services and land use within carrying capacity limits for the Archipelago.
- 2.9 For the land use planning activities, the study team will prepare detailed specifications and cost estimates for updating the urban-rural zoning plans for the three municipalities in an integrated manner based on the environmental profiles. This will include the formulation of municipal ordinances, restrictive zoning, tariff schemes performance standards, by-laws and other regulatory measures controlling urban development and land use consistent with the policies of the Comprehensive Plan for Tourism Management and Conservation of the Galapagos and Executive Decree No. 1731. In preparing these specifications, the team will determine the need to

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<sup>3/</sup> A definitive list of priority works to be designed will be approved by the Permanent Commission and the Bank.

acquire new aerial photography or imagery required for updating zoning schemes and cadastral surveys. The possibility of including the land use plans to a Geographic Information System (GIS) will be examined.

- 2.10 The study team will prepare specifications for the preparation of regional/specific master plans for environmental sanitation as called upon in the Comprehensive Plan for Tourism Management and Conservation of the Galapagos.
- 2.11 Detailed designs will be prepared for the following types of environmental sanitation works for each municipality based on the analysis of needs and priorities:
  - a. Water supply and treatment;
  - b. Wastewater collection and treatment; and
  - c. Solid waste collection, disposal, including the possibility of recycling schemes.
- 2.12 For each sub-component, the study team will produce detailed engineering designs for specific works based on actual site conditions as required and approved by the Bank. Where appropriate, existing engineering designs will be updated. The design alternatives shall focus on rationalizing systems consistent with the policies of the Comprehensive Plan for Tourism Management and Conservation of the Galapagos for controlling urban growth and migration. Criteria for selecting works based on cost-effectiveness and environmental considerations will also be prepared. The study will also yield a description of sanitation and pollution control targets for each municipality; technical alternatives, institutional arrangements for execution; a calendar and detailed cost estimates for execution; and cost projections for operation and maintenance. The study team will propose options for executing and maintaining the sanitation works for further consideration during the feasibility analysis. Attention will be given to those approaches that facilitate the participation of communities, user groups and the private sector in execution. The study team will identify complementary activities such as the organization of user groups, extension and public health education aimed at promoting local stewardship.
- 2.13 Possible institutional arrangements for the execution of land use planning activities and sanitation works will be identified in step with technical design. The intent is to propose several schemes consistent with the policies and coordination mechanisms set out in Executive Decree No. 1731 and to compare their respective strengths and weaknesses with respect to Program execution.
- 2.14 Engineering solutions for sanitation works will be presented at local meetings and inter-agency workshops to be coordinated by the Permanent Commission for the Galapagos at the conclusion of the

design and feasibility phase. An agreement would be reached on: (a) selected alternatives for investment; (b) land use and master planning procedures and responsibilities in the municipalities; and (c) priorities for institutional strengthening, development and regulatory reforms at the municipal level.

B. Management of the Galapagos Marine Resources Reserve

- 2.15 The work for this component will begin with the preparation of operational plans for the Galapagos Marine Resources Reserve (GMRR), building on the results of recent studies. This will be followed by the design of activities aimed at improving operations within the GMRR. The intent is to support implementation of the policy targets established in Executive Decree No. 1731 published May 9, 1994.
- 2.16 Working closely with the Technical Working Group and the Charles Darwin Foundation, the study team will identify priority needs for marine resources management within the GMRR. The emphasis is expected to be on: marine fisheries conservation and management; coastal pollution control; maritime surveillance and enforcement; and applied research focused on issues and solutions for marine resource protection. In determining priorities, the study team will review readily available information:
- a. Historical trends and current patterns in renewable marine and coastal resource use (i.e., fisheries, other marine products, maritime transportation, diving) and conflicts;
  - b. Coastal water quality (point and non-point sources of pollution, ambient conditions and trends);
  - c. Existing coastal and marine resource management policies, regulations, plans and institutional arrangements (i.e., fisheries management regulations, applied research, extension activities); and
  - d. Existing and proposed technical assistance programs, environmental studies and other investigations for the GMRR including activities recently approved for financing under the Global Environment Facility (GEF).
- 2.17 The study team will compile available aerial photography, satellite imagery and mapped data for the coastal zone. The usefulness of these existing data will be determined on the basis of their scale, geographic coverage, timeliness and quality. Possible applications include updating of the zoning scheme for the GMRR; and establishment of special recovery or recruitment zones and coastal setbacks. Monitoring data are also required for assessing the environmental impacts of the sanitation systems proposed for financing under the eventual investment Program.



