

MEMORANDUM-PLAN OF OPERATION  
BOLIVIA  
PREPARATION OF THE INSTITUTION BUILDING  
AND STRATEGY DEFINITION PROJECT FOR THE  
MINISTRY FOR THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

(TC-93-10-25-2-BO)

**I. OBJECTIVES AND DESCRIPTION**

- 1.1 The Ministerio de Desarrollo Sostenible y Medio Ambiente (MDSMA) was set up under Ley de Reestructuración del Sector Público [public sector reorganization act] (Law 1493 of 17 September 1993). Its fundamental mission is to ensure environmentally-sustainable economic growth. This should be done by building into the country's sustainable development plans, monitoring and enforcing appropriate policies and strategies.
- 1.2 The Government of Bolivia has asked the Interamerican Development Bank (IDB) to fund an institution-building programme (hereinafter referred to as "the project") which would mainly benefit that same Ministry. The aim of the project will be to help the institutional development of the MDSMA by means of: (i) an institution building programme that will benefit the MDSMA, sectorial environmental units and the responsible departments in this field; and (ii) providing basic instruments for decision-making in managing natural resources from the perspective of the country's sustainable development.
- 1.3 The specific aims of the project are: (i) to increase the MDSMA's technical and operating capabilities; (ii) to design and establish information and environmental control and monitoring systems, a task that will involve defining the responsibilities and functions of organizational units at the national, sectorial and territorial levels; (iii) to develop strategies for managing natural resources by means of remote sensing techniques, especially as regards forest resources and planning from the perspective of hydrological basins; and (iv) to prepare pre-feasibility and feasibility studies for projects of investment in sustainable development.
- 1.4 The execution of the project is envisaged to take four (4) years. It is estimated that the total cost of the operation will be US\$ 36 million, of which US\$ 30 million to be contributed by the Bank and US\$ 6 million to be supplied as counterpart funds.
- 1.5 The services of a consultant firm are needed to help the government of Bolivia in preparing the necessary documents for getting the project approved. In Appendix A of Annex II (which contains the terms of reference of the consultancy) a diagram shows the relation between the contents expected of the project and the preparation tasks that the consultant firm has to perform.
- 1.6 The consultancy will be responsible for analyzing the general feasibility of the operation in its present version and to suggest appropriate measures; this task will be executed with great detail which means that

this phase of the preparation will take six months of work. Specifically, the firm will: (i) analyze and present the available alternatives for the specific design of the project components; (ii) develop the alternatives selected, including a technical feasibility analysis of same; (iii) determine the costs and perform an economic analysis of the project by a methods to be agreed upon with the Bank's specialists; (iv) evaluate the project's environmental impact potential; and (v) develop a project outline acceptable to the Bank.

- 1.7 The consultancy's task will include developing the terms of reference for the lines of activity to be carried out and estimating the costs involved; carrying out the preliminary design of highly complex activities, whilst the definitive design will be part of the future project; and developing the terms of reference for such individual consultants as may be required.
- 1.8 In the search for a suitable consultancy, greater emphasis has been laid on a given firm's expertise in the information systems, remote sensing, systems engineering, monitoring facilities design, and map generation areas; less relative importance has been placed on expertise in institution building proper because of the following circumstances: (i) the design of institutional structures is a field in which the Bank has accumulated greater experience; (ii) the project team will include two or more highly qualified specialists who will closely guide and supervise the consultants; (iii) the project team will help identify and then select the consultants to be made part of the firm's team for institutional aspects. The project team's close supervision will involve creating two orientation missions the first to take place on the consultants taking charge and the second at some point during the implementation; the team will remain as well inconstant touch with the respective experts.
- 1.9 In the specialist fields which are required for this project, the experience stands out of the Italian consultants who participated in the past --to the satisfaction of the Bolivian Government-- in the development of cartography projects for natural resources management in Bolivia. This fact, together with the availability of financing via the Italian trustfunds, oriented the search towards firms of that nationality. Ten candidate firms for this position have been considered; ultimately, the choice fell on the firm which has the best credentials, the greatest experience in this field and is a member of the IRI group (a requisite in order to use the CTFONDOS funds to which this request for financing applies).
- 1.10 The firm proposed for award of the contract is TELESPIAZIO, which is technically very sound, of high international standing on the strength of considerable theoretical and practical experience in the remote sensing field and fully capable of executing the foreseen tasks (its qualifications are in the Annex I). TELESPIAZIO is the exclusive agent for supplying some of the most technologically advanced services in Italy. TELESPIAZIO has direct experience in map development from satellite pictures for natural resources management; the consultants presented by TELESPIAZIO have directed the initial stages of the production of Bolivia's forest map, and know by experience how to process information using the

concept of hydrological basin as an analytical unit. The firm in question will hire such specialists as may be required for institutional purposes under the Bank's close supervision, as explained above.

- 1.11 The terms of reference of the consultancy (see Annex II) specify what tasks have to be performed and in what sequence. These terms of reference will be either confirmed or reformed, in agreement with the Bank, when the firm begins operations in Bolivia. Additionally, these terms of reference, could be reformed by the Bank, in agreement with the firm, to the extent that changes in project contents be necessary. 38 international consultant /months and 36 local consultant/months will be required. For the vacancies envisaged experts will be selected in accordance with the Bank's normal procedures; the firm will present at least three candidates for each position, and the Bank will select the most apt, while keeping the right to request replacements during performance of the work. For the present technical cooperation, an implementation period of six months is contemplated, five of which in the field; the field work would begin in February 1994.

## II. PROJECT JUSTIFICATION

- 2.1 The recently established MDSMA is facing the very challenging task of defining the policies that will guarantee the sustainability of the efforts and investments that Bolivia will make in little known areas. The large majority of the Ministry's personnel is dedicated to this fundamental and increasingly important task. The MDSMA has a very small budget for 1993; the 1994 allocation would allow the Ministry to engage the necessary additional technical personnel, since the present personnel is insufficient to comply with the new obligations.
- 2.2 Under these circumstances, it becomes necessary to obtain external help to develop the studies required for the preparation of the institution-building project report. The Government of Bolivia has requested the Bank to allocate non-refundable CTFONDOS funds (see Annex III) in order to cover this need.
- 2.3 The Bank strongly supports the strengthening of the structures aimed at improving the environmental quality and ensuring the sustainability of the member states' natural resources base. Therefore, the operation which the proposed consultancy will help undertake is among its top priorities. In the recent programming mission sent by the Bank to Bolivia, the Bolivian government and the Bank agreed on the importance of carrying out the project; this was conceived of as one of the linchpins of a strong structure which is to be the foundation for three main components of the country's present policy: (i) the efforts to modernize the public sector; (ii) putting into action the criteria of sustainability and control over the quality of the environment in public and private investments; (iii) and export support actions, some of which depend on the ability to prove that they will be carried out under acceptable environmental conditions. Since this is a basic step in the envisaged sequence, the project's timing becomes very important.

- 2.4 The description of the scope of the institution- building and MDSMA strategy definition project presented herein is consistent with the contents of Profile I approved by the Programming Committee on the 7 of December of this year.
- 2.5 The operation to which the present technical cooperation is associated is programmed for 94A. It is extremely urgent that the consultancy services start in February 1994.

### III. ESTIMATED COST AND PROPOSED FUNDING

- 3.1 The total cost of the present operation is equivalent to US\$ 800,000 to be provided by the Italian Trust Fund from the Istituto per la Ricostruzione Industriale (IRI). Next is a summary of the budget; the detailed budget is found in the Annex IV.

|     |   |              |
|-----|---|--------------|
| 1.  | Professional Services Firm  | US\$ 800,000 |
| 1.1 | Consultancy's fees  |              |
|     | a. International consultants' fees  | US\$ 278,000 |
|     | b. Local consultants' fees  | US\$ 108,000 |
|     | c. General expenses (overhead 50% over the international consultants' fees) | US\$ 139,000 |
|     | d. Direct costs   | US\$ 246,470 |
| 1.2 | Equipment   | US\$ 28,530  |

### IV. DISBURSEMENT SCHEDULE

- 4.1 The funds agreed on the basis of the technical and economic proposal presented by TELESPAZIO will be paid out as follows: 30% upon commencement of the work; 30% when the mid-term progress report is delivered; 20% when the final report is delivered; and the remaining 20% when the Banks accepts the final report.
- 4.2 The payment base presented in the proposal and agreed on is a lump sum based on results and not on time of performance. The deadline for the final disbursement of funds is set at one year after the date of its approval by the Bank's Board of Directors.

### V. RESPONSIBILITY

- 5.1 PRA/ENV will have technical responsibility over the operation. The OP1/OD1 division will have basic responsibility. The project team will supervise the work of the consultants, with the cooperation of the Bank's Field Office in Bolivia (FBO).

