

INTER-AMERICAN DEVELOPMENT BANK



URUGUAY

M'BOPICUA PORT

***ENVIRONMENTAL AND SOCIAL IMPACT REPORT
(ESIR)***

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LIST OF ABBREVIATIONS

AAP	<i>Autorización Ambiental Previa</i> , the environmental authorization or permit
ACE	<i>Autorización de Construcción y Explotación</i> , the construction and exploitation authorization or permit (valid for port activities)
ANP	National Port Administration, (Decentralized service in charge of the ports of Montevideo, Colonia, Nueva Palmira and Fray Bentos)
CARU	<i>Comisión Administradora del Río Uruguay</i> , the Bi-national Commission in charge of the administration of the Uruguay River, and formed by Uruguay and Argentina
CNPH	<i>Comisión Nacional de Patrimonio Histórico</i> , the Historic and Archeological National Commission
DINAMA	<i>Dirección Nacional del Medio Ambiente</i> , the National Environmental Authority
DNH	<i>Dirección Nacional de Hidrografía</i> , the National Hydrographic Department, MTOP
DNV	<i>Dirección Nacional de Vialidad</i> , the National Route Division/Authority, MTOP
DNT	<i>Dirección Nacional de Transporte</i> , the National Transportation Division/Authority, MTOP
ENCE	<i>Empresa Nacional de Celulosa de España</i> , the owner of EUFORES
EIA	<i>Estudio de Impacto Ambiental</i> , the environmental impact study
GOU	Government of Uruguay
MARPOL 73/78	International convention that regulates the discharges into the sea and waste management in boat and port activities
MOVITDE	A non-governmental organization located in Fray Bentos
MTOP	<i>Ministerio de Transporte y Obras Públicas</i> , the Ministry of Transportation and Public Works
MTSS	Ministerio de Trabajo y Seguridad Social, Ministry of Employment and Social Security
MVOTMA	<i>Ministerio de Vivienda, Ordenamiento Territorial y Medio Ambiente</i> , the Ministry of Housing, Planning and Environment
OHSMS	Occupational Health and Safety Management System
OSE	<i>Obras Sanitarias del Estado</i> , the national company in charge of sanitary works (including potable water supply and sewerage system)
UTE	<i>Usinas y Transmisiones Eléctricas</i> , the national division in charge of power plant and electric transmission line, Ministry of Industry, Energy and Mining

I. INTRODUCTION

- 1.1 The IDB is considering financing the Port and industrial complex of M'Bopicuá, to be built and operated by *Terminal Logística e Industrial M'Bopicuá S.A.* ("TLM"). The Project is to be located on the Uruguay River, 12 kilometers (km) of Fray Bentos, in the northwest region of Uruguay (*Departamento de Rio Negro*). TLM is a private Uruguayan company whose shareholders are Uruguayan and Spanish firms involved in the forestry and port sectors. The Project is being created in order to service recent growth in the sustainable forestry industry in northern Uruguay and Argentina, but is also expected to service other bulk cargoes such as agricultural products.
- 1.2 The Project consists of a greenfield wood products export port facility on the Uruguay River. The Port will service primarily certified eucalyptus plantations in the northern and western regions of Uruguay established by EUFORES S.A. (Also certified with ISO14001), for mostly wood chips, though some logs and sawn timber will also be exported. There is also some possibility for export of wood products from other producers in the future, and for some export of rice and citrus fruits (possibly containerized). The forest development (30,000 ha approximately) started about ten years ago under investment incentives of the Government of Uruguay. The Port will provide safe, reliable and efficient port services for the wood and agriculture sectors while alleviating port congestion and deterioration at other neighboring port facilities in the region, mainly Fray Bentos.
- 1.3 The Project was conceived to be developed in three phases, although there are no estimated time for the implementation of phases 2 and 3 in the medium-term future. Phase 1 is that under consideration by the IDB and consists of the basic port components, and associated infrastructures, which could be expanded during phases 2 and 3 (See Section II. A for a description of the three phases and Section B for a description of Port components).
- 1.4 The Bank's participation in the Project is estimated to take the form of an A/B Loan for approximately US\$21.0 million. The total Project cost is estimated at approximately US\$36 million.

II. PROJECT DESCRIPTION

A. Site Location

- 2.1 The Project area is located 12 km to the east (upstream) of Fray Bentos, an agricultural and forestry port on the Uruguay River (which serves as the natural border between Uruguay and Argentina). Fray Bentos is located approximately 300 km to the northwest of Montevideo, the capital of Uruguay (See Figures 1 and 2).
- 2.2 The Project site is located on a large stretch of land purchased in 1997 by EUFORES, the principal member of the Sponsor group. The overall project site being prepared encompasses approximately 60 ha of land; part of the area is reserved for future expansion.
- 2.3 Phase 1 consists of the basic port components, which include the wharf, the storage facilities, wood-chipping plant and distribution system, the access road and other associated infrastructures, such as electricity and telephone connections, potable water and sewage systems, among others

(See section 2.B. - Project Components and Facilities). Phase 2 consists of the expansion of the main installations, construction of a second chipping plant, reclamation and automatic loading system, with the correspondent infrastructures and equipment. Phase 3 consists of the extension of the main wharf up to 414 meters, and the construction of the third chipping plant and associated infrastructures and equipment.

- 2.4 Although the environmental permit applies to a “Port and Industrial Complex”, and the possibility of a pulp and paper mill at the site has been mentioned, there appears to be no definite plan or timetable to expand the operations to this level in the medium-term future. Phase 1 operations do not envisage the installation of a fuel station or handling of hazardous wastes in the Port facilities.

B. Project Components and Facilities

- 2.5 The Project's Phase 1 consists of (i) basic port infrastructure; (ii) storage facilities including a wood-chipping plant; (iii) an access road to the national highway system; and (iv) other infrastructure and equipment, as described in detail below (See Figures 2 and 3).

Port Infrastructure

- 2.6 The principal activity will involve the construction of a berth (192 m long) and a docking facility extending an average of 130 m into the river from the existing riverbank. The docking facility is capable of handling ships of Panamax type in the 60,000 ton range. The structure itself will consist of a cellular system using large steel sheet pile sections with connecting arcs. The sheet piles will be driven 10 m into the river bottom and the cells, so formed, filled with granular material, after first removing soft material. A low, reinforced concrete retaining wall, which also contains a services trench, will be located on top of the cells and form the berthing face of the wharf. Two additional, cellular steel sheet pile structures will form mooring dolphins, accessed by walkways, in line with the wharf, one upstream and one downstream.
- 2.7 The area enclosed by the wharf, the return walls and the shore is to be filled with granular material to provide a foundation for a paved area, on which will be located the storage area for wood chips. The wharf will be implemented over a filled area of approximately 3.5 ha. The filling will require approximately 200000 m³ of filling materials, being 50000 m³ a combination of fine-grained by-product material and sand (produced as a result of the washing of quarried material) to fill the support cells, and 150000m³ of materials from riverbed sources to backfill behind the cells (allowing for compaction).
- 2.8 The chipping plant, parking and other supporting facilities will be located on the landside-paved area. The Phase 1 port design provides for flexibility in cargo handling. Should container traffic develop requiring heavy wheel loads (mobile cranes, stackers or heavy duty forklift trucks) then the additional loading could be accommodated with the cellular design.

Storage Facilities and Wood-chipping Plant

- 2.9 The M'Bopicuá Terminal will be equipped with storage areas for chips (3.2 ha), logs, lumber, and other products (7.5 ha). The Terminal plan is flexible to allow eventual shipping of agricultural products. The primary storage areas will cover approximately 10 ha in extent and adjacent to the logs storage area will include a self-contained, wood-chipping plant with 650000 m³/year of operational capacity. This facility (approximately 800 m²) includes chipping machinery and conveyor belts to carry the logs in and the chips out of the processing plant. The wood chips are carried on a climbing conveyor and discharged onto an elevated conveyor that feeds two, parallel tripper conveyors. These tripper conveyors discharge the wood chips onto two triangular-shaped piles (each approx. 30 m high, 60 m wide and 180 m long). The wood chips are rehandled, relocated and reclaimed by front-end loaders that load the wood chips into rear dump trucks which discharge into the belt feeder of two mobile stackers. The mobile stackers can be located over a given ship hatch, as required.

Access Road

- 2.10 A paved access road, approximately 7 km long, will be constructed. The road will be a two-lane (12 m wide) road with adequate capacity to handle large trucks traveling in each direction. The entire length of the access road will be built on land owned by the Sponsor. The access route provides for a direct connection to National Route No. 24, which services northern Uruguay and will connect the new terminal to the surrounding agricultural areas, and to Fray Bentos to the west. This alignment and specific interchange link was selected in order to minimize traffic on the National Route No. 2, which carries tourism traffic during the summer months from Argentina across the Brigadier General San Martin International Bridge to Montevideo and Punta del Este. The direct connection allows trucks carrying logs to avoid entering onto National Route 2 in either direction, loaded or unloaded.
- 2.11 At the end of the access road before reaching the access/control of entry building, a parking/waiting area for trucks will be provided. This area of approximately 5400 m² allows 12 diagonal parking slots plus additional unmarked waiting area.

Other Associated Infrastructure and Equipment

- 2.12 Although some of the details may change during final designs, which are due by the end of September 2002, the conceptual designs of the service infrastructure are described below.
- 2.13 Power supply: There will be a connection with the national power grid. The local power company, UTE, will install a high voltage line of 30 kV to provide electricity to the Project facilities. The electric transmission line will have a length of approximately 5.3 km. This feeder will connect to Substation SE-1, from where two additional substations will be fed, where current will be reduced to 380 volts. The power line will have a right-of-way (ROW) of 30 meters as established by the relevant code, and will be entirely contained in the Sponsor's property.
- 2.14 Potable water supply: The basic source of potable water for the terminal and all its supporting facilities will be the river via two pumps. The system supplies the entrance buildings, administration, security, and service buildings, and to ships at berth. This system is also designed

to provide water for fire fighting. The total water requirements were estimated at approximately 400 m³/day. The pumps can pump up to 60 m³/hour in order to provide the required pressure of 4.5 kg/cm² at the furthest point, as required by the Fire Code.