- 2.18 Priority needs for the GMRR will be discussed at technical workshops hosted by the Permanent Commission for the Galapagos. An agreement will be reached on the scope and objectives of at least four operational plans for the GMRR 4/:
- a. Fisheries management and conservation;
  - b. Coastal pollution control, including emergency response and contingency planning;
  - c. Maritime surveillance and enforcement; and
  - d. Applied marine research.
- 2.19 Having identified priorities, the study team will propose activities and detailed specifications for each operational area (Phase II: Design and feasibility). For example, fisheries management activities recommended to be financed by the eventual investment Program could include: baseline oceanographic and biological surveys, field monitoring systems and equipment, fisheries extension, marine environmental education, fisheries recovery zones, and community-based fisheries management projects.
- 2.20 Activities in coastal pollution control to be financed by the eventual investment Program could include: baseline water quality surveys and monitoring, upgrading of field sampling equipment and laboratory facilities, vessel effluent holding facilities, sediment and pesticides control, emergency response and contingency planning. The activities eligible for financing will be closely related with the environmental sanitation works financed under other components of the Program.
- 2.21 The coastal surveillance and enforcement system could include activities such as: maritime surveillance equipment, operational manuals, and training.
- 2.22 The applied research program could include activities such as: establishment of an applied research fund, upgrading of research equipment and training. The emphasis will be on applied investigations needed to resolve key resource management issues and support the targets set in Executive Decree No. 1731.
- 2.23 For each operational area, the study team will also prepare a description of resource protection targets; methodologies; institutional arrangements for execution; a 5-year calendar and detailed cost estimates for execution; and cost projections for continuation of the Program. Recommendations for the active participation of private sector organizations and community groups will form part of the design. To this end, the study team will

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4/ These areas of focus were discussed in November 1993 and will need to be updated in light of the activities to be financed by the GEF.

identify complementary activities such as the organization of user groups and extension aimed at promoting local stewardship.

- 2.24 Working closely with the Technical Working Group, the study team will propose an overall institutional scheme for operational management of the GMRR. This will be consistent with the policies and coordination mechanisms set out in Executive Decree No. 1731. The team will also propose the basic elements for inter-agency agreements for specific operations in the GMRR (i.e., for fisheries management, enforcement).
- 2.25 At the conclusion of the feasibility phase, the proposed investments will be presented at working sessions for discussion and approval. Agreements would also be reached on the preferred institutional arrangements for Program execution.

C. Institutional strengthening and development

- 2.26 The study team will undertake a baseline assessment of the technical, managerial and administrative capacities of the institutions likely to participate in the execution of the investment Program. As a minimum, the assessment will encompass the following network of institutions:
- a. **Regional institutions responsible for planning, urban development and the GMRR:** i.e., the Permanent Commission for the Galapagos and its members, including the Instituto Nacional Galapagos (INGALA), the Charles Darwin Foundation, the National Park Service of the Instituto Ecuatoriano Forestal y de Areas Naturales y Vida Silvestre (INEFAN); Dirección General de la Marina Mercante (DIGMER), and Corporación Ecuatoriana de Turismo (CETUR) and others.
  - b. **Local municipal governments and community organizations:** Local municipal authorities in San Cristobal, Isabel and Santa Cruz. This shall also include a survey of community and private sector organizations in these municipalities.
- 2.27 The following will be assessed for each institution based on recently conducted studies and field interviews:
- a. Legal framework of the institution including a description of responsibilities, jurisdiction in land use, urban planning and marine resources management, objectives and strategies of each.
  - b. Organizational structure of the institution including a brief description of responsibilities and activities of all major organizational units within the structure (i.e., departments, divisions, etc.) as well as the institution's structural relationship with other related government institutions.

- c. Staffing and salary levels in each major organizational unit within each institution, including a breakdown of administrative and professional employees as well as the functional skill background of the professional employees (i.e., biologists, engineers, planners, technicians etc.). Identify the number of permanent and temporary employees in the administrative and professional employee categories.
  - d. Technical data management capabilities/resources related to environmental management including: historical data bases, on-going data collection, analytical capabilities and equipment.
  - e. Functions and capabilities related to regional planning, environmental impact assessment (EIA), urban services, environmental sanitation, and marine resources management.
  - f. Current year budget and future year budget projections as well as prior year budget execution reports. Budgetary information should be sufficiently detailed as to analyze costs for personnel, other operations and maintenance inputs and capital expenditures.
  - g. Nationally and internationally funded projects that are currently in execution or which it expects to execute during the next three to five years. For each project, identify the source of funding, the amount of funding, project activities, relation to shorezone management and project management approach.
- 2.28 The study team will propose an effective institutional structure for execution of the integrated environmental management Program. The proposal will be based on: (a) the policies and coordination mechanisms set out in Executive Decree No. 1731; (b) the baseline assessment of those agencies directly involved in environmental management and regional administration as listed above; and (c) opportunities for private sector and community involvement. The objective is to create a sustainable institutional framework for integrated environmental management.
- 2.29 The study team will propose specific institutional strengthening activities for each of the key institutions participating in program execution. These activities may include, for example: (a) improved procedures for approving and controlling development (including implementation of an improved concession system); (b) EIA guidelines and procedures; (c) on-the-job and specialized professional training in EIA and marine resources management (e.g., research, monitoring, habitat management, inventory, policy formulation, planning, public education); (d) technical assistance; (e) design and installation of geographic and project management information systems; (f) acquisition of equipment and specialized technology; and (vii) formal education in disciplines related to urban and regional planning, marine resources management and environmental sanitation.