### VI. DEADLINES AND REPORTS

- 6.1 The consultancy will begin the field work no later than 30 days after executing the contract with the Bank.
- 6.2 The consultancy will produce three reports, as indicated in the terms of reference, i.e. an initial report, a mid-term report and a final report.

The report presentation deadlines are to be counted as from the date of commencement of field operations: (i) the initial report will be presented within 10 days following the beginning of the field work; (ii) a mid-term report will be presented at the end of the third month of consultancy; and (iii) a final report will be presented no later than 15 days after the end of the field work.

6.3 Appendix D of Annex II of this Memorandum-Plan of Operation contains the consultants' work schedule for the present operation.

6.4 The project team leader, acting in the name of the Bank, will have the responsibility of receiving and approving in due case the reports submitted by the consultancy.

#### VII. RECOMMENDATIONS

7.1 After presenting this document to the country team and the Loan Committee, the Operations Division (OP1/OD1) and Environmental Protection (PRA/ENV) Chiefs recommend that the use of Italian Trust Funds be authorized for an amount equivalent to US\$ 800,000 in order to finance on a no-refund basis the proposed operation as described in this document.

#### VIII. CERTIFICATION

8.1 The Bank's Technical Cooperation Unit Chief certified that sufficient Italian Trust Fund (IRI) exist (for an amount equivalent to US\$ 800,000), to finance the activities envisaged in the present Memorandum-Plan of Operation (see Annex V).

#### Annex List

|           |                                    |
|-----------|------------------------------------|
| Annex I   | Consultancy's background           |
| Annex II  | Consultancy's terms of reference   |
| Annex III | Beneficiary's official application |
| Annex IV  | Detailed budget                    |
| Annex V   | Certification of fund availability |

PROPOSED RESOLUTION

BOLIVIA. NONREIMBURSABLE TECHNICAL COOPERATION FOR THE PREPARATION OF THE  
PROJECT FOR INSTITUTIONAL STRENGTHENING AND FORMULATION OF STRATEGIES FOR THE  
MINISTRY OF ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

The Board of Executive Directors

RESOLVES:

1. That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, as Administrator of the Italian Trust Fund of the Industrial Reconstruction Institute (IRI), to enter into such agreements as may be necessary and to adopt such other measures as may be pertinent for the execution of the plan of operations referred to in Document AT-\_\_\_\_\_, with respect to a non-reimbursable technical cooperation with the Republic of Bolivia for the preparation of the Project for Institutional Strengthening and Formulation of Strategies for the Ministry of Environment and Sustainable Development.

2. That up to the equivalent of US\$ 800.000 is authorized for the purpose of this resolution, chargeable to the above mentioned Fund.

3. That the above mentioned sum is to be provided on a non-reimbursable basis.

**ANNEX I**

**CONSULTANCY'S  
BACKGROUND**

### TELESPAZIO PROFILE

TELESPAZIO, an IRI/STET Group Company, is the exclusive franchise holder of the Italian Post and Telecommunications Ministry for the management of satellite telecommunications systems in Italy.

The Company acts as "exclusive carrier" in space systems (earth stations and satellites), providing services on an international, regional and national basis to Italian and foreign users through the INTELSTAT, EUTELSAT and INMARSAT systems.

TELESPAZIO is also involved in the development of satellite technology applications, operating in other highly competitive areas such as earth observation, in-orbit satellite management and advanced space programmes.

TELESPAZIO's corporate capital is 40,2 billion lire. In 1992 its operating income rose to around 400 billion lire and net profit was up to 24,7 billion lire.

TELESPAZIO has its Headquarters in Rome; its technical facilities are the Fucino Space Center (Central Italy), the Lario earth station (Northern Italy) and the Scanzano earth station in Sicily (Southern Italy). On behalf of the Italian Space Agency, TELESPAZIO also manages the laser Center for space geodesy at Matera in the South of Italy.

Anticipating the new and growing market communication requirements in the specific field of space telecommunications, TELESPAZIO introduced the **Very Small Aperture Terminals (VSAT)** technology in Europe, as well as the applications of **Business Television**.

TELESPAZIO has created terrestrial networks to supply digital data via satellite. This is done by using small terminals installed on a client's premises for corporate use.

To date, some 600 such terminals have been installed, putting Italy in the European vanguard. Most of our clients are corporations and organizations that stand to gain competitive advantages by the efficient exchange of data and information, or state-owned enterprises undergoing improvement programmes. One innovative, specialized application of satellite links using small mobile antennas is the **ARGO system**, developed for the Italian Civil Protection Department. The ARGO communications system comprises a network of fixed and mobile stations enabling the immediate establishment of emergency links with disaster areas and the rapid, efficient gathering of seismic, volcanological and hydrological data.

TELESPAZIO has also created a **Business Television** network equipped with about 100 reception antennas and one or more mobile uplink terminals. These enable unidirectional, wide-band video and audio signals to be transmitted from wherever the antennas are installed.



The service is particularly suited to corporate users in the following specific areas: marketing and sales, training, corporate communications and sales point management. Other potential applications are Telemedicine for long distance aid and Remote Teaching for training courses.

TELESPAZIO provides a radio-tracking service for terrestrial vehicles as part of the EUTELTRACS system; this service enables transport companies to locate their vehicles in real time and exchange messages with them.

Major applications of EUTELTRACS system are: management of vehicles fleets; assistance to vehicles during their trips; surveillance and management of loads; activation of security and emergency systems.

TELESPAZIO is a major supplier of satellite in-orbit control services in the international market. These services are currently provided for the following organizations: Agenzia Spaziale Italiana; European Space Agency; INTELSAT, INMARSAT, COMSAT.

The know-how and expertise acquired through study and experimentation enable TELESPAZIO to participate in the principal space programs, at national (ITALSAT) and international level.

Thanks to its experience and research background, TELESPAZIO has a leading position in **Satellite Earth Observation** and the management of **Environmental Information Systems** aimed at the widest possible market, and at meeting every aspect of client information needs. It plays the role of National Remote Sensing Centre by receiving, processing and distributing the data acquired through LANDSAT, SPOT, MOS-1 and ERS-1 satellites.

The main projects in this field are: the **Mediterranean Remote Sensing Centre** designed to carry out studies for the defence of the Basin's coasts and sea; **Terra del Sud** designed to develop and implement information systems for agriculture by means of high-tech facilities situated in the South of Italy; the **TELAER** project for the development of an aerial remote sensing service; **Project COSTE** for classifying coasts according to the different degree of pollution. The use of lower-cost mini satellites appears to become increasingly common in space activities.

TELESPAZIO has wholly designed and financed the first Italian micro-satellite **TEMISAT** (Telespazio Micro Satellite), that was launched successfully on 31 August 1993 from the Plesetsk Cosmodrome in Russia, using the Tsyclon carrier.

Thanks to an independent monitoring network, TEMISAT will guarantee data reception from remote terminals linked to groups of environmental sensors, and distribute the data to user data collection centers. It will provide highly reliable commercial data-gathering and distribution services for environmental monitoring.

The system's principal applications include monitoring oceans, farm-oriented meteorology, climatology, water and snow basins plus the monitoring of environmental pollution and large civil engineering projects (buildings, dams, etc). The service is scheduled to start in 1994.

TELESPAZIO is becoming more and more international by the day, establishing direct representations, companies and agreements such as: Gulf TELESPAZIO (Gulf area), Astelit (Russia), Czethtel (Czech Republic), Telespaço and Vicoa (Brazil), Telespazio de México (Mexico), EOSAT agreement, Telespazio Argentina, DENEL agreement (Southern Africa).

#### PRIORITY AREAS

South America (Argentina, Brazil and Uruguay).  
Central/Eastern Europe (Russia, Hungary, Albania, Czech Republic).  
Gulf area and Middle East (via Israel).  
Africa (Southern Africa and FAO projects)  
Asia (India, Southeastern Asia, China).

#### WORTH OF TELESPAZIO'S FOREIGN MARKET

The following is a list of the projects completed during the last two years and those which will probably be adjudged to TELESPAZIO in 1993. For additional information see the International Markets information bulletin.

#### ACTIVITIES COMPLETED

##### Argentina:

- Professional advice to Telecom on:
- the technical and economic evaluation of Impsat (SUT) (MLit 50) 1/\*  
station traffic capacity expansion (TLE) (MLit 70)  
Telsys contract (OST cartography); work in progress; MLit 750

##### Brazil:

- Antenna assembly (SUT) for FIAT's private network (MLit 600 + MLit 70/year)

##### Mexico:

- Highway study (OST), MLit 3000

##### Somalia and Mozambique:

- Antenna assembly (SUT) (MLit 100 + MLit 18/month)
- Antenna assembly (SUT) (MLit 100 + MLit 18/month)

##### Arabsat:

- Support for the preparation, launching, earth orbit insertion and telemetry for the IO satellite (MLit 500)

##### Malta and Morocco:

- Antenna assembly (SUT) for a SGS private network (MLit 800 + MLit 180/year)

##### Malta:

- Antenna assembly (SUT); 3-year rent, MLit 90/year

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1/ T.'s note: MLit is equal to 1 million Italian Lire.