- 2.15 Wastewater Treatment: Detailed design is not yet available but the basic (preliminary) design has been approved by DINAMA. The basic design assumes a production of 120 liters per equivalent inhabitant/day of wastewater¹, with a production of fresh “sludge” (mud) of 1 liter per equivalent inhabitant/day. The material to be treated is to be sent to two, in-line stabilization (digestion) ponds. The specification of the two digesting pond will comply with Decree 253/79 that regulates the Water Code Law 14859 (*Código de Aguas, Ley 14859*) and, primarily, will be to reduce BOD, and to reduce total solids. The maximum effluent flow is estimated at 96 m³/day, with a retention time of 56 days as a minimum, and assuming 120 kg of BOD₅/ha. The system includes a collecting system for sanitary wastewater from buildings and stormwater runoff from the wharf area, chipping plant and other areas to the stabilization ponds. The wastewater will be passed through an oil separator facility previously to entering the digestion ponds. The final disposal of the effluent will be to infiltration fields (leaching fields) and could also be used for watering *Eucalyptus* plantations.
- 2.16 In the wharf area, the system will include a pump house, which will receive discharges from the buildings and the run-off from the wharf areas, with a holding tank of 40 m³. The pumping rate and holding arrangements are designed to accommodate a 1 in 10 year storm. The chips storage area runoff water is to be intercepted and screened by 5cm screen (to a Canadian standard) before being pumped to the wastewater treatment facility from the 40 m³ holding tank. The berth area runoff is to be intercepted and directed to the wastewater treatment facility.
- 2.17 A solid waste treatment: The solid wastes will be disposed on a managed landfill located on the Project site. The landfill design will be based on the following estimations of wastes to be produced: by-products from the chipping plant (bark, wood, small offcuts and sawdust) from 17 m³/day in 2003 up to 26 m³/day by 2005; composting requirements of 50 m³/day, with volumes per year of 6000 m³ (2003), 7500 m³ (2004) and 9000 m³ (2005), distributed in eight piles. Sanitary solid wastes from ships is anticipated to be up to 10m³ per ship (giving 17m³ per week) and 13m³/day from buildings and from the stabilization ponds.
- 2.18 Fire prevention systems: The water for the fire fighting system will be entirely drawn from the river. The distribution system consists of pumping system, piping and hydrants (via pumping truck), and will be compliant with OSE and “Firefighters National Directorate” Norms. Four elevated tanks of 10 m³ capacity will be installed on concrete supports of 13 m high.
- 2.19 Other support infrastructure includes an access/control of entry building, control towers, administrative offices, and a security building, which also provides space for DNH, and a separate facility for customs.

Port Operations

- 2.20 The Port operations will involve primarily logs and wood-chips transportation and loading and associated activities. Logs will be received at the Port and transported to the storage area stockpile, and from there to either the ship's side for loading by the ship's gear (at a loading rate of approximately 9 thousand m³/day) or to the chipping plant. The wood chips will be then stored at the wood-chips storage area and transported to mobile loading conveyors by truck. The distance from storage to the loading conveyors is short (less than 800 meters), thus allowing for high transport productivity and loading rates of approximately 10 thousand ton/day.
- 2.21 These operations will generate terrestrial and maritime traffic. During the first operational years of the Project, the terrestrial traffic was estimated at 30,000 trucks/year at an annual average daily traffic of 84 trucks/day (average of 3.5 trucks/hour). This is the traffic that corresponds to the existing demand and that would otherwise be directed to Port of Fray Bentos (*Trafico derivado*). Similarly, in relation to maritime traffic, an estimated 19 ships/year are expected for timber wood embarkation and 16 ships/year for wood chips embarkation, in year 2003. These numbers will increase to 48 ships/year for wood chip embarkation in the year 2014. Also this is the traffic that corresponds to the existing demand and that would otherwise be generated in the Port of Fray Bentos.

C. Project Workforce

- 2.22 During the construction phase, the Project will generate approximately 150 direct employment positions during a period of 18 months. Indirect employment positions have been estimated at about 50 positions.
- 2.23 During the operational phase, the Project expects to employ 87 direct hires (61 permanent positions and 26 temporary positions in the year 2003). This figure includes the wood-chipping facility staffing of 3 to 5 workers in two or three shifts (6 to 15 in total). During the operational phase, indirect employment has been estimated at approximately 5,000 jobs.

D. Project Sponsors, Schedule and Costs

- 2.24 TLM is an Uruguayan private company which main shareholders are EUFORES, an Uruguayan company from *Grupo Empresarial ENCE* of Spain, and Paso Alto, a local company actively involved in the forestry industry in the country. Together, the shareholders and sponsors own approximately 100,000 hectares of planted forests. EUFORES started its plantation in 1990 and currently has approximately 30,000 net hectares of *E. Glóbulus* available in the coastal areas of the departments of Paysandú, Río Negro and Soriano, in Uruguay. Additionally, it has 10,000 hectares in the south zone of the country, totaling 40,000 net hectares planted. Their goal is to achieve sustainable production of 400,000 / 500,000 m³ in year 2005 only in the coastal areas of production.
- 2.25 The Project's development schedule includes 23 months of construction, and the operating plan includes 20 to 30 years of operation. Construction activities consisting of, primarily, ground leveling and earthmoving began in January 2002, under an EPC Contract between TLM and the

¹ It is estimated that wastewater from the vessels will also be pumped to the wastewater facilities.

Consortium CPC (an Argentinean company affiliated to ICA from México) / CIMARG (the Argentinean branch of *Soletanche Bachy* from France), and are currently scheduled to be finalized in December 2003. The dredging activities will start upon approval of the Plan by TLM and IDB, and not later than 60 days after the EPC provides the Dredging Plan.

- 2.26 The total Project costs are approximately US\$31 million, of which approximately US\$21 million correspond to the EPC Contract and US\$6 million to Equipment (including the chipping plant, distribution, loading and storage systems for chips, technical assistance and other port equipment). The remaining US\$4 million include Social benefits payable to GOU, construction contingency, cost of the land, Project supervision and quality control, and some other minor operational costs.

E. Analysis of Alternatives

- 2.28 The alternative location study for the Port started in 1995, with the analysis of the operational capacity of the existing ports (Paysandú, Fray Bentos and Nueva Palmira on the Uruguay River, Montevideo on River de la Plata and La Paloma, on the Atlantic Ocean). Nevertheless, this study concentrated in the Uruguay River alternative, given the proximity to forestry areas in the coastal and center-north regions of the country, and given that the current operations are concentrated in Fray Bentos and Montevideo.
- 2.29 This study identified the site, on the Uruguay River, where the river is divided in two branches by a set of islands. The current navigation channel is located in the Argentinean side, and the Port side is located in the Uruguayan side, where the old natural channel of the river provides a natural depth with no significant incoming sediments, thus the navigation channel has sufficient depth as to accommodate vessels of Panama 60000 DWT type without maintenance dredging requirements. The physical characteristic of the area in this site was also found to be advantageous, with a steep shelf (bluff) very near to the shoreline, almost vertical in the riverbank and a river-bottom composition appropriate to establishing the berth and docking facilities. In addition, the region surrounding M'Bopicuá in the Department of Río Negro has one of the lowest population densities in the country, at approximately 6 persons/km².
- 2.30 Another alternative that was studied was increasing the operational capacity of the port at Fray Bentos. However, this would increase traffic congestion, pollution, and traffic hazards. Heavy trucks carrying logs would continually drive through the city streets of Fray Bentos to reach the port area, thus with increasing air pollution and noise impacts and risks of accidents, specially during the summer months when there is an increase in tourism traffic from Argentina across the Brigadier General San Martin International Bridge.

III. INSTITUTIONAL AND LEGAL FRAMEWORK

A. Institutional

- 3.1 The government in the Republic of Uruguay is organized into two levels: national and departmental. The Project is located within the jurisdiction of the Department of Río Negro.
- (a) *Applicable Sector*

- 3.2 The National Hydrographic Department (DNH) is responsible for regulating some aspects of the use of the Uruguay River, including approval of the geographic area that will be used for the Port, and issuing authorization to construct and operate any port facility, and dredging activities in the river.
- 3.3 The Government of Uruguay is entitled to authorize private concessions for the use of public water bodies, provided that legal regulations and requirements are fulfilled. Such concessions can be authorized for a maximum period of 50 years, which can be renewed. There are no specific requirements for private port concessions, although such concessions must be established by means of a Law, and followed by the appropriate Decree with the concession of the correspondent water body that will be filled (if applicable).
- 3.4 In the particular case of the Port of M'Bopigua Port, given that it will develop export activities, the National Customs Authority, within the Ministry of Economy and Finance is responsible for issuing a specific authorization (*Declaratoria de Recinto Aduanero Portuario*) to enable the operation of a Customs area and the international circulation of goods.
- 3.5 Also relevant to the Project, given the bi-national characteristics of the Uruguay River, is the CARU - *Comisión Administradora del Río Uruguay*, created in 1976, which has its own regulations (See Section 3.B).
- 3.6 Although the primary applicable sector is transportation (river navigation and port activities), some components of the Project are associated with other sectors, such as electricity generation (power sector), exploitation of quarries, wastewater treatment plant (wastewater/water sector), and, indirectly, with the forest production sector. The infrastructure of public roads is regulated by the National Roads Authority (DNV); the power plant and power transmission are regulated by *Usinas y Transmisiones Eléctricas*, the decentralized service in charge of power plant and electric transmission lines; the Ministry of Industry, Energy and Mining, authorizes the use of quarries. DINAMA, the National Environmental Authority (*Dirección Nacional del Medio Ambiente*) is the competent body together with OSE in the case of any discharges into a Class 1 (potable water) body.