- 2.30 The study team will identify and compare alternative cost recovery mechanisms as a means of ensuring the financial sustainability of the environmental management Program. Two specific cost recovery proposals will be prepared for consideration by the Permanent Commission and its members: (a) environmental sanitation services; and (b) user fee structure for the GMRR. Potential options include user charges, tariffs for sanitation services, surcharges on land use or income taxes of residents and/or businesses, or other schemes identified by the study team during their work.
- 2.31 Based on the above, the study team will prepare a consolidated institutional proposal containing at least the following elements: (a) a recommended institutional structure for the execution of the Program proposed for Bank financing; (b) draft inter-agency agreements, contracts, or other recommended mechanisms of execution; (c) a list of specific institutional responsibilities for executing each component of the Program; (d) EIA guidelines and procedures; (e) recommendations for involving local environmental non-governmental organizations (NGO's) and the private sector in Program activities; (f) recommended alternatives for recovering operation and maintenance costs for works; and (g) a recommended set of institutional strengthening activities, a calendar of execution, and cost estimates.

D. Feasibility analysis

- 2.32 The study team will assess the technical, socio-economic, financial, institutional, legal and environmental feasibility of each component of the Program and will consolidate the information necessary for the Bank's analysis of the operation.
- 2.33 In assessing technical feasibility, the study team will address whether the eligibility criteria proposed for including works in the Program are sound; alternatives considered; demonstrated experience in implementing technical solutions for each component; justification for the Program's dimension; and how the Program relates to the expressed needs of the affected coastal communities and to the relevant policies of existing plans. The study team will demonstrate that sufficient opportunities have been included in the Program for the participation of traditional user groups, communities and women.
- 2.34 The study team will prepare an EIA of the proposed Program as required by the Bank. This assessment will contain: a description (quantitative where possible), of the Program's expected environmental benefits (i.e., recovery of stocks, water quality); an evaluation of the possible negative impact of the Program, particularly the physical, ecological and social impacts of the sanitation works and fisheries management activities; recommended prevention and mitigation measures along with executing agencies and cost estimates. Special attention will be directed at the potential indirect or induced impacts of improving sanitation services on urban land use, tourism growth, and migration trends.

- 2.35 The study team will also prepare a socio-economic evaluation of the proposed Program consistent with the Bank's requirements for natural resources management projects. It will encompass: a description of targeted beneficiaries and projections of the expected benefits; a justification of principal activities and works, based on economic priority and/or degree of resource degradation and risk; recommendations for market-oriented incentives for coastal pollution control, solid waste management, and marine fisheries conservation; and recommendations for additional socio-economic data collection and analysis. As part of the socio-economic analysis, the study team will identify the direct and indirect beneficiaries for each component of the Program and globally and determine the distributional impact of the Program benefits.
- 2.36 In assessing institutional feasibility, the study team will address the technical, managerial, administrative and financial capacities of the institutional structure recommended for Program execution. It will also be necessary to evaluate risks due to delayed Program implementation in light of current institutional capacity. To this end, reliable performance indicators will be established for monitoring Program execution and early detection of potential delays caused by institutional, managerial and financial capabilities and other uncertainties.
- 2.37 The legal analysis will address the legal feasibility and implications of all proposed measures, institutional adjustments, regulatory mechanisms, land use control measures, cost-recovery schemes, etc.
- 2.38 The results of the feasibility analysis will be presented at working sessions to be hosted by the Permanent Commission for the Galapagos. Agreements would also be reached on the preferred institutional arrangements for Program execution.

### III. EXPECTED RESULTS

- 3.1 The design and feasibility study is expected to produce the following results which are fundamental for integrated environmental management of the Archipelago:

#### A. Phase I (Pre-feasibility)

1. Compilation and assessment of data available for integrated environmental management of the Archipelago;
2. Environmental profiles and environmental sanitation priorities for all three municipalities;
3. Operational priorities for the GMRR;

4. Institutional assessment of regional and local institutions; and
5. Inter-agency and local consensus on: investment priorities, institutional responsibilities, and local consultation process.

B. Phase II (Design and feasibility)

1. Detailed designs of land use/urban planning activities and environmental sanitation works (water supply, wastewater, solid waste services);
2. Detailed designs of operations for the GMRR (fisheries management, coastal pollution control, maritime surveillance and enforcement, applied research);
3. Proposed institutional structure for the execution of the Environmental Management Program;
4. Detailed proposal for institutional strengthening activities;
5. Feasibility assessment (technical, environmental, socio-economic, legal, institutional and financial).

IV. QUALIFICATIONS

- 4.1 International consulting firm, consortium, or specialized institution with demonstrated experience in integrated environmental management and regional planning. The consulting firm, consortium or specialized institution should have the following areas of expertise: regional and urban planning, coastal zone management, tropical marine resources management, environmental engineering, pollution control and water quality monitoring, land use and environmental law, institutional analysis and design and natural resources economics. Demonstrated experience in undertaking integrated environmental projects in Ecuador, including the Galapagos is required.

V. PERSONNEL REQUIRED

- 5.1 The specialized institution or consulting firm will assign a project team leader and the number of consultants with the appropriate professional profiles necessary to accomplish the tasks and deliver the products described below.
- 5.2 An estimated total of 46 person-months of specialized services in environmental management will be required to undertake the feasibility study. The following are the areas of technical expertise for the feasibility and design study:
  - Regional planner and study team leader (9 months)
  - Environmental engineer (8 months)

- Urban planner (4 months)
  - Marine resources management specialist (8 months)
  - Environmental planner/EIA specialist (4 months)
  
  - Fisheries biologist (1 month)
  - Water quality specialist/oceanographer (1 month)
  - Sociologist (3 months)
  - Institutional analyst (2 months)
  - Natural resource economist (2 months)
  - Financial analyst (4 months)
- 5.3 The professional profiles and terms of reference for the specific responsibilities of the specialists are available in the Bank's technical files.
- 5.4 Given the need for close consultation and participation, it is expected that all the work will be conducted in Ecuador with at least 40% of the time spent in the Archipelago.