Poland:

- Antenna assembly (TLE) for Poland-Italy communications (MLit 1500)
- Antenna assembly (SUT) for FIAT's private network (MLit 300 + MLit 100/year)

Romania:

- Antenna assembly (TLE) for Romania-Italy communications (MLit 1000)
- Antenna assembly (SUT) for TLP private network (MLit 450 + MLit 100/month)

Turkmenistan:

- Antenna assembly (SUT) for TLP private network (MLit 450 + MLit 100/month)

Russia:

- Various supplies for the Asterlit joint venture (MLit 700)

ERS network:

- Data distribution to 7 European countries (SUT) (MLit 490 + MLit 50/year)

EEC:

- OST (total: MLit 2800)  
ENS Environet, MLit 260  
MARS Azione MLit 4400  
Environment: Minerve, MLit 320 - Medalus MLit 120  
MAST (Oceanography), MLit 480  
BRITE, EURAM, Industrial and Material Technology, MLit 400  
Eastern Countries, MLit 480  
Environment: Efeda, MLit 300  
B-BIS (desertification) JRC MLit 40
- STS (Total: MLit 700)  
RACE: Flash TV (Telematics) MLit 240  
DELTA: Oscar, (Video education) MLit 429  
telecommunications policy: MLit 30
- SPS: EOC (Earth Observation Centre), MLit 60

INITIATIVES LIKELY TO GENERATE CONTRACTS WITHIN A YEAR

Argentina:

- 2 projects of the Telsys type, to be awarded, MLit 750 + MLit 750
- Cordoba cadastral survey; World Bank prequalification, MLit 3000
- Santa Fe cadastral survey; World Bank prequalification, MLit 7500
- Telecom to be acquired, MLit 400
- Buenos Aires Province, to be awarded, MLit 10 000

Venezuela:

- OST waiting for the result of the bid competition, MLit 1000

EEC:

- ENVIRONET Phase 2; project to be presented, MLit 2400
- PHARE, MLit 600
- TA-CIS-Russia, information network for public administration, to be awarded; bid presently being considered, MLit 1800 (SPS, OST, STS)
- TA-CIS, MLit 600

- Environment, MLit 200

Turkey:

- DEGERE, VSAT network, offer to be updated, MLit 1000
- Agricultural production; project pending MAE (Italian Foreign Office) approval for financing, MLit 4000

Czech Republic

- VSAT network, pilot project MLit 100, total network MLit 8000 (preliminary negotiations)

Azerbaijan:

- Antenna and station services supply, MLit 3000

FAO:

- 1 project waiting for signature by MAE's Directorate General, MLit 3500
- 1 project signed by MAE's Directorate General, waiting for signature by FAO's ODG/TPZ, MLit 3500

China:

- Temisat, offer presented, MLit 800 for 5 years
- Tellus project (OST), contract to be signed, MLit 3800

Algeria:

- Feasibility study for the Ecosystems and Agriculture inventory, waiting for METAP (United Nations) to answer, MLit 400
- Projects funded by the Interamerican Development Bank (IDB), for a total of MLit 2800.

Cote d'Ivoire:

- GIS and land use, project presented; GEF funding MLit 2000

Morocco:

- Forests, waiting for EEC evaluation, MLit 1800

Gabon:

- TLG/TLR services; final approval phase; MLit 20 000 out of a total of MLit 40 000

Brasil:

- Vecarss, project to be adapted to the new institutional framework also in accordance with the 94/95 budget; total value: MLit 6700
- Mato Grosso, environment; prequalified in the bid competition, MLit 10 000
- Rondonia, environment; prequalified in the bid competition, MLit 10 000

Turkey:

- DEGERE, VSAT network; offer to be updated, MLit 1000
- AGRICULTURAL PRODUCTION, waiting for the redefinition of Italo-Turkish cooperation, MLit 4000

Senegal:

- Project Coste: project presented, local government to find funding sources, MLit 2000
- Project Pesca: project presented, local government to find funding sources, MLit 2000

## BOLIVIA

### PREPARATION OF THE INSTITUTION BUILDING AND STRATEGY DEFINITION PROJECT FOR THE MINISTRY FOR THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

#### Terms of reference of the Consultancy for the project preparation studies

#### **I. BACKGROUND**

- 1.1 The Ministerio de Desarrollo Sostenible y Medio Ambiente (MDSMA) was set up under Ley de Reestructuración del Sector Público [public sector reorganization act] (Law 1493 of 17 September 1993). Its fundamental mission is to ensure environmentally-sustainable economic growth. This should be done by building into the country's sustainable development plans, monitoring and enforcing appropriate policies and strategies.
- 1.2 The Government of Bolivia has asked the Interamerican Development Bank (IDB) to fund an institution-building programme (hereinafter referred to as "the project") which would mainly benefit that same Ministry. The aim of the project will be to help the institutional development of the MDSMA by means of: (i) an institution building programme that will benefit the MDSMA, sectorial environmental units and the responsible departments in this field; and (ii) providing basic instruments for decision-making in managing natural resources from the perspective of the country's sustainable development.
- 1.3 The specific aims of the project are: (i) to increase the MDSMA's technical and operating capabilities; (ii) to design and establish information and environmental control and monitoring systems, a task that will involve defining the responsibilities and functions of organizational units at the national, sectorial and territorial levels; (iii) to develop strategies for managing natural resources by means of remote sensing techniques, including geographical information systems and monitoring networks, especially as regards forest resources and planning from the perspective of hydrological basins; and (iv) to prepare pre-feasibility and feasibility studies for projects of investment in sustainable development. The institution-building programme in question would consist of three components which are outlined in Appendix A.
- 1.4 The execution of the project is envisaged to take four (4) years.

#### **II. OBJECT OF THE CONSULTANCY**

- 2.1 The consultancy services are necessary in order to analyze the general feasibility of the operation in its present version and to suggest appropriate measures. Specifically, the firm will: (i) analyze and present the available alternatives for the specific design of the project components; (ii) develop the alternatives selected, including a technical

feasibility analysis of same; (iii) determine the costs and perform an economic analysis of the project by a methods acceptable to the Bank; (iv) evaluate the project's environmental impact potential; and (v) develop a project outline acceptable to the Bank.

### **III. ACTIVITIES ENVISAGED BY THE PROJECT**

- 3.1 The tasks the consultancy has to perform relative to each project component and sub-component are described here. Appendix A links the general contents of the project to the preparatory tasks the consultancy will have to perform. In the section on methods, the scope of the described activities is defined.

#### **A. MDSMA'S INSTITUTION-BUILDING**

- 3.2 The consultancy should develop the contents of the six sub-components of the MDSMA's institution-building component at different levels as described in the text. The tasks for the development of each sub-component are listed as follows:

##### **1. General support**

- 3.3 The consultancy will perform an analysis of the internal coordination mechanisms and will identify ways to make them more effective and efficient. It will also ensure the consistency between the project actions and the other MDSMA activities; the external coordination mechanisms will also be analyzed, particularly those that link the work of MDSMA with that of the Social Development and Economic Development Ministries. The consultancy will present recommendations based on these analyses to the MDSMA. The MDSMA will decide whether to put them in practice immediately or to make them a part of the future project's activities.

- 3.4 The consultancy will review, together with the appropriate unit, the procedures, equipment, and personnel available to perform the required administration functions for the loan to be granted to MDSMA. Starting from this review, and under the project team's supervision, the consultancy will produce the following through joint work with the MDSMA personnel: (i) the project's accounts system; (ii) a summarized manual of administrative procedures, based on the Bank's general manuals.

##### **2. Development of a national pre-investment system**

- 3.5 The consultancy will develop the terms of reference for the execution of three activities: (i) planning rules and procedures for institutionalizing the national pre-investment system; (ii) developing, applying and evaluating manuals for the drafting of pre-investment projects; (iii) establishing a mechanism for the orderly integration of pre-investment projects into the national pre-investment system.

- 3.6 Furthermore, the firm will develop the terms of reference and will carry out a preliminary cost estimate for the following activities aimed at prioritizing the generation of projects and the use of technical

cooperation funds: (i) developing procedures for implementation of the national development strategy through specific projects; (ii) developing procedures for the generation, drawing up, evaluation and follow-up of projects; (iii) designing a computerized system to run the technical cooperation programme and the scholarship programme.