(b) Environment

- 3.7 DINAMA, is part of the structure of the Ministry of Housing, Planning and Environment (*Ministerio de Vivienda, Ordenamiento Territorial y Medio Ambiente -MVOTMA*). DINAMA is responsible for all matters related to environmental management and control in Uruguay, including the issuance of an environmental permit to all development projects. Among those, all relevant Project activities, including construction of new berths, industrial facilities, exploitation of quarries, electric line/wire, *etc.*, require the presentation of an Environmental Impact Assessment (EIA). DINAMA is also responsible for enforcing air quality and air emissions standards, solid waste and hazardous wastes management as well as any hazardous substances, noise standards and for regulating groundwater use.

- 3.8 Responsibility regarding wastewater discharges is divided between DINAMA, OSE, and CARU, whereas water quality standards definition and enforcement are shared by DINAMA and OSE. In regard to the historical and archaeological heritage, the responsible authority is *Comisión Nacional de Patrimonio Histórico* (CNPH). The authorization for new quarries is the responsibility of the Ministry of Industry, Energy and Mining, whereas DINAMA is responsible for the environmental permit. Dredging/disposal in Uruguay River should be approved by the DNH and be developed within the specifications indicated by CARU regulations.

(c) Health and Safety

- 3.9 Governmental regulations on occupational health and safety are the responsibility of the Ministry of Employment and Social Security (MTSS), who defines health, hygiene, and safety limits.

B. Legal

(a) Applicable sector

- 3.10 All the legal regulations regarding the use of public water bodies in Uruguay are included in the Code of Waters (*Código de Aguas*) approved by Decree No. 14.859 of 15 December 1978 (*Decreto-ley*). Although there are no specific provisions with regard to the concession of private ports, article 85, § 9° of the Constitution establishes that is the authority of the General Assembly (and therefore it must be done by Law), to "habilitate ports". Similarly, both the Code of Waters and the legislation regarding public ports are to be applied harmoniously.
- 3.11 The main regulation relevant to the Project is Law 17296/2001, which established that an authorization from DNH is required to construct and operate a port facility in Uruguay. It also defines that dredging activities must be approved by DNH and comply with the specifications indicated by CARU.
- 3.12 Given that there is no Land Use Plan in the area, no specific permit or authorization is required from the municipal authority for zoning approval, except for the appropriate construction permit. Similarly, no authorizations are required to construct or operate a private road, or install an electric line within a privately owned property².

(b) Environment

- 3.13 Law No. 16.466 of 19 January 1994, regulated by Decree 435/94, is the main environmental piece of legislation law in Uruguay. It establishes the legal framework and the instruments for environmental protection and prevention of negative environmental impacts and contamination, including the requirements of an Environmental Impact Assessment (EIA) (See paragraph 3.15).

² Only power projects (transmission lines above 150 kV or power plant over 10 MW) require an authorization (*Autorización Ambiental Previa*) by DINAMA.

- 3.14 Environmental permits: To initiate construction, an Environmental Permit is required from the *Ministerio de Vivienda, Ordenamiento Territorial y Medio Ambiente* (MVOTMA), the Ministry of Housing, Planning and Environment, through the *Dirección Nacional de Medio Ambiente* (DINAMA), the National Environmental Authority. An Environmental Permit (*Autorización Ambiental Previa*) is also required for the use of a quarry. Similarly, an authorization for discharges into a river (*Autorización de Desagüe*) is required from DINAMA. If the receiving water body is classified as Class 1 (potable water), a special authorization for discharge from OSE is required.
- 3.15 Environmental Impact Assessment (EIA): Decree 435/94 that regulates Law 16466/94 establishes the requirements for an EIA for all large-scale projects (including construction of ports and docking facilities, construction of industrial facilities or industrial parks, construction of transmission lines over 150 kV, exploitation of quarries, among others), as part of the process of issuing the environmental permit. Such projects, when applying for an environmental permit, must present to DINAMA the project's environmental information prior to initiating any construction activity. DINAMA reviews the project information and classifies the project in one of the three classes: A, B and C (*Certificado de Clasificación Ambiental*). Projects or activities classified as Class A do not need to present an EIA, but an environmental management plan, whereas projects classified as Class B or C require the preparation of EIA, according to the scope and contents as defined in the Decree 435/94. When the EIA is approved, DINAMA issues the environmental authorization (*Autorización Ambiental Previa*).
- 3.16 Dredging approvals: Dredging activities must be approved by both DINAMA and the DNH and be must be developed according to specifications indicated by CARU regulations.
- 3.17 Electric substations are not included in the list of the projects and activities indicated by the environmental regulation existing in Uruguay (Law 16466/94 and Decree 435/94). This list only includes power stations (over 10 MW) and electric lines (over or equal to 150 KV). So, an electric substation does not require an *Autorización Ambiental Previa*. The UTE (*Usinas y Transmisiones Eléctricas*) establishes technical specifications for electric systems, including electric substations and electric lines. The construction of electric systems must be in compliance with these specifications and must be approved by UTE prior to the start-up of the operations.
- 3.18 The Environmental standards or criteria applicable to the Project are indicated below.
- 3.19 Water quality: According to the Decree 253/79, water is classified in four classes based on its potential uses. The Uruguay River is classified as Class 1 (potable use). The water quality standards defined by this Decree for all 4 classes are presented in Table 3.1.
- 3.20 Wastewater discharge and treated effluents: The parameters must be within the standards established by the Decree 253/79. Discharges into the water bodies classified as Class 1 must meet specific requirements (See Table 3.2).
- 3.21 Air quality: Currently, Uruguay does not have an approved regulation on air quality and/or air emissions. However, a proposal for regulation was prepared on June 2000, and is serving as a

reference for air quality and is applicable at a national level (Table 3.3). The standards or limits indicated are based on standards used in several countries, including U.S.A., and also some international organizations, such as World Organization of Health (WHO) and European Economic Community (EEC).

- 3.22 Noise level: The municipal Decree 73/96 defines specific standards on noise applicable to industrial and commercial facilities or activities (Table 3.4).
- 3.23 The *Comisión Administradora del Río Uruguay* (CARU) has its own regulation, which includes a section on contamination of water, standards for water supply and wastewater discharges. The CARU regulation specify the general guidelines for wastewater as follows: Absent of floating matter or visible; solids settling must be less than 1 mg/l (period of 2 hr); oils and greases must be less than 300 mg/l, hydrocarbons must be less than 15 mg/l, absence of large solids (10 mm or most), absence of substances with fiber (wood, hair, textile fiber, etc.).
- 3.24 Finally, the CARU regulation stipulates the conditions for the wastewater discharges from vessels, into the Río Uruguay. Accordingly, the following are not to be discharged into the river (article 1): Hydrocarbons from boat/ship operations, liquid harmful substances from cleaning of boat/ship, untreated water and wastewater, and wastes. The indicated discharges must be disposed only in port facilities or in reception facilities.
- 3.25 Table 3.5 present a list of environmental permits and authorizations applicable to the Project.

International treaties

- 3.26 Uruguay adheres to the following international treaties and agreements on environmental issues: MARPOL - 73/78 (*Convenio Internacional para Prevenir la Contaminacion por Buques*) and Basel Agreement - 1989 (*Convenio Internacional sobre el Control de los Movimientos Transfronterizos de Desechos Peligrosos*).

C. Compliance Status

Environmental permits

- 3.27 The Project Environmental Impact Assessment (EIA) was approved by MVOTMA/DINAMA on December 18, 2000 via the issuance of the *Autorización Ambiental Previa*. Prior to the approval, the EIA was made available to the public in June 2000 and a formal Public Hearing was held in Fray Bentos on November 10, 2000 to discuss the environmental and social aspects of the Project. The EIA was subsequently made available to the public by the IDB in February 2001.
- 3.28 In compliance with the conditions stated in the Environmental Permit, the Company has presented to DINAMA the Final Plans of the Project on January 23, 2002, and on May 31, 2002, the Solid Waste Management Plan³, the design of vegetation curtain, and the Environmental Management

³ MARPOL 73/78 International Convention requires the Port Operator to develop suitable operational standards,

Plan, including the Port abandonment plan. The detailed bathymetric study and the plans of the dredging area are to be presented prior to the initiation of the dredging and filling activities. In addition, the IDB has required a detailed Sediment study and Dredging Plan following ASTM D420-98 "Standard Guide to Site Characterization for Engineering Design and Construction Purposes (referencing specific protocols – for engineering and/or environmental purposes) and consistent with recommendations of EPA/USACE 1998 Evaluation of dredged material proposed for discharge in waters of the US. Testing manual EPA-823-B-98-004, Washington, D.C. and is in compliance with World Bank Technical Paper 126 (See Annex 1). IBD requirement of more detailed sediment study goes beyond Tier 1 of quoted EPA/USACE TIM manual. Table 3.6 presents the Project's detailed status of compliance with the environmental legislation.