## VI. SCHEDULE

- 6.1 The duration of the study is expected to be 9 months. The pre-feasibility phase would take approximately 4 months and the design and feasibility phase would require 5 months. A tentative schedule of activities appears in Annex III-5 of the Plan of Operations.

## VII. DELIVERABLES

### A. Work plan (inception report)

- 7.1 A work plan will be submitted eight weeks after initiation of the study. This work plan will contain:
- a. Detailed calendar of activities for the design and feasibility study, indicating the coordination with local and inter-agency consultation activities;
  - b. Updated inventory of land use and urban plans, regulations, ordinances, related studies and proposed environmental sanitation projects for the three municipalities;
  - c. Proposed methodology for the environmental carrying capacity and sensitivity analysis;
  - d. Annotated outline for the environmental profile of the three municipalities; and
  - e. Proposed methodology for the institutional assessment.

### B. Mid-term Report

7.2 A mid-term report will be submitted by the study team four months after initiation of the study. This report shall contain:

- a. Results of the local consultation meetings (pre-feasibility phase);
- b. Preliminary list of environmental sanitation works and marine resource management activities recommended as the indicative sample for detail design and cost estimates;
- c. Preliminary program and list of participants for a national seminar on alternative technical solutions;
- d. Preliminary proposal for an institutional structure for Program execution;
- e. Preliminary findings of cost-recovery options;
- f. Preliminary assessment of the technical and institutional feasibility of incorporating a GIS in the Program;
- g. Preliminary assessment of the feasibility of each component of the Program to be proposed for Bank's financing, including alternative project scenarios with a rough comparative cost estimate for each; and
- h. A complete and appropriate data set to develop the economic model for the feasibility analysis.

C. Draft Final and Final Reports

7.3 A consolidated draft final report shall be submitted within 8 months of the study's starting date. This report will contain annexes with draft results of the tasks performed by the study team, methodologies for analysis, findings, conclusions and recommendations. The report will propose a program budget for each of the components of the Program as well as for the administration of the Program. An indicative outline of the consolidated draft final report appears in Appendix 2 of this Annex. The final report shall incorporate the observations made by the Bank and the Government of Ecuador and shall be submitted four weeks after receiving these comments.

7.4 All products will be prepared in consultation with the Technical Working Group coordinated by the Permanent Commission for the Galapagos and its members. Products are to be submitted to the Project Team by way of the Bank's Country Office in Quito.



**INVENTARIO DE PROYECTOS PENDIENTES Y PROPUESTOS PARA GALAPAGOS**

**I. INSTITUTO NACIONAL GALÁPAGOS. INGALA**

- 1.1 Mantenimiento vial y pavimentación. Convenio Ministerio de Obras Públicas (MOP).
- 1.2 Transporte Marítimo Inter-Islas. Mantenimiento y operación de lanchas.
- 1.3 Gabarra en Canal de Itabaca. Proyecto existente sin financiamiento.
- 1.4 Desalinizadora Puerto Ayora. Mantenimiento. Compra de membranas sin financiamiento (US\$20.000).
- 1.5 Pasteurizadora Santa Cruz. Operación y Mantenimiento.

**II. MUNICIPIO DE SAN CRISTOBAL**

- 2.1 Alcantarillado pluvial de Puerto Baquerizo. Prefactibilidad.
- 2.2 Encauzamiento de aguas lluvias. Sectores Playa de Oro (US\$120.000) y Barrio Frío (US\$90.000).
- 2.3 Alcantarillado Sanitario. Mantenimiento, descarga submarina y cárcamo de bombeo (pozo y nuevo equipo). Financiamiento solicitado al Banco del Estado.
- 2.4 Recolección, manejo y disposición de basura. Proyecto del Instituto Ecuatoriano de Obras Sanitarias (IEOS)-Programa de las Naciones Unidas para el Desarrollo (PNUD).
- 2.5 Captación, conducción y almacenamiento de agua. Proyecto Cerro Gato. Incluye sistema hidroeléctrico alterno para potabilización. Prefactibilidad.
- 2.6 Ampliación de redes de agua potable en nuevos sectores de Puerto Baquerizo. Prefactibilidad.
- 2.7 Puente sobre vía en el sector de Playa de Oro. Prefactibilidad.
- 2.8 Adoquinamiento de vías prioritarias, 7 km.
- 2.9 Ampliación del Mercado de Puerto Baquerizo. Proyecto existente (US\$25.000).
- 2.10 Embellecimiento, arborización y parques.