- 3.7 The consultancy will also calculate the costs involved in these three lines of activity, in order to include them in the future project's budget.

**3. Support for the development of legislation, regulations and standards**

- 3.8 The consultancy will complete a progress review, to that date, in the drawing up of proposals for bills, regulations and standards in the fields concerning the MDSMA; in agreement with the Bank and the MDSMA, the firm will identify those actions that could be completed on the future project's funds alone.

- 3.9 The consultancy will develop the terms of reference and estimate the costs of the activities selected for inclusion in the future project.

**4. Territorial and natural resources management**

- 3.10 The consultancy will study the need for specialized equipment (workstations, PCs) for the execution of the planning and control tasks by the responsible territorial and natural resources management under-secretariats. The consultancy will include details of the equipment unit costs, both at local and international prices.

- 3.11 The consultancy will take part in the conceptual design and structuring of a series of systems and sub-systems that, as a whole, will help establish an environmental management system in Bolivia (see the environmental management systems' organization scheme included in Appendix B).

- 3.12 The consultancy will perform a preliminary conceptual design and cost estimate for a national environmental information system 1/. This

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1/ The preliminary design of the information and environmental monitoring systems could be started separately or following a single scheme. This is to be decided by the consultancy's experts after consulting the Bank and MDSMA. Whichever decision is taken, the result should be an interconnected network which uses all the systems developed, with multiple sources and users. Beginning with the agreed upon preliminary design, the consultancy will develop the terms of reference of the final design and system installation activities.

In the preliminary design of these systems, no fewer than the following alternatives for their location will be studied: (i) MDSMA-centralised systems including information from all available sources, and functioning as service providers for other users; (ii) systems installed in other



system would include the following: (i) physical and organization instruments for data collection, quality control and processing of relevant natural resources information, and human environment quality; (ii) a set of physical, biological and socioeconomic data-bases; (iii) geographic information systems; (iv) permanent updating mechanisms; and (v) facilities and methods for data distribution and dissemination. The national environmental information system will provide the basis for the operation of the environmental quality monitoring and control systems. These systems will be integrated into the national environmental information system and the environmental control system, the MDSMA's own geographic information systems (such as the SIG to be established for forest mapping and monitoring) and other systems existing in the country.

3.13 The consultancy will draw up a preliminary plan and cost evaluation for the establishment of a national environmental monitoring system (see footnote 1). The national environmental monitoring system is envisaged as consisting of: (i) stations monitoring environmental changes (water, air, soils, vegetation cover, etc.); (ii) monitoring networks that will retrieve and transmit information from the field stations, based on real time transmission and reception capabilities; (iii) laboratories for sample analysis; (iv) mechanisms for supplying data to the national environmental information system and to the environmental quality control system.

3.14 The consultancy will carry out a series of preparatory actions for designing and installing a forest resources planning and management system, which will be integrated into the environmental information systems. In particular, the consultancy will perform the following tasks:

- a. Develop the preliminary design of a geographical information system for surveying and managing Bolivia's forest resources;
- b. Preliminary design the forest map completion and updating activities on a preliminary basis, based on previous work --including general eco-forest zonation-- to performed on a nation-wide level complete with field information/verification; the first product of this activity would be a national forest map (the proposed scale would be 1:1,000,000), on a 1,250 000 cartographic base;
- c. Develop the terms of reference and perform a preliminary estimate of the costs involved in developing the forest management system. This system has been conceived of as an institutional-administrative mechanism for organizing the exploitation and conservation of forest resources, covering both the public (fiscal and overall control aspects) and private (forest management and investment) sectors;

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agencies (the existing public or private ones), which would provide services to the MDSMA and other users as the case may be; and (iii) systems installed with a new body (public or private) that would be created for that purpose where the MDSMA would have priority and powers of guidance.

- d. Develop the terms of reference and preliminary cost estimate for the forming of a forest monitoring programme as a sub-system of the general natural resources monitoring system;
  - e. Develop the terms of reference and preliminary cost estimate for the generation of observations or conclusions that can help define a general forest policy;
  - f. Develop an outline of the terms of reference for the design of sustainable management projects for Bolivia's natural forests.
- 3.15 The consultancy will be responsible for the following preparatory tasks linked to the design and implementation of a planning system for the sustainable management of priority basins in Bolivia:
- a. For the Pilcomayo basin: (i) developing the selection criteria for micro-regions (including socioeconomic indicators as part of the weighing scheme) in the Pilcomayo river basin, where an ecological-economic zoning procedure will be applied; (ii) selecting the micro-regions; (iii) developing the terms of reference and preliminary cost estimate for the zoning work, which will include collecting primary data in the micro-regions and operating a geographical information system; (iv) developing the terms of reference for purposes of comparative analysis against the rest of the great Rio de la Plata watershed; (v) developing the terms of reference and preliminary cost estimate for reviewing the zoning results and inferring conclusions that may help define a general ecological-economic zoning policy for the whole country; and (vi) developing the terms of reference for the performance of feasibility studies on specific investments in the area under study.
  - b. For the Madre de Dios river basin and adjacent areas (which encompass the great Amazon watershed), the Lake Titicaca basin (in the great endorheic watershed), and the Ichilo-Chimoré-Yapacaní rivers sub-basin, the consultancy will develop the terms of reference for the analysis of secondary information, particularly that obtained from zoning and pilot land use planning projects, and the normalization of the conceptual and information base; the aim of these studies will be to generate observations and conclusions that may help define national policies in this field. Furthermore, possible future investments in this field will be looked for; to do this, the firm will develop preliminary terms of reference for inclusion of the corresponding pre-feasibility and feasibility studies into the future project.
  - c. Furthermore, the consultancy will: (i) perform an analysis of the technical and financial alternatives for the creation of a new institution for territorial management in accordance with MDSMA's objectives; (ii) present the alternatives thus identified to the Bank and MDSMA, and reach an agreement with them on the choice of one alternative from those thus presented; and (iii) perform a preliminary design of the institution based on the alternative

chosen, generating the terms of reference for this activity and providing a preliminary cost estimate on account of both design and implementation.

#### **5. Environmental quality control**

- 3.16 The consultancy will perform a preliminary design and a preliminary cost estimate on account of the design and implementation of a national environmental quality control and impact evaluation system. This system is conceived of as a mechanism made up of incentives, sanctions and permits, based on environmental impact evaluation as the main tool for the detection of any undesirable environmental effects of public and private projects. The system will include the following minimum components: (i) a sensing or detecting mechanism --to be provided by the information and monitoring systems-- to identify and quantify such changes as may occur in environmental quality; (ii) a component to study the condition as detected and compare it with established patterns or norms; and (iii) a component to modify such condition and adjust it to the established requirements. The preliminary design will also include the terms of reference for both the design and the implementation of the system, as well as a preliminary cost estimate for the carrying out of such activities.

#### **6. Promotion**

- 3.17 The consultancy will develop the terms of reference and a preliminary cost estimate for the carrying out of the following activities: (i) lending technical assistance to specialized entities for the building of environmental issues into formal and non formal education; (ii) revising and drafting environmental education training programmes and generating recommendations or new designs; (iii) designing specific target-group-oriented guidelines and policies for sustainable development.
- 3.18 The consultancy will perform the preliminary design and preliminary cost estimate for a promotion campaign through the media, which purpose will be to raise social awareness of MDSMA's work. The firm will also develop the terms of reference for the design and implementation of the campaign.
- 3.19 The firm will draw up the terms of reference for individual consultants that will support MDSMA in establishing a coordination system amongst the State planning, execution and administrative agencies; the performance of the tasks thus designed could or could not be part of the future project, depending on what the MDSMA authorities may decide.

#### **B. INSTITUTION BUILDING FOR SECTORIAL AND DEPARTMENTAL ENTITIES**

##### **1. Sectorial entities**

- 3.20 The consultancy should work out a prioritized list of sectorial entities (secretariats, ministries, and others) complying with the following characteristics: (i) have responsibility for the execution of investment projects from which undesirable environmental impacts could result; (ii) have environmental or other units in their organization responsible for

the environmental quality of its operations; (iii) are interested in being beneficiaries of the project.

3.21 For all the sectorial entities selected as having priority, the consultancy will have to develop the terms of reference and work out a preliminary cost estimate for the carrying out of the following activities:

- a. Developing the procedures for the performance and supervision of environmental impact evaluations (EIA) for projects by the specialized units of secretariats, ministries and other sectorial entities;
- b. Developing coordination, quality control and follow-up mechanisms between the sectorial specialized units and MDSMA;
- c. Developing and executing a training and professional exchange programme between the specialized sectorial units and MDSMA in its headquarters.