IV. ENVIRONMENTAL AND SOCIAL CONDITIONS

- 4.1 The Area of Direct Influence (ADI) encompasses the areas occupied by and immediately adjacent to the construction site (within a limit of 1 km), the stretch of river (0.5 km upstream and 1km downstream) directly adjacent to the area of construction and the access road (to National Route Nos. 2)⁴ (See Figure 4).
- 4.2 The ADI is currently a "greenfield" area, covered by various native and exotic grasses introduced during previous decades of grazing activities, and is uninhabited. The surrounding land use is mostly agricultural. The Sponsor (EUFORES) owns the entire land where the port and all associated facilities will be located (including the private access road, the waste disposal site, the wastewater treatment plant and the electricity and transmission line) as well as the surrounding land. There are no significant remains of forest cover within this area. Along the Uruguay River banks, there are remnants of forest cover of the "riverine" and "tunnel forest"⁵ varieties. Two other water courses occur within the ADI, one to the west (*Arroyo Laureles*) and one to the east (*Arroyo M'Bopicuá*). These watercourses have intermittent flow and are characterized by remnants of "tunnel forest".
- 4.3 The Area of Indirect Influence (AII) encompasses the National Road, the river (from 0.5km downstream of the wharf to the water intake at Fray Bentos), and Fray Bentos urban area. Below is a brief description of the AII (Refer to Figure 4)

A. Environmental

- 4.4 The M'Bopicuá Port (*Terminal Logística M'Bopicuá*) will be located on a natural bluff along a portion of the Uruguay River approximately 6 km upstream from the Brigadier General San Martin International Bridge, which connects the Uruguayan city of Fray Bentos with Argentina. This portion of the river is separated from the main flow by a series of uninhabited islands (Isla Abrigo, Isla Caballadas West, Isla Caballadas East and Isla Zapatero are the only ones close to the site).
- 4.5 Land Use: Other than the urban areas of Frey Bentos, the AII covers areas predominantly and

which will be included in the port management and operating plan to be completed prior to starting operations.

⁴ Given that the dredging plans are not available at this stage of the Project, this definition assumes that any dredging activity will be for filling the support cells only, and will be located within 0.5 km of the construction site on the Uruguay side of the river, according to the requirements in the TOR.

⁵ "Tunnel forest" is a tree and shrub association that typically borders creeks and rivers on the Uruguayan plain

mostly extensive cattle ranching. Historically, more than 80 percent of land in the region is dedicated to grazing and extensive cattle management. A few dairy farms are also found in the region south of Fray Bentos. Ranching practices typically involve extensive grazing of cattle on unimproved pastures. Recently, because of improved management and better soils, improved pastures are being used for cattle grazing. The downturn in market demand in the ranching sector has reduced herd size in the region while agricultural crops have increased in relative importance especially: sunflower, wheat and soybean plantations to the south, and extensive patches of forest plantations of primarily *Eucalyptus* spp. to the north and west. Two small creeks, *Arroyo Laurel* and *Arroyo M'bopicua*, cross the site from south to north. Both watercourses have an intermittent flow and tend to dry out completely during the summer months (December to March) when rainfall is minimal. Both of these creeks flow into the Uruguay River at points that are characterized by forest remnants.

- 4.6 Geology: The area is located on the Fray Bentos formation, a sandstone rock formation made of fine and very fine materials often accompanied by fine sand and clay particles. Soils on this geological formation are of relative good structure, with acidic pH but deficient in plant nutrients (phosphorus and nitrogen). The best of these soils are being exploited for agriculture especially wheat, soybean and sunflower plantations. The majority of these soils is of limited agricultural potential, and is used extensively for grazing.
- 4.7 Hydrology of the Uruguay River: The water is classified as Class 1 and is abstracted, without treatment, via the water intake at Fray Bentos, downstream of the Project site. Table 4.1 presents the results of the physical-chemical analysis in the Uruguay River in the M'Bopicua location.
- 4.8 In the affected stretch (section) of the Uruguay River, the river flow is almost evenly separated in two sections by a set of islands (Abrigo, Caballos, Caballada Oeste, Caballada Este and Zapateros). The main navigation channel is located at the Argentinean side of the islands, whereas the access to the M'Bopicua Port is on the Uruguayan side. According to the information available, the maximum average flow in the Argentinean side was registered in July 1983, of 29.200 m³/sec. The maximum flow through the Uruguayan side of the river in the same period was approximately 16.000 m³/sec. The average flow is estimated at 5.200 m³/sec, and in the portion of the River Uruguay adjacent to the Project site (Uruguayan side) the average flow is approximately 2.800 m³/sec, with an average velocity of 0.22 m/sec and a maximum velocity of 0.67 cm/sec.
- 4.9 Based on the existing conditions, the average velocity of the river for the maximum flow in the area of the proposed Port is estimated at 0.67 m/s, whereas with average level and flow, the velocity would be reduced to 0.22 m/s. These velocity values correspond to the average velocity in the stretch (section), thus significantly bigger numbers should be occurring in the central zones of greater depth in the section.
- 4.10 The reference level adopted (0 of *Puerto de Fray Bentos*), is at +0.55 m above the 0 Wharton and at -0.36 from the 0 Official. The maximum level recorded in the Uruguay River is at Fray Bentos, corresponding to a river overflow in April 1959, of + 6.30 m above the 0 adopted. Nevertheless, the study has considered additional information available after the operation of the Salto Grande Reservoir, which influences the maximum levels and flows of the river. In particular, the level frequency curve from 1978-1993 was used. It shows that in 95 % of the time the Uruguay River surpasses in 0.70m the 0 in the Fray Bentos scale. The maximum level recorded in the same period is of +4.53m above the 0 Official (25 July 1983). The average level of the river is approximately 1.45m above the 0 in the Fray Bentos scale.

- 4.11 The river bottom sediments consist mostly of sands, with finer material close to the shoreline. Bottom sediments susceptible to transportation are fundamentally sands with an average diameter (D50) of 0.25 mm, with a standard deviation of 1.22 mm. In the sections where the river presents low velocities, it is common to find such sediments under a layer of finer sediments (of approximately 0.30m). According to the information available, the sediments do not present a potential to be contaminated, given the existing land use upstream of the Project. Nevertheless, as a condition for Financial Closure, the IDB has required a detailed Sediment Study, beyond EPA/USACE TIM Tier I specs, which will identify contaminated sediments, if any, and propose the appropriate mitigation measures (Refer to paragraph 3.28).
- 4.12 Riverbed morphology is subject to the upstream presence of the Salto Grande dam, which controls sediments flow from erosion in the upper watershed. The dam was designed with regulating capacity and its spillway volume can be controlled. The normal operation is to allow natural overflow over this spillway. In relation to natural processes in the river, a long-term bathymetry study comparing data with a 35-year gap indicates that the situation in the bottom of the river is reasonably stable in the area of influence of the Port, in spite of the Salto Grande Dam effect as a barrier to the sediments transportation in the River.
- 4.13 Flora and Fauna: The natural vegetation found in the site and surrounding area of the Project is of the prairie ecosystem type, which is typical of most of the region. Remnants of riverine forest (shrubs and trees partially resistant to flooding and siltation) are to be found only along the Uruguay River, near the *Saladero* ruins. Along streams, creeks, and small rivers, a variation of the “tunnel forest” ecosystem is also found. “Tunnel forest” is a tree and shrub association that typically borders creeks and rivers on the Uruguayan plain. The following tree species are to be found on the Project site; *Acacia cavens* (espinillo), *Schinus molle* (molle), *Rapanea laetevirens* (canelón), *Salix humboldtiana* (sauce criollo), *Scutia buxifolia* (coronilla) and *Celtis spinosa* (tala). The prairie vegetation also includes many different exotic grasses extensively exploited as pastures for cattle and sheep in the region.
- 4.14 Terrestrial wildlife species are relatively scarce due to limited habitat availability and the secondary nature of forest and grasslands ecosystem. The following species are found on the Project site. For instance, ground-feeding birds such as quail (*Nothura maculosa*), tero (*Vanellus chilensis*) and pigeon (*Columba maculosa*); deer (*Ciervo axis*) and wild guinea pig (*Cavia aperea*) have been also observed. A species of bat (*Lasiurus cinereus*) has been observed in caves near the M’Bopicuá creek, which derives its name from the *guaraní* language for “bat cave”.
- 4.15 A great variety of fish species inhabit the Uruguay River. The most common fish belong to such orders as the *Characiformes* and *Siluriformes*, some of which have commercial or recreational value (*boga*, *dorado*, *patí*, *sabalo*). There is no significant or unique habitat, or spawning area in the vicinity of the Project site. Commercially important fish species are: *Pimelodus maculatus* (Bagre Amarillo), *Rhamdia quelen* (Bagre sapo), *Leporinus obtusidens* (Boga), *Schizodon nasutus* (Boga), *Cyprinus carpio* (Carpa), *Pachyurus bonariensis* (Corvina de río), *Salminus maxillosus* (Dorado), *Catathyridium jenynsi* (Lenguado de río), *Mugil sp.* (Lisa), *Luciopimelodus patí* (Patí), *Odontesthes sp.* (Pejerrey), *Prochilodus lineatus* (Sábalo) and *Pseudoplatystoma* (Surubi).
- 4.16 Ambient Air Quality and Noise: The area of the Project site is rural and there is no industrial source of atmospheric contamination and noise, except from the occasional passing boats. Some traffic hum from the Brigadier General San Martín International Bridge may occasionally raise the general background noise, when facilitated by climatic factors.