### III. MUNICIPIO DE SANTA CRUZ

- 3.1 Diseño definitivo y factibilidad técnica para sistemas de alcantarillado y agua potable de Puerto Ayora. Existen estudios de prefactibilidad (US\$251.500 diseño definitivo y factibilidad)
- 3.2 Ampliación del muelle de aguas profundas de Puerto Ayora. Doble vía, martillo y 50 m. de extensión. Banco del Estado realiza estudio de prefactibilidad.
- 3.3 Camal de Puerto Ayora. Equipamiento y capacitación de personal (US\$70.000).
- 3.4 Coliseo de Puerto Ayora. Existe diseño del DINADER. (US\$300.000 presupuesto estimado).
- 3.5 Adoquinado de Puerto Ayora y Bellavista (US\$25.000).
- 3.6 Contratos de obras civiles en ejecución:

OBRA	Monto (US\$)
Sala de sesiones, Federación de Trabajadores	8.000
Universidad FACSQ, I Fase	25.000
Casa Comunal de Santa Rosa	17.000
Local para el INFA, I Fase	20.000
Baterías sanitarias en Pelican Bay	12.000
Tanque de agua en El Cascajo	9.000
Aula para escuela de El Camote	5.000

### IV. MUNICIPIO DE ISABELA

- 4.1 Rediseño, ampliación y sustitución de redes de agua potable. Construcción de nuevo tanque elevado de almacenamiento. Sin estudios.
- 4.2 Ampliación y mejoramiento del sistema de alcantarillado sanitario. Actualmente cubre sólo el 40% del área urbana. IEOS está preparando estudios.
- 4.3 Tratamiento previo a evacuación y reubicación de descarga submarina de aguas servidas en Puerto Villamil. Sin estudios.
- 4.4 Construcción del Colegio Fray Agustín de Azkunaga, en Puerto Villamil. Existen estudios. Se está gestionando financiamiento para la I Fase. (US\$100.000).

- 4.5 Sustitución de la lancha municipal. Se está promoviendo la conformación de una empresa de economía mixta para transporte y turismo.

## INDICATIVE REPORT OUTLINE

### I. Program Summary

- A. Background
- B. Problems to be solved
- C. Description of the Program; characteristics, components, objectives and goals
- D. Geographical location
- E. The borrower and executing agencies
- F. Project cost and loan amount
- G. Mechanism for Program execution
- H. Beneficiaries and community participation
- I. Program rationale and justification

### II. Program Description and Costs

- A. Objectives
- B. Justification, description and goals of each component
- C. Geographical location of each component
- D. Beneficiaries of each component
- E. Costs by investment category and component (according to Bank requirements)

### III. Mechanism for Program execution

- A. Executing agencies
- B. Participation of beneficiaries in Program execution
- C. Incentives for beneficiary participation
- D. Mechanism for execution of each component
- E. Participation of women in the activities of the Program
- F. Activity and investment schedules
- G. Mechanisms for execution and supervision of Program's activities
- H. Annual operational plans and schedule for biddings
- I. Managerial programming and monitoring system, including GIS
- J. Risk evaluation and mitigation measures

### IV. The Borrower, Executing Agencies and Other Participating Agencies

- A. The borrower and executing agencies
- B. Other participating agencies

### V. Feasibility Analysis

- A. Technical
- B. Financial
- C. Socio-economic
- D. Institutional
- E. Legal

### VI. Environmental Impact Assessment

## TECHNICAL ASSISTANCE FOR THE PERMANENT COMMISSION

### TERMS OF REFERENCE

#### REGIONAL PLANNER

#### I. BACKGROUND

- 1.1 The Government of Ecuador (GOE) requires the professional services of a regional planner to advise the Permanent Commission for the Galapagos (Permanent Commission) in regional development policies, trends and their relation to integrated environmental management in the Archipelago of the Galapagos.
- 1.2 Pursuant to Executive Decree No. 1731, the Permanent Commission for the Galapagos is vested with the responsibility of promoting, coordinating and supporting environmental management activities in the Galapagos. The Permanent Commission, through its Executive Secretariat, is responsible for introducing, in cooperation with relevant sectoral agencies, specific environmental standards for urban development, tourism and fisheries, consistent with the policies established in the Comprehensive Plan for Tourism Management and Conservation of the Galapagos.
- 1.3 The Inter-American Development Bank (Bank) plans to provide technical assistance to the Permanent Commission by way of this and other individual consultancies to assist in the timely and coordinated implementation of Executive Decree No. 1731 and existing management plans for the Galapagos. A 9-month feasibility study for an integrated environmental management Program is also being financed concurrently with the technical assistance.

#### II. OBJECTIVE

- 2.1 The objective of the consultancy is to provide assistance and policy advice to the Permanent Commission in the coordinated implementation of the Comprehensive Plan for Tourism Management and Conservation of the Galapagos as well as the Management Plan for the Galapagos Marine Resources Reserve. To this end, the consultant shall: (i) assist in the technical review of the feasibility study; (ii) coordinate a participatory planning process aimed at promoting local involvement in environmental management; and (iii) analyze and recommend alternative institutional arrangements for regional planning and administration in the Archipelago.