2. **Departmental entities**

3.22 The consultancy shall consult MDSMA in order to learn whether, by the time operations commence on the project, the Government of Bolivia has taken a decision regarding the structure of the departmental units that will be responsible for implementing the policies generated by MDSMA. If that decision has not been taken, the development of the activities hereinafter listed will depend on that decision being taken during the first three months of the consultancy. Should this fail to happen, the activities described in this paragraph cannot be performed in the context of this consultancy and the firm will be exempted from this obligation. If the decision has been taken, the consultancy shall develop the terms of reference and a preliminary cost estimate for the performance of the activities hereinafter listed in detail:

- a. Developing communication mechanisms and coordination procedures between MDSMA and the specialized departmental units;
- b. Developing and executing a training and professional exchange programme between the specialized departmental units and MDSMA at its headquarters.

C. INCENTIVES TO PARTICIPATION BY THE PRIVATE SECTOR IN THE RENDERING OF ENVIRONMENTAL SERVICES

3.23 The consultancy will be responsible for exploring such possibilities as may exist in Bolivia for "privatizing" environmental services 2/ or for

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2/ Privatisation is understood as being the total or partial transfer of responsibility, including or not the transfer of property, for the supply of certain public services to private sector suppliers; this applies to

allocating these services to private suppliers <sup>3/</sup>. Appendix C lists the possible areas of interest on this point; the consultancy will rely on a preliminary report --to be prepared by MDSMA-- which will summarize the basic information to be used. The research work should include a political, legal, technical and financial feasibility study.

- 3.24 As a result of this study, the consultancy should select up to three cases in which there are potentially favorable conditions for privatization or allocation to the private sector. Each case should be supported by a study of its limitations and opportunities, as well as an indication of what are, in the firm's expert opinion, the probabilities of its being actually carried through.
- 3.25 The consultancy will also develop the terms of reference of the activities required for an detailed feasibility analysis for the selected cases. This line of activity will be included as part of the future project.

#### IV. WORK SCOPE AND METHODOLOGY

##### A. SCOPE

- 4.1 The firm is expected to propose the specific contents (activities and allocation of resources) that each different project component must have in order to be executed with funding from the Bank.
- 4.2 In some cases the firm will be responsible for performing some preparatory tasks (tasks 1,1; 1,2; 2,1; 2,2; 10,1; 10,2; 11,1; 15,1; 16,1; 24,2; 25,1; 25,2 in Appendix A). In other cases the consultancy should perform a preliminary design (tasks 12,1; 13,1; 14,1; 14,2; 16,2; 17,1; 20,1 in Appendix A); this task is required in order to estimate the approximate cost of the execution activity to be included in the future project. In all other cases the consultancy will only develop the terms of reference and estimate the costs of the future activities.
- 4.3 The consultancy will be responsible for analyzing the technical-institutional, economic and environmental feasibility of the proposed activities. The results of this analysis must be included in the preliminary and final proposals so as to ensure the general feasibility of the operation. The resulting project proposal must be presented to the Bank in an acceptable format (see Appendix D).
- 4.4 In particular, the following specific comments are in order:
- a. Such technical-institutional feasibility study must consider whether the installed capacity in the MDSMA is such --in terms of technical

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existing state-owned companies.

<sup>3/</sup> Allocation of responsibility for the supply of services regards the cases in which there are no existing companies, or other public sector mechanisms performing these functions.

personnel, financial resources, availability of external support-- as to enable it to take responsibility for the operation and maintenance of the systems to be installed. These observations will enable the preliminary design of systems compatible with the existing ones whilst of a manageable degree of complexity in view of MDSMA's circumstances, both present and foreseeable for the near future.

- b. As to the economic evaluation, the set of activities proposed for the project should be evaluated using such cost-effectiveness criteria as may be required in order to rationalize the use of project resources and obtain the most effective results at the lowest possible cost. The activities to be performed for the study of basin management and natural resources exploitation must be defined based on a precise identification of its economic implications.
  - c. The project's environmental feasibility report must be presented separately, using an "environmental impact evaluation" format and methods acceptable to the Bank.
- 4.5 The firm's proposals will be discussed with the Bank and with MDSMA. Based on these consultations, the consultancy will prepare a final version of the future project's specific contents. At the end of this process the firm's final report, including the project's feasibility analysis, must establish a final cost estimate; in other words, all of the Programme's activities must have a specific budget allocation.

B. DEFINITIONS

4.6 In these terms of reference, the following definitions apply:

- a. Preliminary design: a first approximation to what the final activity structure will look like; it provides a concept that can be used as a basis for developing the future activity. The preliminary design will help define the areas or modules of the system whose implementation could be financed with project funds. This activity includes the collection of basic information, the conceptual design of the activities proposed, and the evaluation of a number of alternatives.
- b. Development of the activity's terms of reference: includes the listing of activities and tasks which, when executed, will ensure the fulfillment of an objective or goal as set out. A list of human resources, equipment and other necessary inputs for each activity envisaged will also be included. The terms of reference must be succinct and include a work schedule.
- c. Preliminary cost estimate: on the preliminary design level, some of the costs handled by the consultancy on account of technical aspects or details, will be estimated or preliminary in nature. These costs will be defined during the study phase of the project's execution,

but would be subject to the fixed budget ceilings already determined during preparation of the project. For the activities requiring the development of specific terms of reference, a cost estimate is expected to be prepared by the consultancy. This will be preliminary until adjusted as required by the project's team when drawing up the project's report 4/.

- d. Investment estimate: a proposal as to the amount of equipment, materials and other inputs required in order to perform the activities; it will be presented in the same budget format as the one described in the footnote 4.
- e. Development of the consultants' terms of reference: as part of the terms of reference for required individual consultants, the objectives, goals, scope, specific tasks, required reports, minimum qualifications, supervision mechanisms, duration and other details considered necessary must be specified.
- f. Terms of reference in outline: proposal of general and specific objectives; list of activities which could be included in the projects; tentative amounts.

#### **V. CONSULTANCY PERIOD**

- 5.1 The total duration of the consultancy will be (6) six months, with at least five (5) months of field work in La Paz, Bolivia. The work in La Paz is expected to begin in February 1994 (see provisional work schedules in Appendix D).

#### **VI. REQUIRED CONSULTANTS**

- 6.1 The services of 38 expert/months of consultants of international standing (whether foreign or Bolivian by nationality) are needed, to be distributed as follows: environmentalist and project manager (6 months); expert in environmental institutions (4 months); sustainable development project management expert (2 months); hydrologist (5 months); agronomist (3 months); forester (4 months); natural resources economist (3 months); information systems' expert (4 months); environmental legislation expert (3 months); and financial expert with experience in privatization operations (4 months).
- 6.2 Furthermore, 36 months of local consultancy will be required (6 months each), broken down as follows: forester; basin management expert; protected areas expert; assistant to the financial expert; sociologist; assistant to the information systems' expert.

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4/ The consultancy will present the estimated costs in a budget structure which clearly shows the unit costs and the estimate's source or basis in detail.

- 6.3 For purposes of selecting the experts to fill the vacancies envisaged, the Bank's normal procedures will be followed; the firm will present at least three candidates for each position, and the Bank will select the most apt, keeping the right to request changes during performance of the work.

#### **VII. DEADLINES AND REPORTS**

- 7.1 The consultancy will begin the field work no later than 30 days as from the date of execution of the contract with the Bank.
- 7.2 The consultancy will produce three reports, as indicated in the terms of reference, an initial report, a mid-term report and a final report. The report presentation deadlines are to be counted as from the date of commencement of field operations: (i) the initial report will be presented within 10 days following the beginning of the field work; (ii) a mid-term report will be presented at the end of the third month of consultancy; and (iii) a final report will be presented no later than 15 days after the end of the field work.
- 7.3 The initial report will adjust or confirm the terms of reference and present a detailed workplan.
- 7.4 The succinct mid-term report will describe the progress made by the team's activities vis-à-vis the workplan and the consultancy's objectives.
- 7.5 The final report will include no less than the following: (i) an evaluation of the level of compliance with the consultancy's objectives; (ii) a succinct description, including diagrams, budgets and other necessary material to show designs, preliminary designs, terms of reference, and other deliverables by the firm; (iii) such additional information as may be useful to the Bank in drawing up the project's document.
- 7.6 The consultancy will draw up all its reports using the WordPerfect 5.1 word processor, either the Lotus 123 or Excel spreadsheets, and, if appropriate, the Timeline programmer.