B. Socio-Economic

- 4.17 Population and Economic activities: The total population of the Department of Río Negro is of 51,707 inhabitants (*VII Censo Población, III de Hogares y V de Viviendas of 1996*), one of the three lowest population and lowest population density departments, of only 6 inhabitants per km². In relation to the Port site, the nearest significant settlement is the urban area of Fray Bentos, a relatively small town of approximately 30,000 inhabitants.
- 4.18 Extensive ranching and free grazing of sheep and cattle with little or no pasture improvement or management is the dominant land use in the region. Only recently has agriculture become a relevant part of the local economy with the better lands being used for wheat, soybean and sunflower plantation. This process is accompanied by a considerable decline in cattle ranching, with many pastures being abandoned (This is the case of the current site). Also, reforestation incentives by the Uruguayan government have fueled an impressive growth in tree plantations especially of *Eucalyptus* and *Pinus* species, particularly in the Department of Río Negro, where productivity per hectare is above the national productivity level. In 1993, the forested hectare in the Department generated approximately US\$ 382 compared to US\$ 287 at the national level. Almost 70% of the plantations that have been implemented under the support of the Forestry Priority Law (*Ley de Prioridad Forestal*) are concentrated along the coast of the Uruguay River.
- 4.19 During the summer months of December to February, tourism is of relative importance to Fray Bentos, though is limited to through traffic from and to Argentina, with very limited overnight stays.
- 4.20 Employment: The local economic activity depends significantly on the agricultural and forestry activities within the surrounding region. The rural population has decreased in the last decade from 21% to about 16%, creating pressure on towns and urban centers to provide jobs outside the agricultural sector. Changes in the economy have been reflected in the composition of the labor force, which in the last decade incorporated more increases for women (57%) than men (3%), mostly in the urban area of Fray Bentos. The industrial sector, including furniture and food processing, has increased at the expense of the primary agricultural sector, especially livestock production. The service sector such as restaurants and financial services have grown directly as result of the expansion of the timber and lumber processing industries. Although there is some seasonal flow of the labor force into the rural areas during the harvest season (especially of fruits), the urban population is relatively stable. Unemployment rates in 1998 were about 15.7% of the labor force.
- 4.21 Services: Health and educational facilities are sufficient to supply the demand in Fray Bentos. The city of Fray Bentos has a municipal landfill where it disposes of its solid wastes. Urban sanitary effluents, however, are collected and then released into the Uruguay River, without treatment. With the opening of a new hotel in Fray Bentos, there is now sufficient lodging capacity and restaurant facilities in Fray Bentos. Other services and infrastructures in Fray Bentos comprise police and fire fighting capabilities, a public hospital, and a private health clinic.
- 4.22 Archaeological and Historical Heritage: There is one historical site and two archaeological sites in the immediate vicinity of the Project site, all three within the property owned by the Sponsors (Eufores). The historical site, “*Saladero M’Bopicuá*” is the remains of the facilities of “*The River Plate Pressure Meat Preserving Company Limited*”, constructed in 1871. The ruins are located approximately 900 m to the west of Project site. The two archaeological sites are a “Prehistoric

ceramic site” located approximately 1,100 m to the east of the Project site, and a “Low density archaeological site”, containing some ceramic pieces distributed in a 2,750 m² area, located immediately to the south of the Project site and to the east of the access road. In accordance with requirements, both archaeological studies have been presented to the *Comisión Nacional de Patrimonio Arqueológico*.

- 4.23 Landscape: The general landscape is one of a partly forested, steep-sided, indented riverbank, with extensive rural views. North, across the river are the low-lying islands and the far bank of the river. To the east, upstream, and to the west, downstream, the view is generally one of a partly forested, steep-sided, indented riverbank. Also to the west, in the distance, is the Brigadier General San Martin International Bridge.
- 4.24 Indigenous population: There are no indigenous groups in the Project's area of influence, direct and indirect.

V. ENVIRONMENTAL AND SOCIAL IMPACTS

A. Construction

Environmental

- 5.1 Impacts on the Uruguay River: Construction activities such as sheet piling and wharf filling will cause some change to the river morphology and sediment patterns due to the physical presence of the developing docking facilities. Any such changes will be short term, and will become masked by those due to the operational characteristics of the operation of the terminal. The Uruguay River will probably be affected only marginally by runoff and sedimentation from the construction site, given the river's flow and velocity, and therefore its dilution capacity.
- 5.2 Although the information available and the previous studies performed by the Company after EPA/USACE TIM EPA-823-B-98-004 do not indicate any potential for contaminated sediments (given the land use and economic activities in the Uruguay River basin and the sediment containment potential of the Salto Grande Reservoir), potentially fill material extraction (approximately 150,000 m³) and dredging operations could release heavy metals and organic contaminants, which could have an adverse effect on the water and sediment quality of the Uruguay River. Potential impacts include dissolved oxygen depletion, bioaccumulation by fish and shellfish species, and decreased photosynthesis activity through increased turbidity levels. Similarly, disposal of dredged materials may also contribute to some or all of these impacts. To assess in detail these potential impacts, the IDB has requested a more detailed Sediment Study and Dredging Plan, according to Terms of Reference defined by the Company and the Bank consultants at the due-diligence phase (See paragraph 3.28 and Annex 1 for details).
- 5.3 During construction there will be extensive earth works involving removal of the vegetative cover and topsoil. During this period there is greater risk of erosion and subsequent runoff, together with potential pollution and sedimentation of surface water bodies, particularly of the adjacent river. Also, a potential for soil contamination (and water and groundwater contamination) exists from the inadequate disposal of solid wastes and liquid effluents produced by construction activities, such as fuel, oils and chemical containers, used materials contaminated with cleaning fluids and oils, among others, and sanitary effluents, all of which could also potentially affect

negatively the Uruguay River. Nevertheless, given the existing background turbidity of the river, the limited scale of the construction activities and dredging operations, and the limited construction period, these impacts are not likely to be significant. Also, these impacts are reversible and can be mitigated with the appropriate environmental management procedures.

- 5.4 Impacts on Air Quality and Noise: Dust and vehicular emissions will be generated during construction, from the extensive earth moving, excavations and soil compactation. The sources of noise during construction will come from the earthmoving vehicles and from sheet piling and dredging activities. Nevertheless, these are temporary and reversible impacts, and given that will be confined to the site and that there are no population settlement in the adjacent area, none is considered to be significant.
- 5.5 Impacts on Flora and Fauna: Existing vegetation cover will be removed, secondarily affecting fauna species to move into adjacent undisturbed areas. The surface extent of vegetation to be removed is quite small in relation to the surrounding land (approximately 15 ha, of the 150 ha of total area) and it is unlikely to generate a significant loss of genetic material. The physical footprint of the transmission line (5.3 km right-of-way; three lines supported by single pole structures) indicates that this not a significant land-take component of the Project.

Social

- 5.6 Impacts of Campsite and related Social Impacts: Temporary settlement at the site during construction is a potential impact and could represent an additional burden to the public services of Fray Bentos. Nevertheless, given the small number of outside workers employed during construction (the majority will be hired from the surrounding region), no significant changes to the demographics of the Fray Bentos region and consequently, very limited impact on existing health, educational and recreational facilities are expected. Unauthorized settlements and temporary housing outside the construction area is not anticipated, given the control that the Sponsors exert on the extensive area of their property that surrounds the site. Also, there will be no workers' camp, except for properly equipped trailers on or near the site. Therefore, given the site location, given that the port facilities occupy only a small fraction of the entire Sponsors' property, which is completely unpopulated, and that the Sponsor has complete control of access to the area, such impacts are neither likely to occur nor to be significant.
- 5.7 Impacts on Archaeological and Historical Heritage: Although the ruins of the “Saladero M’Bopicuá” are located approximately 900 m to the west of Project site, they are unlikely to be affected by the construction activities given the Sponsors control on their property. The “Prehistoric ceramic site” which is located approximately 1100 m to the east of the Project site is also unlikely to be affected and is unlikely to attract any visiting worker. The “Low density archaeological site” area is located in the area of the project.
- 5.8 Impacts on Transportation: During construction activities there will be an increase in heavy traffic with materials and equipments. Nevertheless, this impact is not estimated to be significant given that the construction is of mid size and the national road access system already supports heavy traffic that goes to the Fray Bentos Port, and tourism traffic from Argentina. On the other hand, traffic accessing the Port facility will not go through the urban area of Fray Bentos, given that a direct access road from National Route No. 24 was built as part of the Project.

Health and Safety

- 5.9 Health and safety impacts during construction are related to incidents and accidents to which workers are exposed, such as different types of injuries and falls. In addition, the dredging and filling activities incorporate other safety issues such hazards related to dredging and filling activities, such as falls and drowning. Although it is unlikely that contaminated sediments will be involved in the dredging and filling activities, a potential health impact could also occur.

B. Operation Phase

Environmental

- 5.15 Impacts on Uruguay River : The Port operations can potentially contaminate the river water with solid wastes, oils and greases, and non-treated liquid effluents, from the ships, the Port or the chips plant. Also such contamination can involve other products manipulated in the Port in the future, such as rice and citrus fruits (possibly containerized), as a result from accidents during handling, loading and unloading operations. Other potential impacts derive from ship traffic on this stretch of the Uruguay River and eventually from changes in river morphology and sediment patterns due to the physical presence of the new docking facilities. Circulation of large ships (Panamax 60000 DWT) can increase suspended particles and thus turbidity, which could potentially affect the aquatic biota. Nevertheless, any increase in turbidity will only be incremental, given the current standards in the Uruguay River (14 NTU - Nephelometric Turbidity Unit).
- 5.16 The impacts on river flow and morphology (due to erosion of river bed and bank) as a result of the new wharf although permanent and irreversible, are not expected to be significant, given that the wharf structure occupies approximately 7% (150 m) of the total river section at the Port location, the impact on river dynamics and river morphology is reduced considerably.
- 5.17 The substitution of the existing vegetation cover for mostly paved areas will increase run-off patterns (quality, flow and speed). Also, run-off water can potentially become contaminated with oils and greases manipulated in the terminal. Other potential impacts are related to inadequate solid wastes (including hazardous wastes) and liquid effluents from terminal operations, such as fuels, oils and greases used in the terminal and the wood chip plant. Nevertheless, these impacts can be avoided and mitigated with an adequate drainage project and standard good practice waste management plan.
- 5.18 Impacts on Air Quality and Noise: Impacts on air quality will be permanent, as a result of increased emissions from heavy traffic and vehicles, and dust from the chipping plant, transfer system, and from loading and unloading of chips to ships. These activities will also produce noise levels that will be above the existing background, given that the area is currently a "greenfield". There will be noise from ship movements, crane and conveyor belts operations and from the chipping plant. Nevertheless, in spite of the magnitude of these impacts, their importance will be minimized, given that the entire adjacent area belongs to the Sponsors (EUFORES) and is not intended for future residential development plans. On the other hand, noise mitigation at the wood-chipping plant can be achieved with the use of standard equipment and noise abatement measures.
- 5.19 Impacts on Flora and Fauna: During the operational phase of the Project, it is not expected any incremental impact on the vegetation cover with regard to the impacts that will occur during construction. Most of the non-operational areas of the Port will be revegetated.
- 5.20 Potential indirect negative impacts on flora an fauna as a result of the expansion on the forestry activities of the Sponsors, and in Uruguay in general, were not identified as a direct result of the

Project. The forestry activities are expanded as a result of the Government's incentive plan. On the other hand, the Sponsors forestry activities are being certified with ISO 14001 and ISO 9001.