### III. TASKS

3.1 Working closely with the Executive Coordinator of the Permanent Commission, the regional planning consultant shall undertake the following tasks:

- a. Prepare and circulate for review a 9-month work plan for local consultation/participation concurrent with the design and feasibility study. The work plan shall propose: activities for disseminating information about the study's goals and scope to the three municipalities, local organizations, and target groups; a schedule for consultation workshops; and priorities for community-based demonstration projects consistent with the selection criteria approved by the Bank. This is to be closely coordinated with the work plan for the feasibility study to be prepared by the specialized institution or consulting firm.
- b. Working closely with the feasibility study team, the regional planner shall organize and participate in workshops, inter-agency seminars, public meetings and other consultation events aimed at promoting involvement in program preparation.
- c. The regional planner shall prepare public background material (i.e., brochures, fact sheets) to maintain local authorities informed of the Permanent Commission's activities, the feasibility study's progress as well as technical alternatives under consideration.
- d. Working closely with the environmental planner and the feasibility study team, the regional planner shall identify and propose to the Permanent Commission community-based demonstration activities consistent with the selection criteria approved by the Bank. In identifying possible demonstration activities, the regional planner will seek suggestions from local authorities, community groups and non-governmental organizations.
- e. The regional planner shall assist in the coordination, periodic supervision and review of the community-based demonstration activities (jointly with the environmental planner).
- f. Working closely with the environmental planner, the regional planner shall prepare discussion papers analyzing the regional development implications of Executive Decree No. 1731, alternative strategies for implementation, additional needs for inter-agency coordination.
- g. The regional planner shall provide technical inputs to the legal consultant in the preparation of inter-institutional agreements required for the effective implementation of Executive Decree No. 1731.

- h. The regional planner shall prepare detailed technical comments on the interim and draft reports prepared during the feasibility study by the consulting firm or specialized institution. These technical comments will be circulated for discussion by the Permanent Commission.
- i. The regional planner shall prepare technical progress reports on the feasibility study and regional development issues for the periodic meetings of the Permanent Commission.
- j. The regional planner will work closely with the feasibility study team in establishing alternative institutional structures and arrangements pertaining to regional/municipal administration.
- k. Assists the Executive Coordinator as a technical liaison and in ensuring timely information exchange between the Permanent Commission, the feasibility study team, and the Bank.

#### IV. REPORTS

- 4.1 The regional planner will present the following reports to the Permanent Commission and the Bank:
  - a. A 9-month work plan within two weeks of initiating work;
  - b. A description and justification of the proposed community-based demonstration projects, consistent with the eligibility criteria and procedures approved by the Bank. The first set of proposed projects will be presented within two months of initiating work, with subsequent sets presented every two months thereafter.
  - c. Detailed technical comments on the interim and draft reports prepared for the feasibility study within two weeks of receipt of the reports.
  - d. Final report one month prior to completion.
- 4.2 All reports will be submitted concurrently to the Executive Coordinator of the Permanent Commission for the Galapagos and the Bank by way of its Country Office in Quito.

#### V. QUALIFICATIONS AND OTHER CONDITIONS

- 5.1 Advanced graduate degree in regional planning and development with demonstrated experience in rural community development and integrated environmental management. The consultant should have a minimum of eight years of experience in regional planning and resources management in Ecuador, and a thorough knowledge of the planning, legal and institutional context of the Archipelago of the Galapagos. Demonstrated skills in community involvement techniques

in a coastal rural context are required. Effective communication and writing skills are also required. Prior experience coordinating multi-disciplinary teams for international development projects is an asset.

- 5.2 The duration of the consultancy is estimated at nine months. The work is to be performed under the direction of the Executive Coordinator of the Permanent Commission for the Galapagos in its offices in Quito. The consultant will be required to travel at regular intervals to the Galapagos in the performance of duties. An estimated 5 trips (total of 35 days) will be undertaken to the Archipelago to meet with local authorities, identify and supervise community demonstration projects, and participate in workshops scheduled during the feasibility study.



## **ASISTENCIA TECNICA PARA LA COMISION PERMANENTE**

### **TERMINOS DE REFERENCIA**

#### **ASESOR LEGAL**

#### **I. ANTECEDENTES**

- 1.1 El Gobierno del Ecuador (GOE) desea contratar los servicios de un Consultor Técnico-Jurídico para asistir a la Comisión Permanente para las Islas Galápagos (Comisión Permanente), entidad que tiene a su cargo la coordinación del diseño y ejecución de los planes de manejo de las Islas Galápagos.
- 1.2 La Comisión Permanente fue creada el 10 de septiembre de 1991, mediante Decreto Ejecutivo No. 2707, publicado en el Registro Oficial No. 769 del 13 de septiembre de 1991, para coordinar la ejecución el Plan Global de Manejo Turístico y Conservación Ecológica de las Islas Galápagos (Plan Global), y asesorar al Presidente de la República en la formulación de las políticas relacionadas con la conservación ecológica y manejo turístico de las Islas Galápagos.
- 1.3 Como se reitera en el Decreto Ejecutivo No. 1731, del 9 de mayo de 1994, la Comisión Permanente está conformada por representantes de todas las entidades privadas y públicas más importantes involucradas en el Archipiélago, y tiene la responsabilidad de coordinar, promover y apoyar actividades en relación al Plan Global y la Reserva de Recursos Marinos, de las actividades de pesquería y de turismo y de las condiciones de vida de la población local.
- 1.4 Para el efecto, el Banco Interamericano de Desarrollo (Banco) ha previsto otorgar el apoyo financiero a la Comisión Permanente.

#### **II. OBJETIVO**

- 2.1 El objetivo de la consultoría es proveer apoyo a la Comisión Permanente en la revisión y análisis de las normas jurídicas (Leyes, Decretos Ejecutivos, Reglamentos, Acuerdos Ministeriales e Interministeriales y otros) que rigen a todas las instituciones que integran la Comisión Permanente, así como todas las demás normas de derecho público o privado que tengan que ver con la Comisión; a efectos de determinar si las mismas permiten un adecuado cumplimiento de las funciones de la Comisión y del Plan Global.