#### **VIII. COORDINATION AND SUPERVISION**

- 8.1 The Bank's project team leader will be directly responsible for supervising the consultants' work. In the field, the consultancy's work will be coordinated by the expert designated for that purpose by the Bank's Field Office in Bolivia (FBO), and by the MDSMA's project official.
- 8.2 The consultancy will designate: (i) a project technical supervisor, based in the firm's headquarters, who will be directly in touch with the Bank's project team leader; (ii) a project operations and financial supervisor, also based in the firm's headquarters, who will be in touch with the Bank's contract section; and (iii) a field technical project manager.



## APPENDICES

- Appendix A Schematic table of contents and project's preliminary structure, and its relationship with the preparatory activities to be performed by the consultancy.
- Appendix B Organizational chart of the environmental management systems for the project.
- Appendix C Tentative outline of thematic areas that could be covered in analyzing the opportunities for participation by the private sector in the provision of environmental services.
- Appendix D Tentative work schedule
- Appendix E General form for the presentation of project reports to the Bank.

**SCHEMATIC TABLE OF CONTENTS AND PROJECT'S PRELIMINARY STRUCTURE,  
AND ITS RELATIONSHIP WITH THE PREPARATORY ACTIVITIES TO BE PERFORMED BY THE CONSULTANCY 1/**

| AREA   | PROJECT ACTIVITIES<br>(execution phase) |  | TASKS FOR THE CONSUTANTS FOR THE PREPRATION OF<br>THE PROJECT |   |
|--|---|--|---|---|
| INSTITUTIONAL<br>STRENGTHENING<br>OF THE MDSMA               |   |  |   |   |
| General support  | 1                                       | Organizational<br>development of the MDSMA   | 1,1   | Analysis of mechanisms of internal coordi-<br>nation and opportunities to make them more<br>efficient and effective |
|  |   |  | 1,2   | Elaboration and presentation of recommen-<br>dations  |
|  | 2                                       | Improvement of the<br>administrative capacity<br>of the MDSMA as executor<br>of the project                | 2,1   | Revision of administrative and accounting<br>mechanisms for the execution of the loan                               |
|  |   |  | 2,2   | Develop a manual of the accounts, adminis-<br>trative procedures and operation of the<br>loan                       |
| Development of<br>the national<br>system of<br>preinvestment | 3                                       | Design norms and proced-<br>ures for<br>institutionalizing the<br>national system of pre-<br>investment    | 3,1   | Develop TOR of the activity and<br>preliminary cost estimates   |
|  | 4                                       | Development, application<br>and evaluation of manuals<br>for the elaboration of<br>preinverstment projects | 4,1   | Develop TOR of the activity and<br>preliminary cost estimates   |

excluded from this task list, the analysis of general viability of the operation, the analysis of economic feasibility and the analysis of  
ental viability because they are general tasks that are not assigned to a certain component or activity of the future project in particular. Such  
e duly included in the Terms of Reference.

| AREA    | PROJECT ACTIVITIES<br>(execution phase)  | TASKS FOR THE CONSUTANTS FOR THE PREPRATION OF<br>THE PROJECT  |
|---------|--|--|
| cont. B | 5 Establish a mechanism for an orderly integration of preinvestment projects in the national preinvest-ment system                         | 5,1 Develop TOR of the activity and preliminary cost estimates |
|         | 6 Develop a methodology for the application of the national development strategy through specific projects                                 | 6,1 Develop TOR of the activity and preliminary cost estimates |
|         | 7 Develop a methodology for the project generation, elaboration, evaluation and follow up  | 7,1 Develop TOR of the activity and preliminary cost estimates |
|         | 8 Design a computarized system to manage the technical cooperation program to ensure that it responds to the national development strategy | 8,1 Develop TOR of the activity and preliminary cost estimates |
|         | 9 Systematic and methodologic design for the administration of the scholarships program  | 9,1 Develop TOR of the activity and preliminary cost estimates |

| AREA  | PROJECT ACTIVITIES<br>(execution phase)   | TASKS FOR THE CONSULTANTS FOR THE PREPARATION OF<br>THE PROJECT |   |
|---|---|---|---|
| Support the development of regulations and norms associated with legislation on sustainable development | 10 Develop bills, regulations and/or selected norms   | 10,1  | Review and update needs in terms of legislation, regulation and/or norms that can be developed with external technical assistance |
|   |   | 10,2  | Select topics that could be carried out with the IDB's support  |
|   |   | 10,3  | Develop TOR of the activity and preliminary cost estimates  |
| Land use planning and natural resource administration   | 11 Partial equipment of the undersecretaries for land use planning and natural resource management  | 11,1  | Analyze needs and estimate level of investment required   |
|   | 12 Design and implementation of the national environmental information system   | 12,1  | Preliminary design and preliminary cost estimates. TOR for the final design activity and for the implementation of the system     |
|   | 13 Design and implementation of the national environmental monitoring system  | 13,1  | Preliminary design and preliminary cost estimates. TOR for the final design activity and for the implementation of the system     |
|   | 14 Design and implementation of the forestry resources planning and management system of (integrated with the general systems: information, monitoring and control) |   |   |

|  | AREA    | PROJECT ACTIVITIES<br>(execution phase)  | TASKS FOR THE CONSUTANTS FOR THE PREPRATION OF<br>THE PROJECT |   |
|--|---------|--|---|---|
|  | cont. D | -geographic information system for forestry resources  | 14,1  | Preliminary design  |
|  |         | - eco-forestry land use planning system (maps)   | 14,2  | Preliminary design  |
|  |         | - forestry administration system   | 14,3  | Develop TOR of the activity and preliminary cost estimates      |
|  |         | - forestry monitoring system   | 14,4  | Develop TOR of the activity and preliminary cost estimates      |
|  |         | 15 Design and implementation of the sustainable watershed management planning system   |   |   |
|  |         | -microregion detailed zoning in the Pilcomayo watershed; primary information gathering; develop inputs for the country-wide land use zoning policy | 15,1  | Develop microregions' selection criteria in the Pilcomayo river |
|  |         |  | 15,2  | Develop TOR of the activity and preliminary cost estimates      |

| AREA    | PROJECT ACTIVITIES<br>(execution phase)  | TASKS FOR THE CONSULTANTS FOR THE PREPARATION OF<br>THE PROJECT |  |
|---------|--|---|--|
| cont D. | <p>-review and analysis of existing information for the Madre de Dios watershed, and more generally, for the whole of the great amazonian watershed in Bolivian territory; develop inputs for the country-wide zoning policy</p> | 15,3  | Develop TOR of the activity and preliminary cost estimates             |
|         | <p>-review and analysis of existing information on the Titikaka lake watershed, and more generally, for the great endorreic watershed; develop inputs for the country-wide zoning policy</p>                                     | 15,4  | Develop TOR of the activity and preliminary cost estimates             |
|         | <p>-homogeneización y análisis de información secundaria para la subcuenca of the Ichilo-Chimoré-Yapacaní rivers; y generación de aportes para la política de zonificación general del país</p>                                  | 15,5  | Develop TOR of the activity and preliminary cost estimates             |
|         | <p>16 Design the Land Use Planning Institute (or its equivalent)</p>   | 16,1  | Analysis of alternatives and conceptualization of the future Institute |

| AREA                          | PROJECT ACTIVITIES<br>(execution phase)   | TASKS FOR THE CONSULTANTS FOR THE PREPARATION OF<br>THE PROJECT  |
|-------------------------------|---|--|
| cont. D                       |   | 16,2 Preliminary design of the Institute, develop TOR of the activity and preliminary cost estimates                       |
| Environmental quality control | 17 Design and implementation of the national environmental quality control system                                 | 17,1 Preliminary design and preliminary cost estimates. TOR for the final design activity and implementation of the system |
| Public awareness              | 18 Support of the integration of the environmental themes in formal and non formal education                      | 18,1 Develop TOR for the activity and preliminary cost estimates   |
|                               | 19 Review and design of training programs in environmental education  | 19,1 Develop TOR for the activity and preliminary cost estimates   |
|                               | 20 MDSMA's public awareness campaign  | 20,1 Preliminary design and preliminary cost estimates. Develop TOR for the activity                                       |
|                               | 21 Design education for sustainable development guidelines and policies directed towards specific target groups   | 21,1 Develop TOR for the activity and preliminary cost estimates   |
|                               | 22 Establish a national coordination system in support of the implementation of the national development strategy | 22,1 TOR of the consultants  |