(b) Social Impacts

- 5.21 Impacts on Land Use and Long-term Urban and Social Impacts: The change in land use from undeveloped land to commercial activity is a negative impact that could potentially generate secondary social effects, such as increase in land values, pressure for uncontrolled urbanization, and even result in displacement of low-income population. Nevertheless, because there are no existing pressures on land use in the Project's area of influence, changes in land use patterns and land value are unlikely to occur. During operation, the port will be staffed with office workers and machine operators, the great majority of whom will come from Fray Bentos and thus reside off-site.
- 5.22 The scale of the operation at M'Bopicua in terms of employment generation is such that it is not likely to generate additional social problems such as increase in prostitution and crime rates, economic displacement from rural areas, or alcoholism. There is little probability of dramatic changes in the quality of life in the region as a result of the operation of the M'Bopicua port facility.
- 5.23 Impacts on Transportation (terrestrial and maritime traffic): The M'Bopicua Port will contribute to change the current cargo transportation patterns, mainly maritime, and to a less extent also terrestrial, given that it will attract part of the cargo currently directly to other ports. The net increase in all cargo transportation in Uruguay as a whole will not be generated by the Project, but is linked to the increase in available wood for export, given that the forests planted under the Government's 1990 incentive program are reaching maturity. Approximately 500.000 m³ of timber and similar volume of chips will pass through the terminal in 2003, increasing up to 600.000 m³ of timber in 2005 and up to 1.800.000 m³ of chips in 2014. In the absence of the Project, these volumes would be directed to Fray Bentos, using the existing national road system. With the construction of M'Bopicua this heavy traffic will be deviated from the urban zone of Fray Bentos. In relation to maritime traffic, the analysis is similar, given that increase in ship movements will occur as a result of the increased export of forestry products, regardless of the Project.
- 5.24 Impacts on Landscape: The aesthetic impact of the port facility will be significant. The cranes, conveyor belts and piles of wood and chips will be highly visible from the adjacent areas. However, this is a common landscape in the vicinity of the Port, given the proximity with the Port of Fray Bentos. Also, the adjacent areas are inhabited and belong entirely to the Sponsors, which decreases the significance of any visual impacts. Nevertheless, this impact will be mitigated with the use of appropriate environmental management measures as proposed by the Company.

(c) Health and Safety

- 5.25 During operation, there are several health and safety issues to consider: work-place accidents (e.g. as a result of operation of machinery at the wood-chipping plant and the loading/unloading operations), vehicle movement within the site, and hazards related to navigation and maritime traffic. Nevertheless, the navigation channel is located in the Argentinean branch of the River, and therefore, the maritime traffic in the Uruguayan branch will be mainly that directed to the Port.

C. Positive Impacts

- 5.27 The principal positive impacts from the Project are related to the provision of job opportunities at the local level (Fray Bentos and vicinity), and to new sources of revenue for municipal authorities. Together, these can foster the local economy in the region around Fray Bentos. Additionally, there will be significant environmental benefits from the traffic diversion from the Fray Bentos to the M'Bopicua Port. Noise levels and air emissions from vehicles and trucks should decrease within Fray Bentos city limits. Another positive impact is the creation of two conservation and protection areas, in the area adjacent to the Port, under the responsibility of the Sponsors: a "private reserve" (See paragraph 6. 5) and the protection and recuperation of the archaeological ruins of the *Saladero de M'Bopicua* (See paragraph 10).
- 5.28 With regard to the provision of job opportunities, during the construction phase the Project will generate approximately 150 direct employment positions. Indirect employment was estimated at about 50 positions. Additionally, the Sponsors will increase its reforestation and timber production business, which in turn will create additional employment in the depressed rural sector. At the operational phase, the Port operations will involve approximately 85–90 permanent workers. Even though some specially trained workers may come from outside the region, the majority of them will be hired locally. Although the capacity to generate direct employment will be limited at this phase, the indirect effects upon the local economy could be significant.
- 5.29 Traffic into the urban areas will be reduced, and thus air pollution and noise, as a result of the port being located 12 km north of the town and with a direct access from National Route No. 24. Eventually, the increased tax revenues generated by the port operation could allow the Municipal authorities to improve public services such as wastewater collection and primary treatment services within the urban area, police and the fire fighting capacity, and other social services, thus improving the quality of life for the population of Fray Bentos.

VI. ENVIRONMENTAL, SOCIAL AND HEALTH AND SAFETY MANAGEMENT

- 6.1 The general environmental and social mitigation measures and monitoring programs for both construction and operational phases are contained in the EIA for the Project (*Estudio de Impacto Ambiental Terminal Logística M'Bopicuá*, May 2000). These general mitigation measures were further detailed in the Environmental Management Plan - EMP (*Plan de Gestión Ambiental - PGA*), prepared for the construction phase. Similarly, an Environmental Management Plan will be prepared by the Port operator, prior to the start of the Port operations. The project mitigation measures and the monitoring programs are summarized below.

A. Construction Phase

(a) Mitigation Measures

Environmental

- 6.2 Mitigation of Impacts on the Uruguay River: Changes to river sedimentation patterns and morphology will be managed through the Sediment study and Dredging Plan, currently under development by the Contractor, according to specifications issued by TLM, which were developed based on the Terms of Reference prepared by TLM and IDB consultants during the due-diligence phase. According to IDB requirements, the Plan must be made available sixty days prior to the beginning of the dredging works, and will be a requirement for the Financial Closure of the loan.

- 6.3 The EIA and the EMP for the development and construction of the Project contain technical specifications to prevent erosion, run-off contamination and sedimentation of the Uruguay River during the construction phase, such as (i) Protection of the docking platform upstream from the berth; (ii) channelling surface water run-off to sedimentation basin prior to discharge into the water bodies; (iii) rehabilitation of erodible terrain as soon as practicable; (iv) protection of natural drainage channels with berm straw or fabric barriers; (v) design final grading as to ensure that stormwater runoff does not accumulate and become stagnant, potentially contaminating surface waters; (vi) overland drainage will be controlled to prevent channeling and sediment transport by diverting flows from areas where soils are exposed, and/or by providing filter barriers or settling basins to remove sediment before the runoff is discharged to surface waters; and (vii) culverts will be provided as necessary to prevent the road from disrupting or radically changing the existing drainage regime, , among others.
- 6.4 Mitigation of Impacts on Air Quality and Noise: Given that no sensitive receptors exist in the vicinity of the site, only the standard environmental control measures are proposed in the EMP such as (i) spray areas of earth movement and leveling, and fine materials stock piles with water for dust control; and (ii) installation of silencers in construction equipment.
- 6.5 Mitigation of Impacts on Flora and Fauna: The proposed mitigation measures include standard procedures such as (i) limitation of clearing to the minimum necessary (to avoid re-vegetation after decommissioning of the construction site) by signaling the perimeter to be cleared and the trees to be avoided; (ii) an appropriate education program among workers to avoid recollection of and damage to native flora and fauna species; and (iii) signaling of any relevant flora species. Additionally, representative samples of the flora and fauna including that of the river-shore forest (*bosque nativo ribereño*) are protected by the Sponsors within their property adjacent to the site, under a strategy of “private preserve,” eventually to be used for recreational and educational purposes. It includes the conservation and reproduction of botanical genetic materials of endemic species threatened with extinction. In total the reserve carries 10,000 plants of some 30 different species, both endemic and exotic. The protected area encompasses 150 ha, and is surrounded by a 100 m-wide vegetation screen.
- 6.6 Waste management: Standard environmental management procedures to mitigate impacts on soil include separate removal of topsoil and storage for future revegetation purposes and waste management requirements to avoid soil contamination. It is required that a specific area be designated and prepared to receive domestic and organic wastes, and that hazardous wastes be removed to authorized sites. Collection and recycling of used lubricants, storage and liquid impoundment areas will be designed with secondary containment, such as dikes or berms.
- 6.7 To avoid soil and run-off contamination, the fuel supply system for the vehicles and machinery operating in the construction site will be equipped with an automatic stopping device. Hydraulic liquid, lubricants, and used oils will be stored in special tanks. A register of incoming and outgoing oils (in and out of the construction site) will also be maintained.
- 6.8 Other environmental management requirements: With regard to the use of materials for filling, exploitation of quarries and use of other construction materials such as sands and gravels, it is required that all materials will come from existing quarries, which need to have an Environmental Permit from DINAMA (If located in Uruguay) or from dredging of the Uruguay River. The filling will be obtained with 1/3 of waste materials from a quarry located in Argentina and 2/3 of dredged materials from the Uruguay River. The material from Argentina is a combination of fine-grained

by-product material and sand produced as a result of the washing of the quarried material, which is not suitable for subsequent rehabilitation activities, at the quarry. These materials are located in stockpiles adjacent to the river. In contrast to Uruguayan quarries, the Argentinean quarry is situated closer to the River Uruguay facilitating easy transfer from the quarry to the transportation vessel and from there to the Project. The alternative of using a quarry in Uruguay would entail a convoy of trucks to the Port site, contributing air emissions and noise, and would require some method to get the material from the trucks to the filling area, lying about 80 m out from the river bank.