### III. TAREAS

- 3.1 El Consultor reportará directamente a la Coordinadora Ejecutiva de la Comisión Permanente. Las tareas a realizar son las siguientes:
- a. Revisará y analizará las normativas relativas a la Comisión y sus responsabilidades en cuanto a la implantación del Plan Global; y propondrá las reformas pertinentes si fuere del caso. Esto incluirá un análisis detallado del Reglamento Operativo existente, así como los procedimientos administrativos de la Comisión Permanente y su Secretaría Ejecutiva.
  - b. Analizará y emitirá criterio jurídico sobre los asuntos que le sean sometidos a su conocimiento.
  - c. Revisará las implicaciones legales para la ejecución de cada componente del eventual Programa de préstamo.
  - d. Asesorará al Presidente y al Secretario Ejecutivo de la Comisión Permanente en asuntos de orden jurídico o legal. Actualizará el Reglamento Operativo existente de la Comisión Permanente y su Secretaría Ejecutiva, o si fuera del caso, preparará una versión revisada, tomando en cuenta las funciones administrativas requeridas de la Comisión Permanente para la implantación del Plan Global y para la coordinación del eventual Programa de préstamo.
  - e. Analizará el Decreto Ejecutivo No. 1731 identificando los temas que requieren convenios interinstitucionales para la ejecución de actividades (i.e. como manejar la cooperación para la Reserva Marina) y preparará los convenios correspondientes.

### IV. INFORMES

- 4.1 El Asesor Legal deberá presentar los siguientes informes a la Comisión Permanente y al Banco:
- a. Plan de Trabajo dentro de una semana del comienzo de trabajo;
  - b. A más tardar dentro de los tres meses de comenzar su trabajo, copias de los borradores de todos los convenios y el Reglamento Operativo actualizado preparados por él. Una vez que dichos documentos hayan sido aprobados tanto por la Comisión Permanente como por el Banco, el consultor presentaría la versión revisada de los documentos a la Comisión y al Banco; y
  - c. Al final de su período de trabajo, el consultor deberá presentar un Informe Final que incluya un análisis jurídico de los asuntos y consideraciones legales para la ejecución de cada componente del eventual Programa de préstamo.

**V. CALIFICACIONES Y MODO DE OPERACION**

- 5.1 Se estima que se requiere de cinco meses de tiempo (no continuo) de un abogado con conocimientos del Sector Público y Privado y con experiencia previa en la legislación para recursos naturales de Ecuador. El consultor tendrá que viajar a las Islas Galápagos durante el período de su trabajo. Se estiman dos viajes por un total de diez días. El trabajo sería en Quito, en las oficinas del Consultor o de la Comisión Permanente, según se convenga.)

## TECHNICAL ASSISTANCE FOR THE PERMANENT COMMISSION

## TERMS OF REFERENCE

## ENVIRONMENTAL PLANNER

## I. BACKGROUND

- 1.1 The Government of Ecuador (GOE) requires the professional services of an environmental planner to advise the Permanent Commission for the Galapagos (Permanent Commission) in natural resources management policies, trends and their relation to integrated environmental management in the Archipelago of the Galapagos.
- 1.2 Pursuant to Executive Decree No. 1731, the Permanent Commission for the Galapagos is vested with the responsibility of promoting, coordinating and supporting environmental management activities in the Galapagos. The Permanent Commission, through its Executive Secretariat, is responsible for introducing, in cooperation with relevant sectoral agencies, specific environmental standards for urban development, tourism and fisheries, consistent with the policies established in the Comprehensive Plan for Tourism Management and Conservation of the Galapagos.
- 1.3 The Inter-American Development Bank (Bank) plans to provide technical assistance to the Permanent Commission by way of this and other individual consultancies to strengthen to assist in the timely and coordinated implementation of Executive Decree No. 1731 and existing management plans for the Galapagos. A 9-month feasibility study for an integrated environmental management Program is also being financed concurrent with the technical assistance.

## II. OBJECTIVE

- 2.1 The objective of the consultancy is to provide policy advice to the Permanent Commission in the coordinated implementation of environmental policies foreseen in the Comprehensive Plan for Tourism Management and Conservation of the Galapagos as well as the Management Plan for the Galapagos Marine Resources Reserve. To this end, the consultant shall assist in: (a) the technical review of the interim and draft reports of the feasibility study; (b) identify and supervise community-based activities in environmental management to be carried out concurrent with the feasibility study; and (c) provide policy recommendations on environmental issues pertaining to the Galapagos as required by the Permanent Commission.