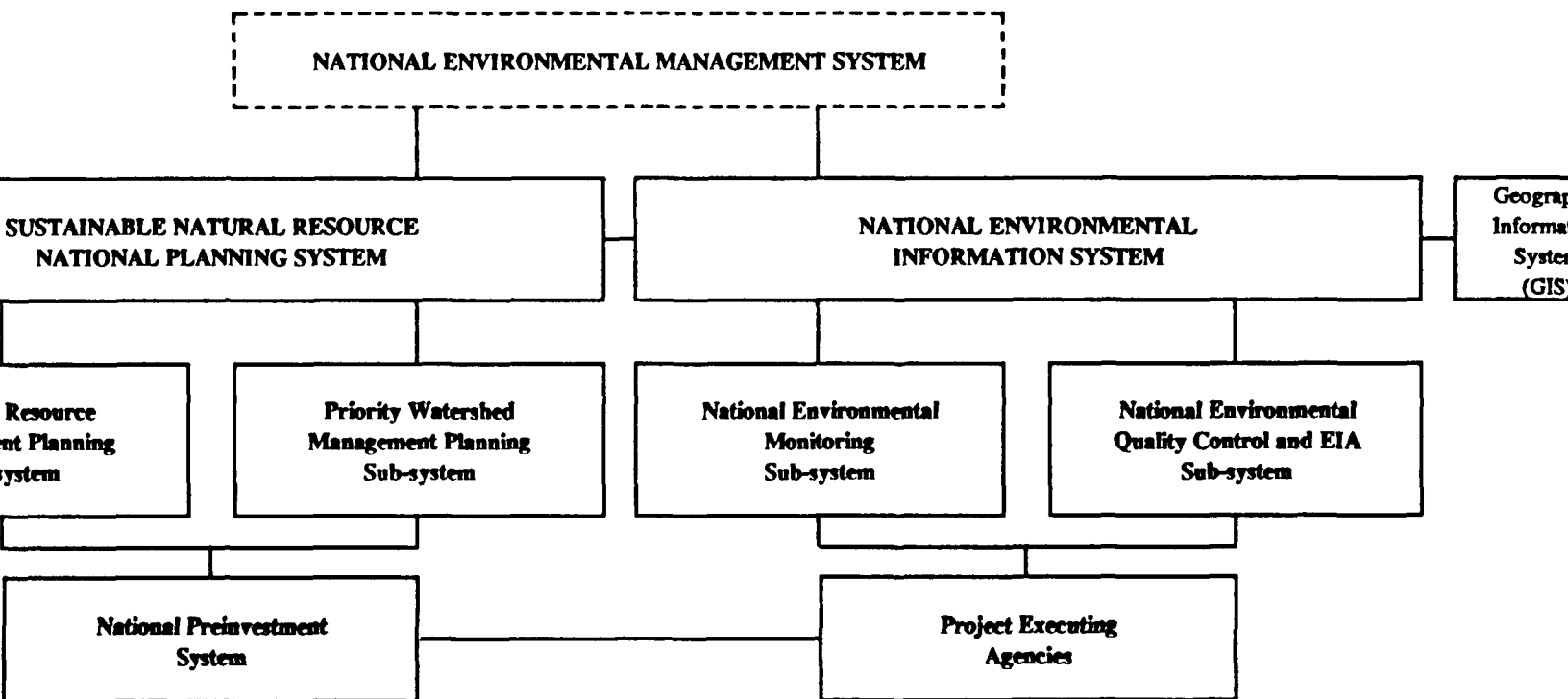
| AREA   | PROJECT ACTIVITIES<br>(execution phase)   | TASKS FOR THE CONSUTANTS FOR THE PREPRATION OF<br>THE PROJECT    |
|--|---|--|
| INSTITUTIONAL<br>STRENGTHENING<br>OF DEPARTMENTAL<br>AND SECTORIAL<br>ENTITIES | 23 Develop procedures for the implementation and supervision of EIA in the specialized sectorial units, in the context of the environmental impact evaluation and control systems   | 23,1 Develop TOR for the activity and preliminary cost estimates |
|  | 24 Option A: Decision regarding government structures at the departmental level has been taken<br><br>Activity:<br>Develop procedures and training of personnel from specialized departmental units so as to enable them to comply with their role in the implementation of the national sustainable development policies | 24,1 Develop TOR for the activity and preliminary cost estimates |



| AREA  | PROJECT ACTIVITIES<br>(execution phase)   | TASKS FOR THE CONSULTANTS FOR THE PREPARATION OF<br>THE PROJECT   |
|---|---|---|
|   | Option B: Decision regarding the structure of government at the departmental level had not been made at the time of field work initiation | <div>24,2</div> <div> <p>Technical report on advantages and disadvantages of each of the alternatives being considered.</p> <p>No further activities are considered, since this area would most probably be excluded from the project is the corresponding decision has not been made by this time.</p> </div> |
| SUPPORT TO THE PARTICIPATION OF THE PRIVATE SECTOR IN THE PROVISION OF ENVIRONMENTAL SERVICES | 25  | <div>25,1</div> <div>Analysis of context, possibilities and overall feasibility in political and technical terms of potential privatization and/or private provision of public services in the environmental area</div>  |
|   |   | <div>25,2</div> <div>Selection of three cases which present potentially favourable conditions for the purpose</div>  |
|   | 26  | <div></div> <div>Proposal for privatization and/or private provision of public services</div>  |

Appendix A

## ORGANIZATIONAL CHART OF THE ENVIRONMENTAL MANAGEMENT SYSTEMS IN THE PROJECT



## Appendix C

### TENTATIVE OUTLINE OF THEMATIC AREAS THAT COULD BE COVERED IN ANALYZING THE OPPORTUNITIES FOR PARTICIPATION BY THE PRIVATE SECTOR IN THE PROVISION OF ENVIRONMENTAL SERVICES

#### I. Objective

The proposed analysis would serve the following purposes: (i) to the extent that the services are supplied by the public sector, analyzing the possibilities and feasibility of transferring certain functions to the private sector; and (ii) as to services not generated or supplied at present, considering the possibilities of same being provided by the private sector.

#### II. Areas previously identified as research objects

- a. Solid wastes management:
  - (1) Garbage collection
  - (2) Refuse dump management
  - (3) Garbage treatment, including recycling
- b. Urban development:
  - (1) Urban environmental planning services
  - (2) City cleaning
  - (3) City parks management
- c. Pollution and decontamination control
  - (1) Effluents management and reduction
  - (2) Effluents treatment
  - (3) Pollution measurements
  - (4) Technical assistance for pollution prevention or decontamination
- d. Monitoring
  - (1) Routine control
  - (2) Specific services aimed at the user (laboratories)
  - (3) Data collection stations
  - (4) Data processing
- e. Forest management
  - (1) Forest and woodland ownership
  - (2) Commercial exploitation
  - (3) Protection
- f. Agriculture and food production
  - (1) Agro-toxic substance control
  - (2) Technical services in sustainable and organized agricultural practises.
  - (3) Food quality control

- g. Water management
  - (1) Irrigation water management
  - (2) Drinking water supply and sewage schemes
  - (3) Small- and large-scale hydroelectric power stations
  - (4) Freshet control and land reclamation
  - (5) Navigation management
  - (6) Fishery management
  - (7) Leisure management
- h. Protected areas
  - (1) Protected areas management
  - (2) Protected areas ownership
  - (3) Ecotourism
- i. Wildlife management
  - (1) Exploitation
  - (2) Conservation
- j. Associated services
  - (1) Incentives management
  - (2) Financing, including credit
  - (3) Legislation
  - (4) Legal services (land tenure)
  - (5) Permit systems (in particular the "green seal")
  - (6) Technical assistance
  - (7) Collection (taxes)
  - (8) Promotion

## TENTATIVE WORK SCHEDULE

[illegible]

Appendix E  
General form for the presentation  
of project reports to the Bank.

PROJECT REPORT FOR INVESTMENT LOAN 1/ 2/

TABLE OF CONTENTS

ABBREVIATIONS

**I. SUMMARY OF THE OPERATION**

**PURPOSE:** Briefly define the objectives and summarise the basic aspects that justify the operation.

Generate basic information about the project/programme, e.g. borrower and guarantor, executing agency, loan application date, objectives and concise description of the project/programme, funding scheme, terms and conditions for the financing, benefits and risks.

**II. BACKGROUND**

**PURPOSE:** Describe the general situation to be affected by the proposed operation.

Briefly describe the macroeconomic and sectoral background for the proposed operation, highlighting those development aspects that play a particularly important role in bringing the operation about, and how they are considered. Explain the reason for the Bank's financing based on the country's development strategy, the programmes agreed to between the Bank and the country, the field programme envisaged and the previous experience gained by the Bank or other credit agencies in the country.

**III. THE PROJECT**

**PURPOSE:** Present the main components of the project/programme

Describe all of the proposed project's objectives and components, including the technical cooperation ones, whenever they are part of the loan package or run parallel to the loan. Explain the criteria followed to evaluate the operation. Provide detailed information about the cost and funding of the operation, including the amount, state of progress, work

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1/ Briefness is of the essence. Total length is expected to be around 30-40 pages. Length considerations, however, should not prevent the team from describing the project clearly and convincingly and from laying out the relevant information and problems.