Social

- 6.9 Mitigation of Land Use and other Social Impacts: To avoid unrealistic expectations on employment, and thus avoid undesired migration of people looking for job opportunities during construction, the EPC will implement an Information Disclosure and Social Communication plan that will disclose information on the Project, with respect to the availability of employment opportunities, the start of construction, and the main impacts and consequences on the population. This plan will be addressed to both the general public and the government authorities. The information will be disclosed locally on local media and radio, and will also be presented to the Municipal authorities and social organizations.
- 6.10 Archaeological and Historical Heritage: The archaeological studies for the preservation and recuperation of both the “Low density archaeological site” and the “Prehistoric ceramic site” were both presented to the *Comisión Nacional de Patrimonio Arqueológicos*. Proposed mitigation measures include a detailed register and rescue/removing of the archaeological material existing on the ground in each corresponding area. The “Low density archaeological site” report recommends that the ceramic materials be properly collected, prior to the start of the construction work. Archaeological specialists, who have done survey work in the vicinity, have made the collections and presented the final report that was approved by the *Comisión Nacional de Patrimonio Arqueológico*. With reference to the preservation and recuperation of the archeological and historical resources of the “*Saladero de M'Bopicua*”, which are located within the land adjacent to the site and owned by the Project Sponsors, DINAMA approved and the Sponsors are developing a protection and recuperation plan for the ruins, with a potential use for educational and recreational activities.
- 6.11 Mitigation of Visual Impacts: The establishment of forest curtains to avoid the visual impacts from the adjacent sites at south and southwest quadrants are going to be implemented as part of the “private reserve” established by the Sponsors. The forest curtain is 100 m wide and 2,200 m long. The site will be visible from the north to northwest, but no residential or other activities exist.
- 6.12 Mitigation of Transportation Impacts: Transportation for the construction of the terminal will use the same national road system that is currently used. Given the size and magnitude of the incremental impacts no major mitigation measure was designed, with the exception of: (i) A control plan for the trucks operating in the construction area will be implemented in coordination with local authorities, as to ensure that only authorized trucks participate in the works and to avoid that trucks transporting migrants have access to the site; (ii) all drivers will be required to be habilitated and trained on “defensive driving”; (iii) drivers will respect the maximum allowable limits in the vicinity of the site will be of 45 km/hour.

- 6.13 In addition, the EPC will implement an appropriate transportation service (bus, van) for the workers will also be implemented, especially for those residing in Fray Bentos, Nuevo Berlín, Bellaco, and San Javier, thus avoiding the settlement of workers and families near the Project area.

Health and Safety

- 6.14 In compliance with the health, hygiene, and safety conditions established in Law 16074/89 and Decrees 406/88 and 89/95, issued by the Ministry of Labor, the EMP for the construction of the Project contains technical specifications to prevent occupational health and safety risks, mainly during dredging and filling activities.

(b) Operations

Environmental

- 6.15 Mitigation of Impacts in the Uruguay River: To avoid contamination of the Uruguay River by runoff and liquid effluents, the Port design incorporates a wastewater collection and treatment system that will cover the entire operational areas (including access routes, material pile areas, platform, wood-chipping facility, berth and all service areas). The system will collect surface water runoff potentially contaminated with oils and grease via a storm drainage system and direct it to two stabilization ponds (after passing through an oil/water separator), to be reduced by anaerobic and aerobic digestion, and further evaporation, and then infiltrated into the ground, once the effluent has reached the established environmental standards. Sanitary effluents from both the Port operations will also be directed to the treatment ponds and the sludge will be disposed in the controlled sanitary landfill (Refer to paragraphs 3.15 and 3.16 for the description of the system). To avoid contamination of soil and water, the collection and recycling of used lubricants, storage and liquid impoundment areas were designed with secondary containment, such as dikes or berms. Overland drainage flows will be diverted from areas where soils are exposed, and/or by providing filter barriers or settling basins to remove sediment before the runoff is discharged to surface waters. The culverts will prevent the road from disrupting or radically changing the existing drainage regime. The river banks will be maintained with the maximum vegetation density possible as to limit erosion, absorb run-off and thus protect the marine biota. The sludge from the oils/separator will be disposed of in the solid waste controlled landfill (Refer to paragraph 3.17).
- 6.16 Solids wastes generated by the Project will be disposed of in a controlled landfill within the Project area (Refer to paragraph 6.17). On-site storage of hazardous materials (small quantities of oils and lubricants) and wastes will be minimized. Hazardous wastes will be disposed of in authorized areas, whereas solid wastes will be directed to the controlled landfill. Ship wastes will be disposed of in accordance with the MARPOL requirements in the on-site controlled landfill. As a requirement from the Environmental Permit, a detailed waste management plan will be developed as part of the EMP for operations.
- 6.17 Given that it is a private port, a Port Manual will be developed to orient all operators and vessels using the Port facilities. It will include the Port environmental, and health and safety requirements regarding water pollution control and management of solid and liquid wastes (both in land and off shore). The Manual will include, among other information: general port information, available services, operating rules, Government controls on health, customs and immigration, Port service rates, forbidden substances, and requirements regarding origin's certification for all wood exported through the facilities.

- 6.18 The Manual will also contain requirements regarding vessels documentation and maneuvering, reception of bilge water and residues, opening and closing hatches, presentation of a loading plan, records of ballast and draft on arrival, trimming, de-ballasting, and safety measures and fire prevention requirements. In addition, an educational campaign addressing the ships and boats will be designed to encourage compliance with legislation regarding solid and liquids wastes disposal.
- 6.19 Mitigation of Impact on Air and Noise: The surrounding noise and environmental conditions will be maintained through forest or tree buffers around the limits of the property.
- 6.20 Mitigation of Impacts on Flora and Fauna: Other than the implementation of the "private reserve" in the 150 ha of the adjacent property that belongs to the Sponsor, additional mitigation measures are proposed for the operational phase of the project: (i) An appropriate education program should be implemented among ship operators and dock workers in order to avoid the potential impacts on the native vegetation along the river and on the aquatic flora by the non-authorized disposal of foreign materials from boats/ships or from land operations (materials from the cleaning of boat/ships such as wood, bark, plastic, fuel, used oils, *etc.*); (ii) in the Project area covered by grasses, non-invading species (native shrubs and grasses) should be utilized. A control of the existing invading species will be carried out (including the following species: paraísos, ligustros *Ligustrum*, ligustrinas *Ligustrum sp*, espina de Cristo *Gleditsia triacanthos*, crategus *Piracantha spp*, pinos *Pinus spp*, *Eucalyptus spp*, fresnos *Fraxinus spp*, acacias *Acacia spp*, madreSelva, *etc.*); and signaling of the protected species as well as educational signals regarding protection of fauna.

Social

- 6.21 Impacts on Land Use and Other Social Impacts: Given that based on the size and scale of the terminal activities, relevant impacts were not identified. Therefore, only standard mitigation measures similar to those proposed for the construction phase were proposed for the operational phase: (i) In order to avoid over-expectations about the Project's economic impact, especially about employment, a brief document about employment opportunities during project operation should be presented to the authorities and social organizations and be made available for consultation to the local population and community groups; (ii) the Company and the Project Sponsors will cooperate with the local authorities to identify and take the necessary actions to avoid uncontrolled and unplanned settlement in the property or its adjacent areas. It is also proposed that, as feasible, a training program for the operational activities of the terminal be offered to the local population of Fray Bentos and other communities in the region.
- 6.22 Impacts on Transportation (terrestrial and maritime traffic): It is proposed that a Traffic and Signaling Plan be developed for the national access roads as well as the access roads to Fray Bentos, as to divert heavy traffic from the urban areas, and to improve vertical signaling. This Plan is to be designed in cooperation with national and municipal transportation authorities. It is also proposed that the Port Operator establish a control plan for the trucks operating in the Project area, to avoid non-authorized trucks from participating in the port operations. In addition, taking in consideration that the Port operations will be using the same national road system that is currently used and that would be used in the absence of the Project, the Ministry of Transportation and Public Services (MTO, by its acronym in Spanish) has developed a Forestry Product Transportation Program (*Programa de Transportes de Productos Forestales*), which includes maintenance and upgrading investments in the national primary and secondary road network that links the major forestry concessions to the terminals.

- 6.23 **Mitigation of Visual Impacts:** A forest curtain and vegetation screen was partially implemented at prior to starting of the construction phase, and will be completed for the operational phase. In addition, the river banks will be reforested as densely as possible.

Health and Safety

- 6.24 The health, hygiene, and occupational safety conditions and procedures of the operational phase of the Port will be developed as part of the Health and Safety Plan for Operations. The Health and Safety Plan will contain the identification of all potential health and safety hazards, all the necessary procedures and equipment which are technically appropriate to deal with the identified risks and hazards; the identifications of all responsibilities and authorities related to the implementation of the Plan; supervision methods (e.g., audits, documentation and record-keeping, on-site monitoring, medical surveillance, etc.) to be implemented to ensure that the Plan is completely and properly implemented by all persons; the specific Training program that will be provided and the minimum levels of training required; the emergency response procedures; and an estimated cost and time schedule and assigned responsibility for implementation, for each component of the Plan.