### III. TASKS

3.1 Working closely with the Executive Coordinator of the Permanent Commission and the regional planning consultant, the environmental planner shall undertake the following tasks:

- a. Provide inputs for the 9-month work plan for local consultation/participation to be prepared by the regional planning consultant.
- b. Assist the regional planner in identifying and preparing the justification for community-based demonstration activities in environmental management consistent with the selection criteria approved by the Bank.
- c. Assist the regional planner in the field supervision and periodic review of the community-based demonstration activities in environmental management.
- d. Participate as a technical resource person in workshops, inter-agency seminars, public meetings and other consultation events aimed at promoting involvement in program preparation.
- e. Working closely with the regional planner, the environmental planner shall prepare discussion papers analyzing the environmental policy implications of Executive Decree No. 1731, alternative strategies for implementation, additional needs for inter-agency coordination. The environmental planner will be specifically responsible for preparing a policy paper reviewing opportunities for introducing and strengthening environmental impact assessment (EIA) procedures in the Galapagos for selected sectors including urban sanitation, tourism and fisheries.
- f. The environmental planner shall provide technical inputs to the legal consultant in the preparation of inter-institutional agreements required for the effective implementation of Decree No. 1731.
- g. The environmental planner shall prepare detailed technical comments on the interim and draft reports to be prepared during the feasibility study for distribution to the Permanent Commission and the Bank. This will be closely coordinated with the review of the regional planner.
- h. The environmental planner will undertake a field review and evaluate the impact of the community-based demonstration activities in the final stages of the feasibility study. The consultant shall make recommendations for financing similar activities during the execution of the investment Program.

#### IV. REPORTS

- 4.1 The environmental planner will present the following reports to the Permanent Commission and the Bank:
- a. An individual work plan within two weeks of initiating work (to be coordinated with the work plan of the regional planner);
  - b. Detailed technical comments on the interim and draft reports prepared for the feasibility study within two weeks of receipt of the reports.
  - c. Draft policy paper reviewing opportunities for introducing and strengthening environmental impact assessment (EIA) procedures in the Galapagos for selected sectors including urban sanitation, tourism and fisheries.
  - d. Final report one month prior to completion.
- 4.2 All reports will be submitted concurrently to the Executive Coordinator of the Permanent Commission and the Bank by way of its Country Office in Quito.

#### V. QUALIFICATIONS AND OTHER CONDITIONS

- 5.1 Advanced (graduate) degree in environmental planning or natural resources management with a specialization in environmental policy and/or environmental impact analysis. The consultant should have a minimum of eight years experience in implementing and/or coordinating environmental management projects in Ecuador. Demonstrated experience in environmental impact analysis procedures as well as knowledge of the natural resource management issues of the Galapagos are required.
- 5.2 The duration of the consultancy is estimated at 4.5 months (discontinuous). The work is to be performed under the direction of the Executive Coordinator of the Permanent Commission for the Galapagos in its offices in Quito. The consultant will be required to travel periodically to the Galapagos in the performance of duties. An estimated 3 trips (total of 15 days) will be undertaken to the Archipelago to meet with local authorities and review community demonstration projects.

### SCHEDULE OF ACTIVITIES FOR THE TECHNICAL COOPERATION

[illegible]

## GALAPAGOS ENVIRONMENTAL MANAGEMENT PROGRAM

## DETAILED BUDGET FOR FEASIBILITY STUDY

A. SALARIES	MM	US\$/M	TOTAL
1. Regional planner/leader	9	6,000	54,000
2. Environmental engineer	8	5,000	40,000
3. Urban planner	4	4,000	16,000
4. Marine resource specialist	8	4,000	32,000
5. Env. inst/EIA specialist	4	4,000	16,000
6. Marine fisheries biologist	1	4,000	4,000
7. Water quality specialist	1	4,000	4,000
8. Sociologist	3	3,000	9,000
9. Institutional analyst	2	4,000	8,000
10. Natural resource economist	2	4,000	8,000
11. Financial analyst	4	3,000	12,000
Subtotal (salaries)			203,000
w/ 25% overhead			254,000

B. DIRECT COSTS	UNITS	\$/UNIT	TOTAL
1. International travel			
R/T Air fare to Ecuador	8 trips	1,200	9,600
2. In-country travel			
R/T Air fare to Galapagos	25 trips	200	5,000
Per diem	466 days	150	69,900
Inter-island travel			10,000
3. Other direct costs			
Office rental (Quito)	9 m		20,000
Computer equipment			5,000
Subtotal (expenses)			119,500
TOTAL			373,500



## GALAPAGOS ENVIRONMENTAL MANAGEMENT PROGRAM

## DETAILED BUDGET FOR SUPPORT ACTIVITIES FOR THE PERMANENT COMMISSION

CATEGORY	UNIT	US\$/M	TOTAL
2. INDIVIDUAL CONSULTANTS			
2.1 Fees			
2.1.1 Regional planner	9 m/m	3,600	32,400
2.1.2 Legal advisor	5 m/m	3,500	17,500
2.1.3 Environmental planner	4.5 m/m	3,350	15,100
Subtotal			65,000
2.5 OFFICIAL TRAVEL			
2.5.1 Regional planner			
2.5.1.1 Travel to Galapagos	5 trips	200	1,000
2.5.1.2 Per diem	35 days	150	5,250
2.5.2 Legal advisor			
2.5.2.1 Travel to Galapagos	2 trips	200	400
2.5.2.2 Per diem	10 days	150	1,500
2.5.3 Environmental planner			
2.5.3.1 Travel to Galapagos	3 trips	200	600
2.5.3.2 Per diem	15 days	150	2,250
Subtotal			11,000
97. SPECIAL PROGRAM - Community Demonstration Projects			110,500
TOTAL			186,500