2/ State the name of the Chief and the other Project Team members.

schedule, as well as details of any co- financing or parallel financing and of counterpart funds in local currency. Indicate what impact on specific beneficiary groups is expected of the programme/project.

#### **IV. PROJECT EXECUTION**

**PURPOSE:** Explain arrangements made for the project's execution on the institutional level as well as for field work.

State clearly what institutional/field work arrangements have been made for the execution of the project (borrower, executing agency(ies), coordinating and executing units, etc.). Identify and explain the level of preparation of the project, the acquisitions to be made and a preliminary schedule therefor, as well as the steps of the procedure to be followed for the acquisitions (any exception to the rule must be described in detail). In the case of global loans and multiple global operations, the main credit or operating rules components and the eligibility criteria must be explained. Describe the procedure for the follow-up and the ex-post evaluation of the operation as a whole and of special interest areas (to be identified), including a description of the basic information requirements for a proper performance of this function. Set forth the investment schedule designed for the operation, highlighting the disbursement arrangements.

#### **V. BORROWER AND EXECUTING AGENCY**

**PURPOSE:** Justify the execution capabilities of the main institutions taking part in the project.

Produce basic information about the participating institutions' organizational and financial capabilities. This information should include summaries of organizational structures, legal standing, personnel training level, main operational activities (past and present), and financial situation. Any financial or institutional weakness to be focused on and remedied by the project should be highlighted in this chapter.

#### **VI. FEASIBILITY AND RISKS**

**PURPOSE:** Determine the feasibility of the project and the operation.

Produce a summary of the analyses carried out in order to demonstrate that this is a feasible operation from the economic, financial, technical, environmental and institutional standpoints, and to establish its impact on low-income groups and working women. Identify the main assumptions\*\*both within and without the project's scope\*\*underlying the case for the operation's feasibility. Provide details on the major risks that might jeopardize the success of the operation and its expected impact, and explain what has been done to contain those risks.

#### ANNEXES

(If necessary). In every case, the Proposal should include a descriptive index of all the available annexes available for consultation by the Board of Executive Directors.

1. Basic socioeconomic information
2. Status of Bank's operations in the country
3. Technical Cooperation Plan of Operation
4. Credit Regulations
5. Technical analysis
6. Institutional and financial analysis
7. Legal report
8. Environmental evaluation
9. Socioeconomic evaluation
10. Map of the country showing the project's location
11. Acquisition Procedures (Annex B to the Loan Contract)
12. Selection and Engagement of the Consultancy (Annex C to the Loan Contract)

#### APPENDICES

1. Draft Resolution
2. Recommendations
3. The Project/Programme (Annex A to the Loan Contract)



**ANNEX III**

**BENEFICIARIES'  
OFFICIAL APPLICATION**



## **Ministerio de Desarrollo Sostenible y Medio Ambiente**

La Paz, diciembre 1º de 1993  
MDS/SNP/Nº 090/93

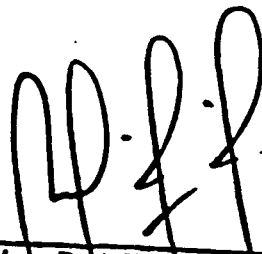
Señor  
Johann A. Schmalzle  
Represente del BID  
Presente

Señor Representante:

Tengo a bien dirigirme a usted con el objeto de solicitar al Banco Interamericano de Desarrollo, la consideración del otorgamiento de una cooperación técnica no reembolsable, a través del CTFondos Italianos (IRI) por \$us 800.000, para contribuir a preparar el Proyecto de Fortalecimiento Institucional y Definición de Estrategias para el Ministerio de Desarrollo Sostenible y Medio Ambiente, cuyo financiamiento fue considerado favorablemente en la misión de programación del BID en Bolivia en el mes noviembre del año en curso.

Esperamos la favorable atención de nuestra solicitud a la menor brevedad posible, con el propósito de poder acelerar la preparación del señalado proyecto, que tiene una alta prioridad dentro de las acciones de desarrollo del país.

Con este motivo, saludo a usted muy atentamente.

  
Lic. Alfredo Erwin Kreidier Guilaux  
SECRETARIO NACIONAL DE PLANIFICACION  
Ministerio de Desarrollo Sostenible  
y Medio Ambiente

cc Helena Landázuri  
Departamento de Análisis de Proyectos  
División de Protección al Medio Ambiente

**ANNEX IV**

# **DETAILED BUDGET**

| #   | Items   | xmo  | #mos | subtotal | xuni | #uni | subtotal | Totals |
|-----|---|------|------|----------|------|------|----------|--------|
| 1   | Consulting Firm   |      |      |          |      |      |          | 800000 |
| 1.1 | Consulting Firm Fees  |      |      |          |      |      |          | 771470 |
| a   | Intl Consultants Honoraria  |      |      |          |      |      |          | 278000 |
|     | Environmental specs. (prj.mngr)                                     | 9000 | 6    | 54000    |      |      |          |        |
|     | Institutional specialist  | 7000 | 4    | 28000    |      |      |          |        |
|     | Projec development specialist                                       | 7000 | 2    | 14000    |      |      |          |        |
|     | Hydrologist   | 7000 | 5    | 35000    |      |      |          |        |
|     | Agronomist  | 7000 | 3    | 21000    |      |      |          |        |
|     | Forestry specialist   | 7000 | 4    | 28000    |      |      |          |        |
|     | Natural resource economist  | 7000 | 3    | 21000    |      |      |          |        |
|     | Information systems specialist                                      | 7000 | 4    | 28000    |      |      |          |        |
|     | Environmental legislation spec.                                     | 7000 | 3    | 21000    |      |      |          |        |
|     | Financial specialist  | 7000 | 4    | 28000    |      |      |          |        |
| b.  | Local consultants honoraria   |      |      |          |      |      |          | 108000 |
|     | Forestry  | 3000 | 6    | 18000    |      |      |          |        |
|     | Watershed management  | 3000 | 6    | 18000    |      |      |          |        |
|     | Protected areas   | 3000 | 6    | 18000    |      |      |          |        |
|     | Assistant to the financial spec.                                    | 3000 | 6    | 18000    |      |      |          |        |
|     | Sociologist   | 3000 | 6    | 18000    |      |      |          |        |
|     | Environmental education spec.                                       | 3000 | 6    | 18000    |      |      |          |        |
| c.  | General Expenses (50%overhead<br>over international cons.honoraria) |      |      |          |      |      |          | 139000 |
| d.  | Direct Costs  |      |      |          |      |      |          | 246470 |
|     | International travel (intl.cons)                                    |      |      |          | 3000 | 10   | 30000    |        |
|     | Int'l traves technical supervisor                                   |      |      |          | 3000 | 3    | 9000     |        |
|     | Int'l travel operations supervisor                                  |      |      |          | 3000 | 1    | 3000     |        |
|     | Per diem international consultants<br>(9px90dx\$106) + (9mosx\$64)  |      |      |          |      |      | 103140   |        |
|     | Per diem int'l cons.(1 x 60 days)                                   |      |      |          | 106  | 60   | 6360     |        |
|     | Per diem supervisores   |      |      |          | 106  | 60   | 6360     |        |
|     | Per diem local consultants<br>(70dx\$84) + (35dx\$78) + (100dx\$50) |      |      |          |      |      | 13610    |        |
|     | Local transportation (rental)                                       | 3000 | 6    | 18000    |      |      |          |        |
|     | Supplies  | 4500 | 6    | 27000    |      |      |          |        |
|     | Satellite Imagery   |      |      |          | 1000 | 30   | 30000    |        |
| 1.2 | Equipment   |      |      |          |      |      |          | 28530  |
|     | PCs   |      |      |          | 3500 | 6    | 21000    |        |
|     | Laserjet printers   |      |      |          | 2510 | 3    | 7530     |        |
|     | TOTAL   |      |      |          |      |      |          | 800000 |

**ANNEX V**

**CERTIFICATION OF  
FUNDS AVAILABILITY**

## Anexo V

# CERTIFICACION

CT/Fondos-Italia (TC-93-10-25-2-BO)

Proyecto de Fortalecimiento Institucional y  
Definición de Estrategias para el  
Ministerio de Desarrollo Sostenible y Medio Ambiente

En relación con el Memorandum-Plan de Operaciones de la TC-93-10-25-2-BO, certifico que existen los recursos suficientes en el Fondo Italiano (IRI) por hasta la suma del equivalente de US\$800.000, disponibles para financiar las actividades previstas en dicha operación.



Timothy D. Fauquier, Jefe  
Unidad de Cooperación Técnica

Jun. 5 / 94  
fecha