B. Monitoring Program

During Construction

- 6.25 The proposed monitoring programs proposed in the EIA and in the EMP for construction, the Uruguay River will be monitored through bathymetry (once a year) and water quality, every six months, upstream and downstream, for the following parameters: dissolved oxygen, temperature, electric conductivity, and pH. Laboratory analysis include the following parameters: Total, setting, and suspended solids, including fines and volatiles; Biochemical Oxygen Demand (BOD₅); Chemical Oxygen Demand (COD); greases and oils; heavy metals; pesticides, fecal coliforms. In addition, a specific monitoring program will be prepared for the dredging phase, according to the TORs prepared by TLM and IDB during the environmental and social due-diligence (Refer to Annex 1 for the TOR). These monitoring programs are presented in Table 6.1. In addition, as part of the requirements of the AAP, the bat species (*Murciélago Escarchado*) will be monitored. A survey and baseline study was performed prior to construction initiation, and a second study will be conducted at the end of the construction period and during the Port operations.

During Operations

- 6.26 The Uruguay River will be monitored for flow, bathymetry and water quality. The monitoring will include flow determinations in several conditions in the transversal section of the river, in the direction where the port will be located. A total of 5 vertical measurements and 7 speed determinations per measurement. Water samples will be collected together with flow measurements for the monitoring of Concentrated suspended material (solid). Level monitoring will involve the installation of a limnimeter (level register) and two daily measurements. Bathymetry will include an annual bathymetry study to be done within an area 1 km upstream and 1 km downstream on the Río Uruguay. During the bathymetry studies, three sections of the river, each one of 1 km of long, will be analyzed to determine the forms existing in the river bottom. The environmental monitoring for project operation is presented in Table 6.2, including occupational health and safety monitoring. Social and occupational health and safety monitoring include noise measurements every 6 months. The noise monitoring has been defined to address both the environmental and the occupational noise levels, in particular in the chipping plant.

- 6.27 The monitoring program will be further detailed as part of the EMP for the operational phase, and should include community-based oversight and conflict resolution mechanisms (This component to be developed in coordination with the local authorities).

C. Contingency Plans and Procedures

- 6.28 A Contingency Plan will be developed for the operational phase and will include general guidelines and procedures for the events of fire, labor accidents, and hydrocarbons spills, both in land and in the river. The procedures for spill emergency response include spills related to accidents with ships during loading / unloading operations. Fire fighting cover potential fire risk points and fire event impacts, good housekeeping, fire watch, firefighting systems and equipment, and the necessary operational crew.
- 6.29 For occupational accidents, the procedures will cover first aid, the establishment of the Hygiene and Safety Unit, the establishment of an infirmary, the availability of a medic and ambulance, and the plan for labor accident prevention, named “zero-accident”, among others. There will also be procedures for fire control, and emergency response to labor or occupational accidents (such as falls in the water and drowning) . The following institutions located in Fray Bentos are involved in the Emergency response Plan for the operational phases: the fire station, the public hospital, and the private clinic (AMEDRIN, *Asociación Médica de Río Negro*).

D. Environmental, Health and Safety Management

- 6.30 The Project will implement an Environmental, and Health and Safety Management System, compatible with ISO 14001 and OSHAS procedures. Both the EPC Contractor and the Port Operator will implement the corresponding Environmental and Health and Safety Units, which will be responsible for the implementation of the Environmental Management Plans and the Health and Safety Plans, for both the construction and the operational phases, respectively.
- 6.31 During construction, this structure is already in place at the EPC Contractor and it is performing in a satisfactory manner. As part of the proposed management system, a minimum of 4 independent environmental audits will be performed, mainly of the dredging and filling activities, the civil works at the berth, the construction of the storage areas and the liquid effluents treatment system.
- 6.32 For the operational phase, the Port Operator is required to be certified on ISO 14001 within a period of 3 years from starting the operations.

VII. INFORMATION DISCLOSURE AND PUBLIC PARTICIPATION

- 7.1 The Project Environmental Impact Assessment (EIA) was approved by MVOTMA/DINAMA on December 18, 2000 and a Public Hearing was held in Fray Bentos on November 10, 2000. The Public Hearing was held on November 10, 2000, in Fray Bentos and was attended by approximately 40 persons.
- 7.2 The EIA Report (*Informe Ambiental Resumen*) was made available for public consultation in Montevideo, at DINAMA offices, and at the municipal offices (*Intendencia Municipal de Río Negro*) in Fray Bentos, from June to November 2000. The EIA was subsequently made available

to the public by the IDB in February 2001. The notices for the realization of the Public Hearing were published on October 4, 2000, in two national papers: the National Gazette (*Diario Oficial*) and *El Observador*.

- 7.3 During the Public Hearing, concerns were expressed mainly from two organizations: MOVITDE, a local non-governmental organization (NGO), and POTENSUR S.A., a private company that was promoting a port project (*Complejo Puerto Laureles*) located 4 km downstream from the Terminal. Although MOVITDE recognized that the Project will have a positive impact on the unemployed population in Fray Bentos, the NGO raised the following concerns: (i) The forest activity promoted by the Government at a national level will affect, in the future, the soil quality of the zone and the country in general (*Eucalyptus* plantations), impacting the land and cattle activity; (ii) potential risk of pollution of the Uruguay River (including potential impacts on the water supply of Fray Bentos downstream from the Port), which could be caused by chemicals and oil spills generated by Port activities; and (iii) installation in the future of a pulp and paper mill, with a potential environmental impact on the Uruguay River, Fray Bentos, and the region.
- 7.4 The proposed information disclosure and social communication programs will be designed to improve the understanding about the specific social and environmental mitigation measures that will be implemented by the Port Operator, such as water pollution control, waste management, and control of vehicular traffic and accidents, among other.

VIII. RECOMMENDATIONS

- 8.1 The Bank (IDB) will require as part of the Loan Agreement that the Company (*TLM - Terminal Logistica M'Bopigua*) and all portions of the Project shall, at all times during the life of the Loan Agreement, comply with each of the following:
- (a) All applicable environmental, health and safety Uruguayan regulatory requirements, including all environmental, health and safety requirements of the Project contracts, and any subsequent modifications, and all requirements associated with any environmental, health and safety related permits, authorizations, or licenses that apply to the Project or the Company.
 - (b) All aspects and components of the various Project-related environmental, and health and safety plans or related documents.
 - (c) Applicable aspects of the World Bank General Environmental Guidelines (World Bank Pollution Prevention and Abatement Handbook, 1998), including ambient noise levels and wastewater discharge limits.
 - (d) Applicable aspects of the International Finance Corporation Specific Health and Safety Guidelines for Port and Harbor Facilities (1999).
 - (e) Consult with IDB before approving or implementing any and all substantive changes to the Project or its timetable that could potentially have negative environmental, social, or health and safety effects.
 - (f) Send written notice of any and all noncompliance with any environmental requirement of the Loan Agreement and any significant environmental, social, or health and safety accident, impact, event or environmental claim.
 - (g) Ensure that all companies contracted for construction or operation activities comply with the applicable environmental and social requirements of the Loan Agreement.

- (h) Implement ongoing information disclosure and consultation activities related to environmental, social, and health and safety aspects of the project.
 - (i) Implement an environmental, health and safety management system that is consistent with ISO 14001 and BS 8800 (for environment and health and safety, respectively), for the construction and the operation phases.
- 8.2 Prior to the date of Financial Closure, the Company must:
- (a) Present the final Sediment Study and Dredging Plan, in form and substance acceptable to the IDB.
 - (b) Present the final Environmental, Health and Safety Management System for the construction phase.
 - (c) Present evidence of compliance with all the requirements and conditions in the Project Environmental Permit (*Autorización Ambiental Previa*) issued by MVOTMA on 18 December 2000.
- 8.3 Prior to First Disbursement of the Loan, the Company must present, in form and substance acceptable to the IDB, the:
- (a) Final Environmental and Social Management Plan for Construction, including the Information Disclosure and Social Communication Plan and the final designs for the water and the electricity supply systems, the wastewater and solid wastes treatment plants, the fire fighting system, the wood chipping plant and the corresponding noise-abatement and air pollution control equipments and measures.
 - (b) Final Health and Safety Plan for Construction, including the Traffic Management component.
 - (c) Final Contingency and Emergency Plan for Construction (including the Spill Prevention and CounterControl Plan).
- 8.4 Prior to the initiation of operations, the Company must submit, in form and substance acceptable to the IDB, the:
- (a) Environmental and Social Management Plan for the operational phase;
 - (b) Health and Safety Management Plan for the operational phase, including the Traffic Management component, and the requirements regarding origin's certification for all wood exported through the facilities;
 - (c) Contingency and Emergency Plan for the operational phase (including the Spill Prevention and CounterControl Plan); and
 - (d) Environmental, Health and Safety Management System for the operational phase, including the Port Manual.
- 8.5 Prior to each disbursement, the Company must certify compliance with all environmental, social, and health and safety requirements in the Loan Agreement, and such compliance must be certified by the IDB external environmental and social consultant.
- 8.6 During the life of the Loan Agreement, the Company must prepare and submit an Environmental and Social Compliance Report, in form, content and frequency as determined by the IDB.
- 8.7 The Bank will monitor the Project's environmental, social, and health and safety aspects via internal Bank supervision actions (e.g., site visits, review of documentation, etc.) and will contract

an external independent environmental and social consultant to assist the Bank in the supervision and monitoring of the Project. In addition, the Bank will have the right, as part of the Loan Agreement, to contract an external independent environmental, health, and safety audit, if needed, at the Company's expenses.

8.8 Prior to the implementation of Phases 2 and 3, the Company must present in form and substance acceptable to IDB, the following documents:

- (a) EIA for the proposed expansion.
- (b) Environmental, Health and Safety Management Plans for construction.
- (c) Updated Environmental, Health and Safety Management Plans for Operations.